

From front cover:

Wattway

For decades, TIPCO Asphalt Group has shared our knowledge and expertise with our strategic partner COLAS Group: a major French civil engineering firm specializing in road construction.

Wattway was result of more than 5 years of development commissioned by COLAS Group. This disruptive innovation revolutionizes road infrastructure by adding new function to road surface, that can produce renewable energy. Wattway is designed by Colas' CST (the Colas Campus for Science and Techniques) in partnership with INES (French National Solar Energy Institute). Launched in 2015, it is the world's first photovoltaic road surfacing solution that is able to provide power to streetlights, signs, tramways, as well as residential houses, offices etc.

Roads of tomorrow will possess new functionalities such as producing electricity or developing intelligent road data networks. With our strategic partner COLAS' recent innovations, these are already made possible by Wattway and Flowell solutions. These road systems also allow possible real-time information on traffic, in order to manage traffic dynamically, and to roll out automatic diagnosing programs in the pavement itself.

In the near future, one can also imagine electric vehicles being charged directly on the road surface via induction technology.





SUSTAINABILITY HIGHLIGHTS 2019

SALES REVENUE*
THB
37,626
Million (Sales Growth 35% on Last Year)





DIVIDEND PER SHARE 1.50*

(Increased 4 times from Last Year 0.30 THB)

★ Final dividend of 1.10 Baht per share is subjected to approval at 2020 Annual General Meeting

Financial Highlights

EBITDA
THB

3,953
Million (Growth 61% on Last Year 2,457 M.THB)

NET PROFIT THB

3,123

Million (Growth from Last Year 564 M.THB)

NET PROFIT MARGIN

8.30

(Growth from Last Year 2.02%)



Innovation Leader

We increased the sales volume of ULA ParaAC*

over 22 percent compared to the 2018 baseline.

We reduced our GHG Emissions Intensity in 2019 by 7.6%

*ULA Para AC was the Innovation product launched in late 2018



Eco-Efficiency Operations

(of target 4%) compared to the base year 2018 (Started year).



Sustainability

Safety Awareness

We achieved the severe operation accident frequency rate is 1.67, the severe truck accident frequency rate is 0.00 and 0 case of Work-related ill Health at all 5 plants in Thailand.





Strong Corporate Governance Transparency



Value for the Future

We **achieved** the corporate governance scoring at an "Excellent" level of recognition (5 stars) under the Corporate Governance Report of The Listed Companies 2019 (CGR) project undertaken by Thai Institute of Directors Association (IOD) with support from Stock Exchange of Thailand (SET)This indicates the Company's commitment and achievement in sustainability performance in respect of environment, social and governance (ESG).

We achieved the training hours above 50 hours / person / year which is far better than 2019 target of 24 hours / person / year. Our people enjoyed the opportunity to develop their skills to achieve their full potential. They each made their own individual contribution to the spirit of collaborative and innovative culture organization.





It is our key responsibility to ensure our employees' safety,

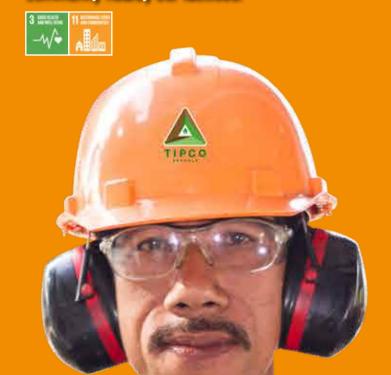
consideration of well-beings of local community nearby our

during works and from-to their homes while taking full

SAFETY AWARENESS – Safety is Our Top Priority

With corporate best practices are fully implemented, work safety is our top priority.

Standard safety equipment and gears are provided to our staff across different functions. We also provide protecting mask to people in local community nearby our facilities.



Mr. Pongpan Kongpunpin I'm a Technician with Head Protection, Safety Glasses and Hearing Protection.



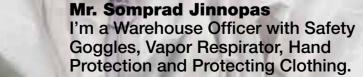




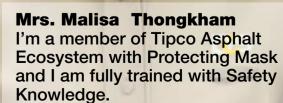
Mr. Ittipon Temsangsai

I'm a QC officer with Safety

Goggles and Vapor Respirator.



facilities.







ABOUT THIS REPORT | 102-46 | Clause 7.2 |



developing this sustainability report for our stakeholders to *gain* better understanding on our sustainable development principle and our journey toward achieving corporate sustainability goals.

Scope

This annual sustainability report outlines Tipco Asphalt Group's sustainability strategies, initiatives and performances during the calendar year 2019. It is aimed for stakeholders who want to understand our commitment and approach to sustainability. Unless otherwise stated, the information and data cover all main businesses, production and distribution of asphalt activities and plants in Thailand. I 102-50 I 102-52 I

Report contents and significant changes

The report focuses on 18 material issues (see page. 86 for details), which are aligned with our business objectives. Through 2018 materiality assessment exercise, these issues were identified with consideration of sustainability context while these materiality concerns were also reviewed and prioritized. The issues remain unchanged in 2019 report due to their high relevancy to Tipco Asphalt Group and stakeholders (see page. 74). We grouped 18 material issues into 12 material topics with corresponding impacts, risks, goals, and initiatives. In response to our stakeholders' expectations and their better understanding of our sustainable development conducts, we disclose data and information from previous years. We also include examples of actions/initiatives implemented at Tipco Asphalt Group as well as quotes from stakeholders, enabling them to express their views on our sustainability performance. I 102-46 I 102-49 I

Global Reporting Initiative (GRI)

This report has been prepared in accordance with the GRI Standards: Core option. Throughout the report, we use labels to disclose GRI Standards. We list all references to GRI Standards and the corresponding page numbers in the GRI Content Index on page 108 and page 393.

For the GRI Content Index Service, GRI Services reviewed that the GRI content index is clearly presented while the references for all disclosures included fully align with corresponding body section of the report. I 102-54 I

International Organization for Standardization (ISO 26000 : 2010)

Tipco Asphalt Group applied ISO 26000:2010 as guideline for corporate integrating social responsibility into the organization since 2012 and was assessed by external evaluation; MASCI. We exhibited linkages of the relationship among ISO 26000, GRI and UN SDGs on page 108.

Supporting the UN Sustainable Development Goals (SDGs)

Tipco Asphalt Group supports the United Nations Sustainable Development Goals (SDGs). Our contribution to 10 of the 17 SDGs is the highlighted throughout the report, including indications to measure our performance with respect to these goals

Feedback

We appreciate all feedbacks and suggestions from all our stakeholders upon development of this SD Report. All your comments will be used to further improve our future SD Reports. Please provide your comments/ feedbacks to us via email at

sustainability@tipcoasphaltcom

or by scanning QR Code as below:



or write to us at our head Office:

I 102-3 I 102-53 I

Corporate Sustainable Development
Tipco Asphalt Public Company Limited
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Phayathai District, Bangkok 10400,
Thailand

Tel.: +662 273 6000 Fax.: +662 271 3363

The most important thing about reporting isn't frameworks or scorecards – it's people. Effective reporting engages, informs and motivates people to build better companies, better economies and a better world

- Wesley Gee -

www.tipcoasphalt.com

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2018, WE INTRODUCED OUR KEY CSR/SD PARTNERS

















In 2019, WE ARE PROUD TO INTRODUCE OUR INNOVATIVE IDEAS, SUPPORTING OUR OPERATION PROCESSES AND OUR SD/CSV/CSR INITIATIVES. WE ALSO RECEIVED GREAT SUPPORTS AND COLLABORATIONS FROM OUR KEY PARTNERS AND COLLABORATIONS FROM OUR EMPLOYEES, COMMUNITIES TO NAME A FEW.

MOREOVER, WE HAVE NEW PARTNERS WHO SHARE THEIR EXPERIENCES ON THE **ENVIRONMENTAL CARES** INCLUDING PAPER-X FROM SCG, won from Thai Plastic Bags Industries. CARE THE BEAR FROM SET. AND CARE THE WHALE TO BE THE COACHES FOR OUR "SAVE THE WORLD" SUSTAINABILITY INITIATIVES.









On the right side, are the symbols that we put in our initiatives and activities to communicate that we strive for making what we believe to happen. Please go through our 2019 sustainability journey and feedback us with your thoughts, then we can improve our works to make this world







"a Happy Place to Live".



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TIPCO ASPHALT strive for Sustainability

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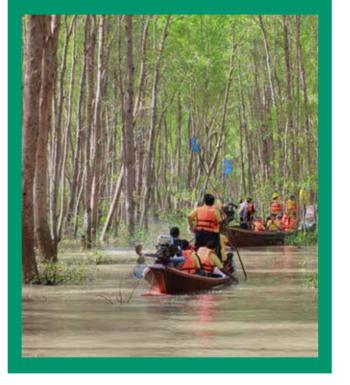
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good citizen

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We strive for promoting 356 ecosystem of well-being at work & work-Life balance



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Prasit Supsakorn (Tipco Group Founder) Since 1979



Name: Tipco Asphalt Public Company Limited

Symbol: TASCO _____ I 102-1

Established: 1979

Business: Production and distribution of asphalt

products for road construction and repairing of traffic surface, airport runway surface in Thailand and the Asia

Pacific region | 102-21

ID: 0107535000044

Address: 25/F, Tipco Tower 1, 118/1 Rama 6,

Phayathai, Bangkok 10400 THAILAND

102-3 I

Top Mr. Chaiwat Srivalwat - CEO

Management:

Registered 1,576,763,070 Baht

Capital:

Employees: 871 persons in Thailand

803 persons in Overseas Subsidiaries

1,674 persons for the group

ategory: Property and Construction

Website: www.tipcoasphalt.com

Tipco Tower 1. (on the left), a 34 storey Grade A office building jointly designed by "Skidmore, Owings, Merill LLP, SOM" and A49 that was completed in 1998. It remains as one of Thailand's premier office tower landmark.

Tipco Tower 2. (on the right), a 21 storey Grade A sister office tower 2 to Tipco Tower 1, designed by "Palmer & Turner Thailand Limited". Completed in Q2 2020 and welcomed it. First tenant in June 2020.



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MESSAGES FROM THE CORPORATE GOVERNANCE COMMITTEE | 102-14 |



establishing guidance and execution of corporate sustainability management practices at Tipco Asphalt Group.

We are living in the time when we encounter a multitude of several challenges including drastic climate shift, food and water shortages driven by population increases, rapid resource depletion and energy sustainability, public safety and health concerns, etc. In order to ensure the long-term sustainability of human life on Earth, solutions to these global challenges are urgently needed while companies today are expected to play such a crucial role upon their commitment to the public interest and contributing broadly to society as well as in environmental protection. There has never been a better time to deliver on that commitment.

Since our establishment in 1976, TIPCO Asphalt Group has remained dedicated to our fundamental corporate principle of contributing to society and the environment by engaging in business management designed to benefit all stakeholders, including employees and their families, customers, business partners, local communities, authorities and shareholders.

We see TIPCO Asphalt Group as the leading corporations in Thailand that help solving global issues addressed by the Sustainable Development Goals (SDGs) adopted at the United Nations. Our corporate sustainability principles makes our commitment explicit: "Innovative Solutions for Sustainable Living of all Societies." At TIPCO Asphalt Group, we are living up to this mission by delivering innovative technologies and integrated asphalt solutions that help cope with challenges the world faces when it comes to balancing development and sustainability.

Since 2010 when we formulated our first 5-year long-term strategic plan; namely, Vision 2015, sustainable

development has been an important component to our business mission, with the key focus on society and environmental preservation through various CSR activities. Our current corporate strategy Vision 2025, which we will have in place in 2020, fully integrates the concept of sustainability management into corporate Vision 2025, with great emphasis upon corporate governance and innovation while identifying key SD challenges and setting specific targets for ourselves to help healing the planet.

With creating shared value (CSV) principles TIPCO Asphalt Group implemented, our sustainability commitment is crystallized into 3 areas of long-term SD strategic initiatives focusing on innovation leader, eco-efficiency operations and safety awareness. These initiatives have been executed and progress monitored by top management and Board members.

This Sustainability Development Report presents TIPCO Asphalt Group's great efforts on our SD initiatives and results for the year 2019 and is designed for all of our stakeholders. We hereby would like to invite you to get better acquainted with our strong dedication and commitment on sustainability development through the pages of this report.

Thank you very much.

Mr. Phirasilp Subhapholsiri

Chairman of Corporate Governance Committee



3) Mr.Phirasilp Subhapholsiri Chairman of CG Committee

CG Committee

1) Mr.Jacques Marechalm 4) Mr.Chaiwat Srivalwat 2) Mrs.Anne-Marie Machet

> Our current corporate strategy Vision 2025 ... fully integrates the concept of sustainability into corporate Vision 2025, with great emphasis upon corporate governance and innovation while identifying key SD challenges and setting specific targets for ourselves to help healing the planet.

MESSAGE FROM THE CHIEF EXECUTIVE OFFICER (CEO) 1 102-14 I



STRIVE

instilling sustainable principles into the culture of the Tipco Asphalt Group

At the Tipco Asphalt Group, sustainability is not viewed as the responsibility of any single individual or business unit. We take the approach of embedding sustainability into our culture, where every single employee takes ownership of sustainability in carrying out every aspect of our business. We do this while considering economic, social and environmental needs of all our stakeholders.

Our sustainability initiatives are underpinned by good corporate governance; where we consciously integrate key risks concerning our stakeholders into our risk management processes. Consequently, we are able to conduct our business in a socially responsible manner for the benefit of all our stakeholders.

Our present sustainable development strategies are built around three key initiatives. Namely, we strive to be an innovation leader, achieve eco-efficiency (that is, efficiency in ecological and economic matters), and safety awareness. We support these initiatives by integrating them into our corporate strategies; as well as setting and monitoring indicators of our performance in the implementation of these strategies.

In terms of public road safety awareness, we aim to help reduce road accidents for the safety of the general public. We support this initiative by utilising our expertise in developing asphalt products as well as road surface repair standards. By doing this, we contribute to improving road

safety for society. This is an initiative that encompasses the national level, where we also collaborate with government authorities such as the Department of Rural Roads.

As our sustainability measures continue to mature, we will continue to instil the underlying principles of sustainability into the culture of our operations in Thailand as well as our foreign subsidiaries.

Good corporate governance and proactive risk management underpins our sustainability initiatives. This allows us to conduct our business in a socially responsible manner for the benefit of all our stakeholders. We take sustainability seriously. I am confident that our Group will be well-positioned to be a leader in the field of sustainability; as we continue to be a socially responsible corporate citizen in a rapidly changing world.

Chaiwat Srivalwat Chief Executive Officer (Appointed: 13 August 2019) "

I am confident that our Group will be well-positioned to be a leader in the field of sustainability; as we continue to be a socially responsible corporate citizen in a rapidly changing world.



Scan here for CEO & Sustainability VDO 2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 26 |

WE ARE TIPCO ASPHALT GROUP 1 102-2 | Clause 7.2 |

We strive for **delivering the best business performance** enhancing our partners superior performances.

STRAIGHT-RUN NAPHTHENIC ASPHALT REFINERY:

Located on the East coast of the Malaysian Peninsula. Kemaman Bitumen Company is the only asphalt-focused refinery in South East Asia. We produce over 20 grades of asphalt and have laboratory facilities capable of conducting international standard tests for all asphalt and petroleum products of the refinery.

DEDICATED DOMESTIC ASPHALT FLEETS & TECHNICAL SERVICE: We own and operate over 240 asphalt trucks in Thailand & Asian countries, which enables us to service with guaranteeing delivery and self-handling of quality products from plants to our customer sites. This is one of the company's many strengths. Our Technical Support Team, unique to Tipco Asphalt, is to serve our customers by providing professional and advisory assistance services on road construction and maintenance

INTERNATIONAL STANDARDS: We offer a variety of asphalt products with high quality, ranging from conventional grade to premium grades for road, highways and airport runway construction, pavement, repair and maintenance in Thailand and Asia-Pacific region.

applications, on-site, wherever they are needed.

OCEAN-GOING ASPHALT VESSEL FLEET: We own, manage and operate state-of-the-art ocean-going asphalt tanker fleet with a total 43,000 DWT, allowing us to safely load and discharge asphalt at our customers' terminals worldwide.

ROAD CONSTRUCTION: Our road construction companies are well-recognized in Thailand as well as the Asia Pacific region with dedicated technical resources to serve all types of road pavement requirements, both domestically and internationally.

Asphalt Refinery

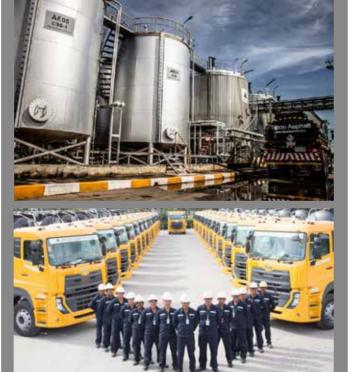




PRODUCTION

The Kemaman Asphalt refinery is in Malaysia. The facility was established since 2007. It is the only naphthenic-based asphalt dedicated refinery in Asia, with the refining capacity of 30,000 barrels per day, or 1.2 million tons asphalt production capacity.

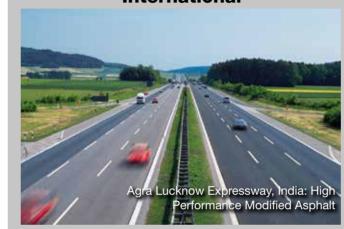
Asphalt Business - Thailand -



SUPPLY & TRANSPORTION

As the leading asphalt company in Thailand with 40 years of experience, Tipco Asphalt provides excellent asphalt delivery services. The Group operates a fleet of 58,000 tons asphalt tankers, and more than 240 trucks. We also further extend our delivery services by collaborating with the network of third-party local transportation partners.

Asphalt Business - International -





INTERNATIONAL EXPANSION

Our international business encompasses footprints across foreign subsidiaries in China, Cambodia, Vietnam, Indonesia, including JVs in Singapore, Lao, Philippines, East Malaysia and a representative office in Myanmar.

We also conduct asphalt import-export business across 20 destination countries.

The overall international business contributes to two million tons per year.

Marine Group





VESSEL FLEET

We act as owners, managers, and operators of quality tonnage which includes not only our own state-of-the-art, ocean-going asphalt tanker fleet but also charterer of external quality tonnage. Our focus is on safe, sustainable, and environmentally-friendly operations including optimization of fuel consumption and alternative fuels with a long-term goal of decarbonization. We take pride in conducting our operations in an efficient manner and always in line with best industry practices.

Construction Business





ROAD CONSTRUCTION

Our road construction business is conducted through two of our sister companies, which are Special class contractors capable of accommodating any government infrastructure development and maintenance projects.

Our unique expertise is on asphalt pavement specialist. We are one of the very few players that can fulfill the requirements on special projects: for instance, airport runway, motorsports racing circuit.

2020

FROM 1979 TILL TODAY

The 40 years of Journey



Constructed Thailand's first modernized Asphalt Emulsion Plant at Lad Krabang Industrial Estate

with production capacity of 60,000 tons of asphalt emulsion per year



Listed on the Stock Exchange of

Thailand

First bulk import AC from Singapore which was the starting Surat Thani plant point of distribution and trading

Nakhon Ratchasima and Rayong plant (Partner w/Colas)

business in the international market

Phitsanulok plant

Formed a three-party JV with Hindustan Petroleum 1999 and Colas in India

Tipco Maritime

Company Limited

China

Phrapradaeng terminal

Tipco Tower

(TAC)

Langfang Plant the first modified asphalt plant in

Tipco Asphalt Cambodia

Colas became strategic shareholder and partner

2001

Zhenijang and Xinhui plants in China

2008

Asphalt Refinery Kemaman Bitumen Company



2000

Asia Bitumen Trading Pte. Ltd. (ABT) was established as a joint venture between South Korea SK Energy and Tipco Asphalt to synergize on each other's logistic

become Asia's no. 1 asphalt trader

and marketing capabilities to



Asphalt Distribution Co., Ltd. (ADCO)

The group expanded into the retail asphalt trade in Vietnam, integrating its 4 asphalt terminals with total storage capacity 20,000 tons and modified asphalt and asphalt emulsion production facilities

PT Asphalt Bangun Sarana (ABS)

We have expanded into Indonesia, integrating its 7 asphalt terminals with total storage capacity 35,000 tons and modified asphalt and asphalt emulsion production facilities



2017

at Kuching in the State of Sarawak, East Vientiane



Borneo Asphalt Sdn Bhd (BA) has Tipco Asphalt Lao. Co., Ltd.

The 40 years of Sustainability Practice

commenced construction of a coastal To leverage capabilities in Laos, the group and Seneoudom Co., Ltd entered into a joint asphalt terminal and distribution facility venture to construct an asphalt emulsion plant and to develop a distribution network in

The Late 70s - 80s

1977

The beginning of journey

Under the guidance of late Chairman, Mr. Prasit Supsakorn, Tipco Asphalt aspired to be a responsible member of society by introducing and promoting the use of asphalt emulsion for road construction and maintenance in Thailand. Asphalt Emulsion is a type of asphalt that is more environmental friendly products that than conventional asphalts. As a result of the oil crisis in late 70's, He decided to move away from retail fuel station business into asphalt emulsion product and distribution business.

The 1990s

1990-1999

Leading in Thailand and Growing overseas

- Getting into asphalt trading and started international business
- Importing and exporting asphalt
- (1992) Tipco Asphalt listed on the Stock Exchange of Thailand (SET) as TASCO to support national manufacturing expansion and eventually, expanded its production and distribution network into the 5 regions of Thailand to support its growth, whilst established an international foothold
- Becoming dominant leading asphalt in Thailand by introducing premium grade asphalt products for various new road maintenance
- (1999) Establishing Tipco Asphalt's offshore asphalt production & distribution facilities
- China promoting investment in its logistic network
- Cambodia welcoming new innovation to national road infrastructures

The 2000s

2000 - 2009

Strengthening Capabilities and Networks

- Going upstream: The Tipco Asphalt and Colas partnership redefined the asphalt market landscape in Asia-Pacific with a dedicated asphalt refinery (KBC)
- Expansion as international business Strengthening and expansion on logistics and capabilities and networks: the Group owned ocean-going asphalt tanker fleet whilst established an international foothold

The 2010s

2010 - 2019 Inspiring the Future

40 years in the making, Tipco Asphalt Group today is a fully integrated asphalt products producer and distributor. We are recognized as an innovative solutions partner that will

- continue to grow with our domestic and international customers towards new frontiers. 2010: 1.0 million tons of total sale volumes
- · 2015: 2.3 million tons of total sale volumes

And Beyond

2020

- The Group revises long-term strategic plan: Vision 2025 - Mission: To be a globally preferred integrated asphalt
- solutions partner - Vision 2025: To provide asphalt solutions in a
- sustainable manner led by an innovative culture • Sustainability Development is key for the future
- Innovative Solutions Partner

OUR VALUE CHAIN | 102-9 | Clause 7.2 |



Operating Across Fully Integrated Asphalt Value Chain





WE **PROCURE**

Crude oil that yields the highest output of Naphthenic asphalt

Up to 30,000 barrels of crude oil per day resulting in 1.2 million tons of asphalt produced annually



products. adhering to the most stringent quality control measures to meet customer. local authorities and environmental

PRODUCE

TRUCKS

Largest asphalt truck fleet in Thailand with knowledge and expertise on safe handling and care of asphalt products

WE DISTRIBUTE

Premium asphalt requirements

Product and services coverage across 5 continents

WE **PROVIDE**



international markets along with providing technical service teams, equipped with product and application know-how to our customers for

on-site assistances

WE

SERVICE

Domestic and

Road pavement techniques and expertise, entrusted and certified by government agencies. to build road networks vital to infrastructure development and arowth

WE **APPLY**

products which meet not only international standards but also local environmental requirements. As for midstream business operations, our distribution logistic services ensure our products being delivered to our customers, with greatest quality and in timely manner across all markets. We provide asphalt logistic solutions with our fleet of asphalt vessels including inland truck logistic services fully equipped with technology for real-time monitoring and tracking of asphalt merchandise.

> Each operation; i.e., from upstream crude sourcing down to road pavement services, is conducted under strict controls and regular monitoring to ensure top quality services and products delivery to customers.

province. Thailand.

We provide comprehensive solutions to accommodate

Our value chain designs fully integrates all business operations; i.e., from

upstream operations where we procure crude oils for further processing at our

unique, asphalt-oriented refinery facility in Asia Pacific. In addition to asphalt cement

product lineups, our refinery also can produce other high-quality petroleum related

Our downstream operations focus on asphalt road construction and surface payement services. Our team of highly skilled and experienced staff are entrusted and certified

by government agencies for our works. In addition, our technical service team can support customers on technical advice to ensure best use of our products on road surface application. In addition to normal expressway and roads, we utilize our expertise on special projects that require unique asphalt specifications and

construction techniques. Through the Thai Slurry Seal Company Limited; a subsidiary

of Tipco Asphalt, we are the only company in this region that could commission the

world-class, Formula One standard, Chang International Circuit project in Buriram

customer's business needs, with focus on long term sustainable business journey together with them.

VESSELS

Specialized ocean going asphalt vessel fleet that is qualified to call on all ports/terminals to conduct asphalt loading and discharging operations

DOWNSTREAM

UPSTREAM

MIDSTREAM

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WHERE WE OPERATE | 102-4 | Clause 7.2 |



becoming business solution partners to our customers across all markets

Thailand Market | 102-6 |

In 2019, total demands for all asphalt products in Thailand was projected to reach 1.28 million tons. Of this, 0.91 million tons were demands for asphalt cement, while the remaining 0.37 million tons were asphalt emulsion and other premium products, which include cutback asphalt, polymer-modified asphalt, and natural latex modified asphalt cement. Domestic asphalt demands rose 11% from 2018, such demands increase was mainly due to government budget increase in 2019. Due to delay in the government budget approval, 2020's budget spending will be announced in the first guarter of 2020 (as opposed to October 2019 under normal schedule).

As the market leader for asphalt products in Thailand, the Company has successfully earned customer confidence and trusts based on excellent-quality products, superior-customer services, prompt deliveries and continuous efforts on product innovations. In order to continue improving service quality, the Company has conducted in-depth interviews with our customers to gain their feedbacks on our products and services. The interviews confirmed the Company's position as the leader for asphalt products in Thailand for both products and services. To ensure developments to become word-class company with focus on client centric experience, 3 key areas of further developments were identified; i.e., sales as business partner, technical knowledge management, and a digital order-fulfillment platform.

The Company was able to significantly expand the market for latex-based product lineups. These cutting-edge, latex-based products were our successful innovation that have now become the preferred construction and maintenance technique advocated by the Department of Highways, the Department of Rural Roads and the Expressway Authority of Thailand. In addition, these latex-based products are embedded with technology that promote sustainability by creating less impacts to environment and nearby community during production and road application; for instance, the Ultra Low Ammonia asphalt (ULA)

Thanks to our strategic locations of manufacturing facilities nationwide, we can provide timely delivery services to our customers through our own 240 road tanker trucks fleets plus additional 100 tanker trucks provided by our exclusive logistic partners. 4 new outsourced truck companies have joined the Samutprakarn and Surat Thani distribution teams for greater fleet reliability and cost reduction. With our commitments to road safety and truck utilization, Thailand logistics and distribution operates under centralized - control function which monitor all truck on 24/6 basis. Our distribution performs well and was awarded with highly accredited Certificate of Road Traffic Safety ISO 39001.

Our International Retail Market | 102-61

The demand for asphalt in China's retail sector was lower than expected in 2019 due to on-going trade wars with the United States of America, coupled with depreciation of the Yuan which generated impacts onto both the overall economy and the market environment. Nevertheless, our Chinese subsidiaries have managed to deliver a good financial performance, thanks to their flexibility and resourcefulness, which allowed them to adapt to a fast-changing market environment.

As for Indonesia, domestic asphalt market increased by 10% in 2019, Specifically, the Sumatra region recorded a growth of 16% thanks to the Tran Sumatra projects. The Group's Indonesian subsidiary, PT Asphalt Bangun Sarana (ABS), benefited from this growth mostly from its strategic location in Palembang, which helped it reach record sales volume in 2019. ABS also successfully completed the Jakarta airport runway renovation project. It is currently completing a number of key international airports and highways projects across Java.

Regarding the Vietnam retail market, during the first half of 2019 the demands encountered a contraction of 8% due to volatile asphalt pricing, coupled with a policy change implemented by the Ministry of Transport. The Company's subsidiary, Asphalt Distribution Company Limited (ADCo), managed to maintain its number market leader position, while achieving its second highest sales volume ever in 2019. ADCo's long term strategic objective is to promote high-performance pavement solutions to both highways and airport segments have been rewarded: ADCo has been selected as supplier for new Formula 1 racetrack construction in Hanoi, a prestigious project.

Cambodia's asphalt market slowed down in 2019, mainly due to some main projects postponement in line with delays in ministry approval and funds release. Despite more intense competitions from border trade, the Group's Cambodia subsidiary, Tipco Asphalt (Cambodia) Company Limited (TAC), maintained its market leadership position by supplying premium-grade asphalt products to Sihanoukville international airport and national road projects.

The Group's Joint Venture company in the Philippines, Phoenix Asphalt Philippines Inc., completed its terminal construction in 2019 on time while commencing commercial operations earlier than the schedule.



TIPCO ASPHALT GROUP BY THE NUMBERS I 102-7 I

1,200,000 Tons of asphalt

produced annually

Tons of asphalt

300,550

12.700

DWT total asphalt storage capacity vessel fleet capacity

43,000

1.700

36

30.000

Barrels per day refining capacity

DWT largest asphalt vessel fleet capacity

Employees

300

asphalt Trucks

asphalt emulsion &polymer modified asphalt depot asphalt plants

45

20

Port jetties

Our International Wholesales Market | 102-6 |

Favorable market conditions of 2019 helped bolster the Company's International Wholesale department volumes by a noteworthy 30%. The market kept a steady momentum throughout the year, and we seized this opportunity to increase our sales.

Towards the end of the year, the usual winter period slowdown coupled with uncertainties related to the expected impacts of the IMO 2020 regulation, led some importers to take a more conservative approach in their purchase commitments.

Key markets sales in 2019 was buoyant: thanks to strengthening ties with some key importers. China sales increased sharply as compared with 2018. In Indonesia, sales jumped with the winning of a key tender. In Vietnam, while competition remained particularly aggressive during first half of the year, we were ultimately able to strengthen our positions, and even saw some growth. On the other hand, imports to Australia and New Zealand lessened due to a drop in demands.

While moving products to the West was challenging for the third consecutive year, the Company's sales to other markets remained stable with some exports to the Middle East and South Asia, Nevertheless, sales to the Philippines have increased and shown good prospects.

"Overall, our markets performed very well in 2019. Thanks to our network and to our full supply chain, we strengthened all our geographical positions across Asia.

Our teams endeavored to provide best and timely services to our esteemed customers.

2020 will see the extension of our permanent footprints across the region while the Philippines and Laos will commence operations.

We shall therefore be even closer to our customers to provide them the solutions they require."



Hugues de Champs DCEO International Business

Representative office



1. THAILAND

Tipco Asphalt Public Company Limited FST 1979

Ravcol Asphalt Co., Ltd.

EST 1985 (99.99% Ownership)

Thai Bitumen Co., Ltd.

EST 1995 (99.99% Ownership)

Thailand's foremost expert in asphalt manufacturing and application techniques, ensuring durability and longevity of road utilizations

- 2 port jetties
- 5 asphalt depots
- 8 asphalt emulsion and polymer modified asphalt plants
- 58,200 MT asphalt storage capacity



2. CAMBODIA

Tipco Asphalt (Cambodia) Co., Ltd.

EST 1999 (100% Ownership)

Cambodia's leading asphalt manufacturer and distributor, introducing mixing and paving techniques to support the country's logistic infrastructure development

- 1 port jetty
- 2 asphalt depots
- 2 asphalt emulsion and polymer modified asphalt plants
- 3,700 MT asphalt storage capacity





Langfang Tongtai Road Material Co., Ltd.

EST 1998 (51% Ownership)

Zhenijang Tipco Asphalt Co., Ltd. EST 2000 (51% Ownership)

Tipco Asphalt (Xinhui) Co., Ltd.

EST 2001 (100% Ownership)

Operating in 3 regions (North, Central and South) requires specialized product design and application techniques suitable for different terrains and climates

- 1 port jetty
- 3 asphalt depots
- 3 polymer modified asphalt plants
- 42,000 MT asphalt storage capacity



6. LAOS

Tipco Asphalt Lao Co., Ltd.

EST 2017 (75% Ownership)

Joint Venture with Seneoudom, a long time commercial partner of Tipco Asphalt in Laos, to build the country's first asphalt manufacturing plant for domestic distribution

- 1 asphalt emulsion plant
- 1 asphalt depot
- 650 MT asphalt storage capacity



9. PHILIPPINES

Phoenix Asphalt Philippines, Inc.

EST 2018 (40% Ownership)

Joint Venture with Phoenix Petroleum and Phil Asphalt of Philippines for the supply of asphalt, introduction and application of premium asphalt products that suits the environmental conditions and terrain of the country

- 1 port jetty
- 1 asphalt depot
- 2 asphalt emulsion and polymer modified asphalt plants
- 6,000 MT asphalt storage capacity



4. INDIA

Hindustan Colas Private Limited (HINCOL)

EST 1996 (20% Ownership)

For over 2 decades, Tipco Asphalt, Colas and Hindustan Petroleum through its Joint-Venture, Hincol, has established itself as the foremost asphalt manufacturing expert in India, with facilities covering the whole subcontinent coastline

- 2 port ietties
- 11 asphalt depots
- 20 asphalt emulsion and polymer modified asphalt plants
- 60,000 MT asphalt storage capacity



7. MALAYSIA

Kemaman Bitumen Company Sdn. Bhd.

EST 2003 (100% Ownership)

Borneo Asphalt Sdn. Bhd.

EST 2018 (50% Ownership)

Strategically located on the east coast of the Malaysian Peninsula, Southeast Asia's only naphthenic asphalt refinery has access to deep sea ports allowing it to conduct international trade shipments

- 3 port jetties
- 2 asphalt depots
- 72,200 MT asphalt storage capacity



10. SINGAPORE

Asia Bitumen Trading Pte. Ltd.

EST 2015 (50% Ownership)

Joint Venture with SK Energy of South Korea and located in Singapore, a strategic hub to serve international trade and shipping, to pool together our resources and commercial prowess in the region for consistent supply of quality asphalt in the market



5. INDONESIA

PT Asphalt Bangun Sarana EST 2000 (99.98% Ownership)

Known for its premium asphalt products, ABS is well regarded for its knowledge of national road construction and infrastructure developments

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 35 |

- 7 port jetties
- 7 asphalt depots
- 3 asphalt emulsion and polymer modified asphalt plants
- 33,800 MT asphalt storage capacity



8. MYANMAR

Tipco Asphalt Myanmar Representative Office EST 2015

As an ASEAN market with high growth potential, Tipco Asphalt established its Representative Office to foster closer ties and introduce asphalt road construction and paving techniques for future logistic development

11. VIETNAM

Asphalt Distribution Co., Ltd. EST 1993 (100% Ownership)

As one of the largest asphalt operators in Vietnam, ADCo has the distribution and supply capabilities to serve the country's extensive national road network and future arowth

- 4 port ietties
- 4 asphalt depots
- 6 asphalt emulsion and polymer modified asphalt plants
- 24,000 MT asphalt storage capacity

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AWARDS AND RECOGNITION, WE ACHIEVED IN 2019 | 102-12 | 102-13 | Clause 7.6.1 |



Green Industry

Tipco Asphalt Public Company Limited won Green Industry Award: Level 3 (Green system) pertaining to outstanding environmental management system, regular monitoring, reviews and developments. The Awards were provided by the Ministry of Industry to 4 of Tipco's plants (Phrapradaeng, Phitsanulok, Suratthani and Nakhon Ratchasima)



Sustainability Disclosure Awards

Tipco Asphalt PCL was awarded Sustainability Disclosure Award 2019 by Thaipat Institute owing to the public disclosure of the Company's performances with transparency through its Sustainability Report.





CSR-DIW Continuous Award

The company has won 5 CSR-DIW awards from the Department of Industrial Works, the Ministry of Industry for 12 consecutive years.

- Phrapradaeng
- Phitsanulok
- Nakhon Ratchasima
- Rayong
- Suratthani



Thailand Sustainability Investment (THSI 2019)

For two consecutive years, Tipco Asphalt Public Company Limited was nominated to be in the SET's Thailand Sustainability Investment (THSI) thus reflecting our strong commitment to sustainable growth. Such recognition was due to our comprehensive risk management, innovation driven competitiveness, ethical business practices, as well as social and environmental responsibility in line with sustainable development guidelines.



Certificate of Membership of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC)





Tipco Asphalt Public Company Limited was certified as membership of Thailand's Private Sector Collective Action Coalition Against Corruption from the Thai Institute of Directors (IOD). Achieved the Excellence level (5 Stars) of Corporate Governance Report (CGR)

Safety and Occupational Health and Environment at Workplace Category Award

In 2019, Tipco Asphalt Public Company Limited won 4 outstanding Establishment Award, Safety and Occupational Health and environment at workplace category, from Department of Labor Protection and Welfare, the Ministry of Labor.

- Rayong plant won this Awards for 13 consecutive years, Platinum Level.
- Suratthani plant won this Awards for 13 consecutive years, Diamond Level.
- Nakhon Ratchasima and Phitsanulok plants won this Awards for 2 consecutive years, Golden Level.





Zero Accident Campaign 2019

Suratthanee plant was certified with 897,656 hour of "Zero accident campaign", commencing level for first year awarded by the Ministry of Labour.2019





has won the SET Sustainability Awards for the first year. The reward of Rising Star, among SET-listed companies with market capitalization between 30 billion – 100 billion baht category). The award manifests Tinco Asphalt's (TASCO) commitment

In 2019, Tipco Asphalt Public Company Limited

SET Sustainability Excellence Award

30 billion – 100 billion baht category). The award manifests Tipco Asphalt's (TASCO) commitment and excellence in corporate governance and sustainable development. These sustainability awards reiterate community's recognition on TASCO's prominent standard of ESG practices.



RISING STAR

Sustainability Excellence

Factory around Thailand Join Hands Against

DrugsNakhon Ratchasima

plant also won
"Factory around
Thailand Join
Hands Against
Drugs" award,
hosted by
Department of
Industrial Works,
the Ministry of

Industry.



Standard for Drugs Free Workplace Award

Our Suratthanee plant was certified with Standard on Prevention and Solution to Drugs Problems in an Establishment Certificate, to reflect our capability

upon prevention and solution to drugs Problems in an establishment in accordance with Standard on Prevention and Solution to Drugs Problems in an Establishment from Suratthanee plant.



OUR STANDARDS AND QUALITY | 1102-12 | 102-13 | Clause 7.6.1 |



raising the standards and quality Beyond regulations

The Importance of Quality Standards

We would like to ensure our products, services and processes not only meet the minimum requirements of quality standards but we lift for the high standards in the industry. Our quality is about safety, delivering on a promise and meeting the very basics of customer expectations.

But, by meeting quality standards, companies often enjoy full benefits and reduce losses. Our exceeding quality standards stand out in the industry and further our potential for profit and consumer loyalty. Therein rests the benefit of quality standards.

Group	Topic / Issue	Membership of Associations	Certify body	GRI								Details	Performance
Стоир	Topic / issue	l 102-13 l		Std.*	9001	14001	45001	39001	8001	17025	26000	Details	2019
INNOVATION LEADER	Foster Innovation Culture (Products & Services)	National Innovation Agency (NIA) Thai Industrial Standards Institute (TIS)	MASCI / TISI									Standard of asphalt products	Certified
ECO-EFFICIENCY OPERATIONS	Save The World / Towards the Circular Economy (Environment)	Thailand Greenhouse Gas Management Organization (Public Organization :TGO)	MASCI	•		•					•		Certified
SAFETY AWARENESS	Road Traffic safety	Hazardous Substances Logistics Association (HASLA)	ClassNK / DOH										Certified
	Safety is in Tipco Asphalt Group's DNA		MASCI										Certified
STRONG CORPORATE	Corporate Governance Report (CGR)	The Institutes of Director (IOD)	IOD										
GOVERNANCE	Annual General Meeting Checklist (AGM)	Thai Investors Association (TIA)	TIA										Level 4
TRANSPARENCY	Anti-Corruption	Collective Action Coalition Against Corruption (CAC)	CAC										98%
	Most Trusted products & Services	- Thai Asphalt Laboratories correlation program - Proficiency Testing Program	MASCI / TISI									Testing and Calibration Laboratories	Certified
	Revenue Code / Corporate Law / Tax Law		MASCI										Certified
	Valuable Trusted Partner (Supplier)		MASCI										Certified
	Good Citizen (Community Involvement)		MASCI										Certified
VALUE FOR THE FUTURE	Human Capital Management	Department of Labour Protection and Welfare	MASCI										Certified

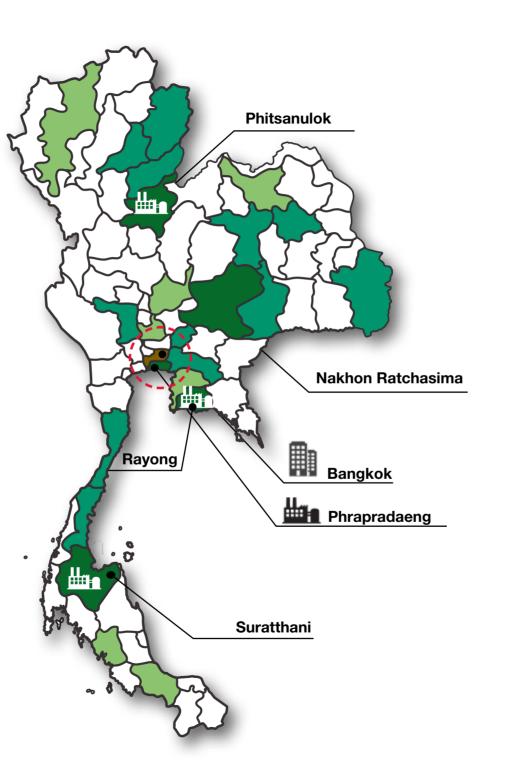
SUMMARY OF KEY CSR/CSV PROJECTS FOR SUSTAINABLE DEVELOPMENT IN THAILAND

The company strives for successful implementation of corporate social responsibility activities by allocating a budget of 1.0% of average annual net profits over 3 preceding years to fund these projects. Regarding community development, Tipco Asphalt Group employs 3 important CSR strategies; namely, **Innovation leads to the Future, Low Environmental Impact and Safety First**. We arrange "**Community dialogue with Tipco Asphalt Citizens**" to understand their needs and expectations so we can create mutual benefits while enhancing the life quality of the community We aim to build a good relationship and earn acceptance from the community nearby our plants, resulting in 'license to operate' where we can continue our operations without interruption.

There are several areas where we implement CSR/CSV initiatives. Despite that most activities are conducted by our employees who volunteer themselves to the project conduct, our affiliated companies Including customers and partners also take part in these activities. We plan to further expand our CSR/CSV initiatives to across our overseas subsidiaries in the near future

LOCATION & TYPE OF ENGAGEMENT WHERE WE HAVE CSR/CSV SIGNATURE PROJECTS

BANGKOK, Head Office
LOCATIONS WHERE WE OPERATE (PLANTS) - Phrapradaeng - Phisanulok - Rayong - Suratthani - Nakhon Ratchasima
LOCATIONS WHERE WE CONDUCT CSR/CSR PROJECTS TOGETHER WITH AFFILIATED COMPANIES, CUSTOMERS AND LOCAL COMMUNITIES
LOCATIONS WHERE WE CONDUCT CSR/CSR PROJECTS TOGETHER with BUSINESS SUSTAINABILITY PARTNERS / COMMUNITIES



CSR/CSV SIGNATURE PROJECTS

Patching Pothole "Road Safety for All" campaign to enhance road safety for all road users, including various assets as well. The Group launches this initiative by repairing road surface/ potholes that may cause road accidents.	
Road Safety for Kids Another "Road Safety for All" campaign aiming to provide safe road use knowledge to the youth, according to traffic laws while enhancing road safety experience when traveling with adults or on their owns.	
CPR Training "Road Safety for All" campaign to provide basic life-saving training, including information on how to use defibrillators. The project was conducted for the benefit of the general public using the standards recommended by the Life Saving Standards Committee & The Heart Association of Thailand.	
SMART People "Social Collaboration" campaign to develop skills for technicians or any local individuals who want to gain professional expertise relating to the correct application of asphalts.	
SMART Logistic "Social Collaboration" campaign to utilize modern technology for efficiency enhancement.	
Bueng Takhreng "Social Collaboration" campaign to create an ecosystem while conserving and restoring water sources. The project was designed as an integrated learning and tourism center.	
	"Road Safety for All" campaign to enhance road safety for all road users, including various assets as well. The Group launches this initiative by repairing road surface/ potholes that may cause road accidents. Road Safety for Kids Another "Road Safety for All" campaign aiming to provide safe road use knowledge to the youth, according to traffic laws while enhancing road safety experience when traveling with adults or on their owns. CPR Training "Road Safety for All" campaign to provide basic life-saving training, including information on how to use defibrillators. The project was conducted for the benefit of the general public using the standards recommended by the Life Saving Standards Committee & The Heart Association of Thailand. SMART People "Social Collaboration" campaign to develop skills for technicians or any local individuals who want to gain professional expertise relating to the correct application of asphalts. SMART Logistic "Social Collaboration" campaign to utilize modern technology for efficiency enhancement. Bueng Takhreng "Social Collaboration" campaign to create an ecosystem while conserving and restoring water sources. The project



Start the 2019 journey of TIPCO ASPHALT GROUP SUSTAINABILITY MANAGEMENT



EMBEDDING SUSTAINABILITY

During December 2019, TIPCO Asphalt Group conducted a group-wide, long-term strategic planning workshop *Vision 2025*, as a replacement for outgoing *Vision 2020* come due in 2020.

Key objective was **to review overall business directions and key strategies going forward** while taking into consideration of future trends, key risks including top issues rising from materiality analysis results.

With 'zoom-in, zoom-out' approach, Vision 2025 identified high priority areas that TIPCO Asphalt Group plan to achieve: these were crystalized into 6 strategic goals.

Sustainable development was identified as one of the key goals and greatly discussed during the workshop sessions and ultimately incorporated into the new Vision 2025 design.

Corporate Strategy Team

Our new Vision 2025 strategic plan | 102-16 |

VISION2025

OUR



TO BE A GLOBALLY PREFERRED INTEGRATED ASPHALT SOLUTIONS PARTNER

AND

O VISION 2025

TO PROVIDE ASPHALT SOLUTIONS
IN A SUSTAINABLE MANNER LED
BY AN INNOVATIVE CULTURE

TIPCO ASPHALT **CORE VALUE**



Scan here for Root of Tipco song



ESSENTIALS

ensuring that all business units are fully aligned and driven forward in the same strategic direction

"Tipco's Way" defines what we stand for and guides us to achieve our Vision 2025. The Tipco Asphalt Group accomplished great business successes and growth during the past few years mainly owing to a solid foundation and business model established by the founder.

But the most important key to our success is our loyal and dedicated staff who uphold our CORE VALUES of Teamwork. Integrity. Prudence, Commitment and Open-minded. Tipco Asphalt Group could not be where we are today if we do not incorporate these values into our business conducts.

T. I. P. C. O. Core Values help all staff to believe and be fully aligned with the Group's business directions to achieve remarkable improvements upon economic, social and environmental aspects. In addition, the Group launches innovations to ensure our organization stays up to date with modern day technological advancements while being able to fully accommodate rapidly changing global and business environments. This will support not only the Group's continual developments across all key aspects but also strong foundations that can be handed down sustainably for future generations.



TIPCO'S WAY



FAMWORK WE ARE A TIPCO **ASPHALT TEAM**

TIPCO Asphalt Team is based on trust among each team member and utilizing individual strengths to achieve team objectives.



NTEGRITY ZERO TOLERANCE TO MISCONDUCT

We must always abide by lawful activities and adhere to industry best practices.



RUDENCE WE SEE IT-THROUGH AND DO WHAT IS RIGHT

We accept risks with careful considerations and accountability of its consequences.



OMMITMENT WE KEEP OUR **WORDS**

We match the needs of our stakeholders and organization and make them as one.



UPEN-MIND **OPEN-MINDED** MAKES US AGILE AND WELCOME **NEW CHANGES**

We are approachable and willing to cultivate diverse ideas with no fear of change.

INNOVATION CULTURE for TIPCO ASPHALT

Promoting innovations across the Group not only helps enhancing work efficiency but also creates value-added while strengthening the organization. This allows the Group to stay ready for market competition environment fueled by modern technology disruptions. TIPCO Asphalt Group therefore considers reviewing the Group's Core Values by adding another key component on a mindset that encourages creativity and innovations across all staff, hence leading to desired organizational behaviors and ultimately driving corporate innovations forward, TIPCO ASPHALT Way.

EAMWORK

Mindset:

Courageous Enabler Mindset

Behavior:

Generate More & Various Ideas

The truth is that **TEAMWORK** is at the heart of great achievement - John C. Maxwell - Arlen Specter

NTEGRITY

Mindset:

An Obligation to Ourselves & Other Mindset

Behavior:

Initiate Own Ideas

There is no higher value in our society than INTEGRITY

RUDENCE

Mindset: Compliance Mindset

Behavior:

Discover Suitable & Valuable Ideas

PRUDENCE is the footprint of wisdom - Amos Bronson Alcott

OMMITMENT

Mindset:

Fail fast, move fast but need to start

Behavior:

Make Ideas Reality

The path to success requires for a **COMMITMENT** Devon Franklin



Build to Think, Stretch mindset

Behavior:

Disrupt Traditional Idea

Keep an **OPEN-MIND**; it's the only way new things can get in - Colleen Hoover

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 50 |

Let's hear from Board of Directors and Top Managements

"SAVVY SUSTAINABILITY"

Vision 2025 Workshop marks great steppingstone for our corporate strategy by explicitly incorporating sustainability development elements into our long-term strategic planning, with corresponding strategic initiatives and action plan executions.

Here are some of the testimonials from our Group's Board of Directors and top management members on our integrating SD into corporate strategy design.



Mr. Nopporn T. (Independent Director), Mr. Chainoi P. (Vice Chairman) and Mr. Chaiwat S. (CEO)



Mr. Nopporn T. (Independent Director), Mr. Somchit S. (Director), Mr. Chaiwat S. (CEO) and team of consultant experts

"...great steppingstone on sustainability management by fully integrating it into the Group's long-term corporate strategy ..."

Chainoi P.: Vice Chairman Independent Director

As the Board of Director, my responsibility is to monitor and ensure TIPCO Asphalt on business conducts and corporate governance. I am very pleased to see the Group's strong commitments on corporate sustainability initiative. The Group shows great steppingstone on sustainability management by fully integrating it into the Group's long-term corporate strategy with full detail strategic action plans to execute the sustainability development initiatives; namely, innovation, eco-efficiency and public road safety.

"I will supervise and focus more on Audit Committee's characteristics to assure more sustainable transparency to the stakeholders."

Nopporn T.: Independent Director

My role as member of the audit committee, I found the request for more transparency on which calling on companies to adopt more sustainable practices. Investors requires a proper identification and governance of ESG topics that are material to a company and its industry are essential to managing risk and executing strategy and leads to long-term increases in shareholder value.

I will supervise and focus more on Audit Committee's characteristics to assure more sustainable transparency to the stakeholders.

"...do business that both we and society can benefit together, but the society receives more benefits than we do..."

Chaiwat S.: CEO

Corporate sustainability means effective organization management, good corporate governance, consistent operational results as well as continuous organization development improvement. At the same time most, if not all, employees understand company's key objectives and directions which we all are driving our business to achieve such goals.

Asthe Late-Chairman Mr. Prasit Supsakorn once said "... we choose to do business that both we and society can benefit together but the society receives more benefits than we do ..."

"...exploring potential business opportunity within our **ecosystem**."

Koh Lai H.: CFO

As CFO of the Group, Corporate Sustainability is essential to the Group's business strategy and direction going forward. The concept allows us to see how each related stakeholders interact among one another and how we can co-benefit from these mutual relationships. It is everyone's responsibility to ensure that we fully understand the sustainability management and how we can integrate them into our businesses and long-term strategy to receives full benefits while exploring potential business opportunity within our ecosystem.

"I foresee this sustainability management concept to be soon implemented across all foreign subsidiary units ..."

Hugues C.: DCEO

I am very pleased that TIPCO Asphalt Group fully integrates corporate sustainability philosophy in our strategic plan. I foresee this sustainability management concept to be soon implemented across all foreign subsidiary units in which all employees shall take this practice alongside our business conducts.



Vision 2025 Workshop with 43 participants



Mr. Nopporn T. (Board Director), Mr. Somchit S. (Director), Mr. Chaiwat S. (CEO) and team of consultant experts

Sustainable Development is everyone's responsibility. Successful implementation must be driven from top managements who need to ensure full alignment and commitments from everyone across the Group.

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2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 53 |

WHERE WE ARE FOR SUSTAINABILITY TODAY

Now & What's Next

Since 2017, we adopted sustainable development concept in line with our long-term strategy. To understand how we measure sustainability progress, we utilized Monitor Deloitte's rating score sheet to assess and evaluate among SD team, top managements and directors on their level of Corporate Sustainability understanding. We found that management had one step ahead of the staff.

The analysis revealed that we are in the stage 1 (Follower) focusing on compliance with plan in isolation. We ultimately aim to achieve step 4. (Innovator), which we integrate SD with business strategy for creating competitive advantage and being Sustainability Driven Organization by 2025.

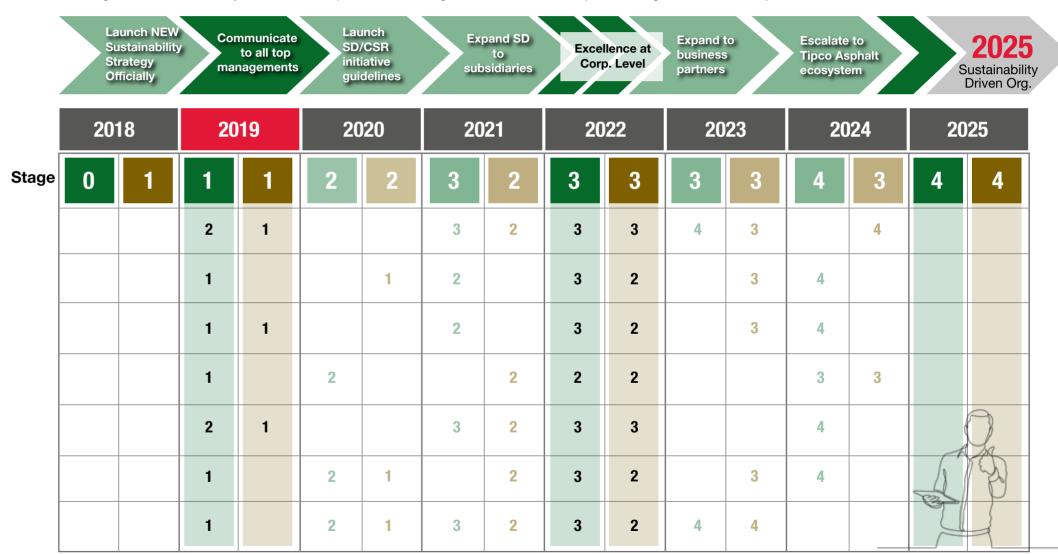
SD team, top managements and directors on their level of Corporate Sustainability understanding. We found that	Stage 1: Compliand		Pro-active risk based approach	Integrating with business strategy	Integrated strategy, shaping societal expectations Competitive advantage through sustainable business practices	
management had one step ahead of the staff.	Unders	standing	Beyond compliance	Comprehensive sustainability management		
Sustainability Assessment	Ad-hoc	Planned in Isolation	Managed with no integration	Excellence at Corp. Level	Sustainability Driven Organization	
Strategy Have a well-defined strategy and vision for sustainability	Management Employee	Management Employee	Management Employee	Management Employee	Management Employee	
Motivation Company & employees motivated to pursue sustainability as a key business driver.	•	•				
Communication Sustainability is an often talked about agenda item in the company.		•				
Technology Company used technology as an enabler for sustainability.	•	•				
Partnerships Company engaged in partnerships to contribute to a common sustainability mission.		•	•			
Operations The concept of sustainability integrated into the business operations.	•	•				
Competencies Leveraged company competencies and capabilities to develop sustainability.						

Sources: TIPCO Asphalt Group: Vision 2025 Strategy Formulation Workshop (December 2019) and assessment table & criteria by Monitor Deloitte

OUR PLAN TO MOVE TOWARDS SUSTAINABILITY STEADILY | 102-4 | Clause 7.2 |

A big transformation

We aim to achieve stage 4.- **Sustainability Driven Organization (Innovator)** to integrate strategy and meet social needs by 2025 while creating competitive advantage. This requires massive transformation of all staff regarding new mindset, understanding and how to embed sustainability into our culture. Our ultimate goals are to ensure full integration of sustainability with business operations, meeting social needs, while help minimizing environmental impact.



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2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 55 |

TIPCO ASPHALT OF TOMORROW | 102-10 | Clause 7.3.1 |



developing new set of 6 Strategic goals, with sustainable development fully integrated as part of Vision 2025

TODAY TOMORROW Recognized as the **industry leader** • 80% of TIPCO's revenue A Truly Global exemplifying global standards comes from Asia, with Local/ regional Thailand comprising **Entity** • **30%** of the total revenues 85% of the product Diversified portfolio of solutions to serve Diversified Bitumen focused portfolio is focused on needs of all customers portfolio of selling **Bitumen** primarily portfolio solutions to road contractors Primary focus is on Instill innovative culture within organization product-related R&D Innovation to improve efficiency of our Product R&D only processes and services beyond product 6 **Exceed customers' expectations** Sell high quality through anticipation of their future needs **premium** products in Client-centric **Product-centric** the market Decision making is Optimize business intelligence for driven by the top **Experience-based Datum Driven** efficient decision making management decision making Organization **experience** and insights Main focus only on CSR **Encourage innovative,** Sustainable and charitable **CSR Activity** eco-efficient and safety mindset activities Organization in a sustainable organization

SUSTAINABILITY VS. DISRUPTION

The essence of *Vision 2025* emphasizes on transforming TIPCO Asphalt Group into a well recognized global company embodying leading standards of business conduct as well as sustainable development practices.

Portfolio of products and services needs to be changed from asphalt-focused ones into well diversified portfolio of solutions to meet customers' specific demands, with service-oriented mindsets, and full consideration upon our environmental footprints across all markets.

In order to achieve such goal, innovation will serve as one of the key components for TIPCO Asphalt Group to focus and build foundation upon.

Meanwhile, the topics of sustainability management were discussed. The Group's Sustainability commitment going forward concentrating on sustainable livings for all societies through innovations, eco-efficiency operations and public safety awareness.





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Year 2019 marks our 4th year of the Vision 2020 strategy journey, with a transition toward new Vision 2025 strategic plan. For this upcoming, new strategic direction, we formulated new set of strategic goals while we ensure full communication and understanding among all units and subsidiaries.

6 Strategic Goals

Our Vision 2025 Corporate Strategic plan was formulated in late-2019 to set long-term business direction while taking into consideration all key factors and changing market environments including key risks. Under this new Mission/Vision 2025, the Group crystalized the strategic essences into 6 strategic goals as follows:

A Truly Global Entity

Recognized as the industry leader exemplifying global



standards The Group is already well

regarded as leader in asphalt business across the region. With our capability, we aim to become a truly global company in the future.

Diversified portfolio of solutions to serve needs of all customer



Diversify asphalt and petroleum related-product solutions to all customers

With our customer-centric philosophy, we offer variety of products and services lineups to meet all requirements.

Innovation beyond product Instill innovative culture within

organization while learning to utilize our expertise in new products. processes and services



While innovation on products has increasingly become highly competitive or "red ocean", there are plenty more untapped opportunities upon innovations associated with services, experience/ expertise and business models.

Client-centric

Exceed customers' expectations through anticipation of their future



This approach focuses on delivering best customer experiences through great service and/or product offerings while building relationships.

Datum Driven Organization

Maximize and utilize business intelligences for efficient decision making



The Group establish data analytics platform to optimize our information for efficient decision making and exploring potential business opportunities.

Sustainable Organization

Encourage innovative. eco-efficient and safety mindset in a sustainable organization.



All executives and employees of the Group strongly commit to achieving long-term sustainability across the organization, in terms of environment, social and governance aspects.

3 Corporate Sustainability Strategic Initiatives

We deliver innovative solutions for sustainable living of all societies.

Tipco Asphalt's corporate sustainability strategies are formulated in line with the new Vision 2025 corporate strategy plan. They focus on materiality impacts to our customers, employees and local communities, across the following aspects; namely, innovation leader, eco-efficiency and public road safety.

To ensure effective executions of these 3 strategic initiatives, we also require 2 solid foundations: i.e., Good Corporate Governance and our People (please see details in Embedding Strategy chapter)

Our 1st DNA:

INNOVATION LEADER

Innovative Leader - Gain A Competitive Edge by inspiring employees to the create and implement innovative ideas for products, services, and technologies. In addition, these new ideas can also be used to solve problems within our organization.

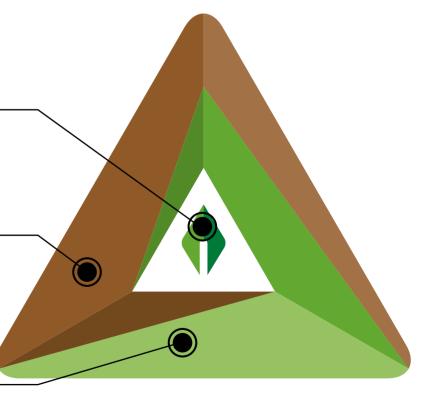
ECO-EFFICIENCY OPERATIONS Our 2nd DNA:

Eco-Efficiency Operations – Effective use of natural resources, water, and energy can significantly reduce cost of production. Our competitive advantage can also be improved through adoption of improved production processes, new product offers. and product recycling.

Our 3rd DNA:

SAFETY AWARENESS

Safety Awareness - A safe and healthy workplace not only protects workers from iniury and illness, but also reduce medical costs, work-absence and turnover while increasing productivity, quality, and employee morale. We also escalate the safety awareness to local communities.



SUSTAINABILITY STRATEGY AND EMPLOYEES COLLABORATION 1102-15 | Clause 5.2.1 |



embedding Sustainability in Our Culture for moving forwarding to be a SUSTAINABLE ORGANIZATION

Our Alignment

Tipco Asphalt is concerned about sustainability which our strategy covers the 3 dimensions of economic – innovation leader, operations - eco-efficiency operations and social - safety awareness. We are committed to exerting the trainers called SD Officers to train each of influence through our core values, business culture, and ethics, thus creating opportunities and competitive advantages by creating shared value with all key stakeholders.

Every year, the CEO sets the theme of our SD initiative focus to support our vision and in 2019 the theme was "innovation". All business units had their own key concerned material issues and they also need to exhibit the innovation initiatives they had been done in 2019.



formulation and business direction, hence encourage their ownership upon the Group's business accomplishments. The success starts from accountability & passion.

to move in alignment and have synergy. We trained big move. concerning units to understand the material issues that they need to contribute to SD Strategy. Our staff set the KPIs and need to report on monthly basis.

and driving the success with passion, then they take make their works better everyday. Having the proper knowledge. training and systems in place is also critical to enabling everyone to make sustainability part of their job.

Innovation Leader



Tipco Asphalt strives for embedding the sustainability We understand that fundamental of innovation knowledge in our corporate culture to drive all of our employees is very important for our employees, before we make a

Innovation in the next economy is about much more than inventing. It's about figuring out how and where we can add unique value in the whole value chain of our operations. In 2020, we plan for managing innovation We essentially groomed the team with understanding boot-camp to train our employees who passionately volunteer to join and would like to leverage their abilities the ownership of sustainability and eventually they will and have a better understanding of innovation

> We want to bring out the talents of our employees so that they will be proud of their innovations as well as improving corporate operations efficiency which is the sustainable way for creating corporate competencies and increase competitive edges.

By 2025 We aim to achieve the following:

- Establishing an innovation organization for promoting and supporting corporate innovations.
- Promote innovation activities, closed innovation - "Innovative Solutions Award", open innovation and collaborative innovation with partners.
- Encourage more of employees to join the innovation programs every year.
- Develop reliable measurement for encouraging and promoting employee's imagination and also needs excellent communications to promote

Eco-Efficiency Operations



TIPCO Asphalt Group strives for implementing eco-efficiency concept across our business value chain. in particular our operations that focus on economic growth, competitive advantage while being responsible for ecology and environment. These aspirations were fully integrated into the Group's Vision 2020 under the "Grow Through Sustainable Development" strategy that signifies the Group's future growth through sustainable and responsible business practices, and also the "Enhance Efficiency" strategy that focuses on operational efficiency improvements. Those strategies marked a long-term milestone for our business directions and also embedded into our new Vision 2025.

As key component to Sustainable Development Strategy. our Eco-efficiency Operations are based on Environmental Management System (by ISO14001) accompanied by an environmental policy with key focuses on (i) prevention and control of pollutants, (ii) reduce the greenhouse gas emissions, (iii) control of resource usage, 3R (reduce, reuse and recycle), and (iv) reduction of waste disposal

At present, our operation units have initiated several eco-efficiency support projects; Replacement of Heat Coil for Para-AC Tank at Phitsanulok Plant and Increase of Joint-Sealer Productivity at Nakhonratchasima Plant. to name a few.

By 2025 We aim to achieve the following:

- Educate our employees on eco-efficiency
- > Zero municipal water resource usage in production processes
- Zero water effluent across all 5 plants in Thailand
- Reduce the Greenhouse Gas Emissions across all 3 scopes, both direct and indirect emissions
- Promote circular economy initiative through reuse and recycle of total industrial waste

Safety Awareness



Safety awareness is an important foundation of Safety Culture ternary by 3 pillars; Psychology, Leadership and System. For TIPCO Asphalt Group, we strive for World Class Safety Culture by strengthening on safety awareness of our staff For instance, we have implemented and certified the "Road Traffic Safety Management System - RTSMS" according to ISO 39001 standard, for our truck drivers.

In addition, we aim to enhance safety awareness across all stakeholders who we can induce or directly influence. For instance, we introduced "Safety Brief for Visitors" for all visitors to our plants. We implemented strict basic selection criteria upon contractors/vendors for plant investment projects that they must implement occupational health and safety management and follow our safety protocols. "Safety Introduction for Contractor" shall be provided for contractor's staff by our Plant SSHE prior to any project start.

We also strive for raising safety awareness of local communities nearby our plants. Our Domestic Sale & Marketing (DMK) and Plant SSHE team co-arranged a "Safety Training Courses" CSR project for our customers to support their workers' safety awareness. The "Safety Road for Kids" is another flagship CSR project on safety awareness, which our International Business (IB) department conducted with primary school students.

By 2025 We aim to achieve the following:

- > Zero case of fatality and severe accident.
- Occupational Health and Safety Management System are implemented across all oversea subsidiaries
- To raise health and safety awareness of employees
- To cover different risks, hazards and controls associated with the ecosystem

Achieving Goals

To achieve the goal of business sustainability, Tipco Asphalt has been devoting in organizational development and strengthening our competitiveness through our innovation and operational efficiency. We strive for promoting business growth through our innovation. environmental stewardship, and social development.

The CEO is accountable for driving the directions, policies, and governance structure to drive Tipco Asphalt's sustainability strategy. At the working level, the SD team is monitoring Tipco Asphalt's sustainable performance and implementation of policy and plans to ensure that the company achieves its goal in bringing manifest sustainable benefits to all partners and stakeholders via quarterly SD Management Meeting.

Most of us work to preserve the value of things we own. Establishing a sense of sustainability ownership prevents the issue of "someone else's problem" to manage. Everyone's small contributions will lead to big differences: a future-proof company with engaged. productive employees, and a healthier planet.



Small actions on everybody's part will lead to big differences

GOOD CORPORATE GOVERNANCE & OUR COMMITTED COLLEAGUES | 102-4 | Clause 4 & 6.2 |



cultivating Ethics is Everyone's Business



Scan here for

Code of Ethics, of the Tipco Asphalt Group

Our corporate governance policies and practices are outlined in our Corporate Governance Charter, Supervisory Board Charter, and Managing Board & Executive Committee Charter. These are available in the corporate governance section of our website, at http://www. tipcoasphalt.com. The present prosperity, success, and stability of the Tipco Asphalt Group is the result of doing business according to its core values - the ideals that have been held in high regard and put into practice by the Board of Directors, by management, and by the staff of all levels.

This fosters synergy in our people and is one of the building blocks of the Tipco Asphalt Group's corporate governance which generates confidence in shareholders. investors, and all stakeholders.

All of the Tipco Asphalt Group's employees must understand and embody our core values (Teamwork -Integrity - Prudence - Commitment - Open-minded) in the conduct of the Tipco Asphalt Group's business.

Our Code of Ethics is all about our values, which are shared throughout the Company. The principles it contains are the top-level reference for guiding our behavior, decision making, and activities. Compliance is a competitive advantage: It preserves and strengthens the trust and confidence of our customers on a permanent basis. We make sure that compliance is an integral part of all our business processes.

As one of the leaders in the asphalt business in Asia, we have a responsibility to lead by example. Our vision has self-explanation: we want to be everywhere on the road surface bring a positive contribution to people's lives. This must be reflected in everything we do. We believe that conducting our business with the highest standard of integrity is essential to our long-term success. At Tipco Asphalt's, compliance and ethics are everyone's job and responsibility, I 102-16 I

Code of Ethics: Tipco Asphalt Group

A total of employees who response on Code of Ethics' annual acknowledgement online in Thailand.







Strong Corporate Governance Transparency



Anti-Corruption Practice

The Board of Directors and management of the Group commit to good corporate governance practices to maintain the Group's sustainable development. The Group strives to protect and promote the interests of all stakeholders by observing ethical business practices based on transparency and traceability.

Our Corporate Governance pillar focuses on key aspects including rights to shareholders and equitable treatment, role of stakeholders, human rights, intellectual property infringement and information disclosure/transparency.

The Group also established a corporate governance policy for the Board of Directors and the employees to abide by. In addition, the Group adopted the corporate governance code for listed companies 2017 (CG Code) developed by the Securities and Exchange Commission (SEC), which we review the CG Code an annual basis.

The Group was awarded with several recognitions. We became one of top listed companies included in the Thailand Sustainability Investment Index (THSI Index) since 2018. In 2019 we were awarded with the SET Sustainability Award's 2019 (Rising Star Award category for companies with market capitalization of Baht 10-30 billion) and the Sustainability Disclosure Award 2019 from the ThaiPat Institute, to name a few category for companies with market capitalization of Baht 10-30 billion.

The Group strongly commits to our 'zero-tolerance' philosophy toward any type of corruption activities by any person or group associated with the Group. In 2013, the Board of Directors had adopted the Anti-Corruption Policy, with the ultimate aim to prevent corruption across all value-chain activity while maintaining vigilant operations. The policy was revised in 2019, along with the development of the Anti-Corruption Guideline Manual that provides a clear and detailed standard for all staff

Since 2017, the Group won recognition of "Level 4" membership status from Thailand's Private Sector Collective Action Coalition against Corruption (CAC). hence reaffirming our dedication to fight against corruption. In 2020, we are currently in the process of applying for CAC's Certificate of Membership

In 2019, the company also announced the "NO GIFT" Guideline which was effective promptly.

Speak up and misconduct reporting

We encourage everyone, including external business partners, to express, in good faith, any concerns they might have regarding possible violations of our Code of Ethics, the Company's policies, or the law. Managers are accountable for maintaining a working atmosphere where employees are comfortable about speaking up and expressing their concerns freely. The Company applies the highest standard of confidentiality in the handling of all reports received and ensures that no employee who reports a concern in good faith suffers retaliation in the form of harassment, adverse employment or career consequences.

Value for the Future

The Board of Directors and management of the Group commit to good corporate governance practices in order to maintain the Group's sustainability. The principle is that we strive to protect and promote the interests of all stakeholders by observing ethical business practices based on transparency and traceability.

In 2019 through early 2020, the Group is proceeding to identify and promote behaviors and systems via the corporate Innovation-driven culture formulation. We anticipate behaviors and system that focus on the risk control and managing behaviors of all the organization's members, in particular in reference to the stakeholder relationship management.

The Innovation-driven Culture aims to include the sharing of related values and principles; definition and integration of critical success dimensions in relation to economic, environmental, and social responsibilities.

The employee is the key for organization to promptly adapt to new challenges

"People" are the vital foundation of our business. Our staff is the key to the success of adjusting to new changes amidst rapidly changing business environment. We implemented effective enterprise risk management practice while conducting the strategic review on a regular basis, in order to stay up to date on all factors that could assert impacts to our businesses.



SUSTAINABLE DEVELOPMENT LED BY TOP MANAGEMENT | 102-4 |

Tipco Asphalt Group has always been committed to its founding spirit of putting innovation, eco-efficient operations and safety as top priority. Our goal is to adhere to corporate social responsibility and to provide world-class products and services. We hope to realize our ultimate vision of a harmonious symbiosis with the entire society.

Since the adoption of 17 Sustainable Development Goals (SDGs) by the United Nations, we have built on our long-term commitment to our role as a global citizen by actively focusing on both our major stakeholders and the SDGs. To this end, we have set out three major sustainability strategies, each aiming to reconcile the interests of our stakeholders with our goals toward sustainable development.

At Tipco Asphalt Group, sustainability development is recognized as everyone's responsibilities where each staff will have his role upon sustainable development contributions. Nevertheless, to ensure successful implementation of sustainable development philosophy within the Group, these developments must be driven from the top management members down to all unit levels.

In 2019, Board of Directors and top management fully integrated concept of sustainable development into the group's long-term strategic direction. In Vision 2025 plan, sustainability management was explicitly bombarded into new Mission/Vision statements and become one of the key strategic goals, which is accompanied by 3 SD strategies focused on innovation, eco-efficiency and public road safety. Such strategic design allows not only full alignment between SD and corporate strategic direction but also highlight executions of 3 SD strategies across the whole Group to ensure successful implementations.

The Group implemented **transparency, integrity and compliance** by integrating them with our corporate culture through **hearts and minds of our staff.** This has become major driving force in our continual developments. Our staff are committed to ethics and integrity while we take into consideration of risk management while we work. Our risk management mechanisms are constantly improved to minimize costs should risks occur and enhance our sustainable operation values.

Our sustainable development has Good Corporate Governance as foundation integrated into one of our Group's core values – integrity, which will help us to earn "License to Operate" wherever we expand businesses into. To drive a successful sustainability management, the Group set up a committee, which consists of executives from various departments at unit head level and up, to help promote sustainability. The Management stipulates the authority to monitor the operation results according to the policy and provide supports for successful implementation of the framework.

According to sustainability strategies, determination of sustainability management framework is an important mechanism for driving Internal management, both at management and operation level. We implemented various projects with all staff fully understand and align with our sustainability strategies; namely, "Innovation", "Eco-Efficiency Operations" and "Safety Awareness". These will allow the Group as well as communities/societies to meet all stakeholders' expectations. The sustainability management framework diagram is illustrated in the next page

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 64

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 65 |

SUSTAINABILITY DRIVE STRUCTURE

Provide Budget of 1% average annual net profit over 3 preceeding years

Executive Committe

Monitor and Assurance

Nomination & Remuneration

Sustainable Resources

Audit Committee

Conduct monthly internal audit meeting on financial & operational issues

Board of Directors

Staff Meeting

CEO Meets Employees

(Top Management gives directions and supports for all corporate initiatives)

Sustainability Management Meeting

Review & Follow-up on Key KPIs (GRI)

Management Meeting

Regular Top Management Meeting with business unit heads (Performances)

Risk Management Committee Meeting

RMC meeting to discuss and monitor the Group's top corporate risks and key risks through Key Risk Indicators (KRI), internal

Management

CG Committee

ustainability related issues

nd ensure good corporate

Review & approve on

governance practices

risk controls and ERM work progresses

SD Officer & **CSR Project Owner**

- Create, Support and Monitor on Initiative Executions
- Motivate & Inspire
- Lead by example
- Promote & Enforce the Activities

Risk Champion / Risk Officer

- Help RMO on develop and update risk registers pertaining to their own units
- Focus on KRI tracking and internal risk control implementation to ensure sustainability

Risk Management Office (RMO)

- Work closely with RMC, RC, RO to promote risk awareness and help monitor risk updates
- Ensure proper implementation of risk control measures for sustainability
- Centralize, manage and monitor ERM for the group
- Conduct risk reviews

Working Team

ROLES AND RESPONSIBILITIES

Board of Director

- Determine the Group's policies and objectives
- Appoint sub-committees i.e. Audit Committee, Risk Management Committee, CG Committee, etc. and monitor their performances on regular basis

CG Committee

- Define policy guidelines that are relevant and consistent with the Group's business practices and principles of good corporate governance
- Scrutinize, review, and approve the Group's policies by adhering to the principles of good corporate
- Propose the Group's policies to the Board of Directors for approval
- Review the Group's policies at least once a year
- Report the Audit Committee on the implementation of good corporate governance policy

Risk Management Committee

- Define risk management policies and plans
- Supervise, monitor, and follow up the risk management in accordance with the risk management policy and plan
- Evaluate and approve risk assessment and response plan (internal controls)
- Follow-up on risk management implementation, improvement, and development
- Report risk management status to the **Executive Committee**
- Communicate with the Audit Committee on key risks

BU Heads

- Determine general Group's policy in order to coordinate with the Board of Directors
- Manage the Group's internal operations and to determine the general management system
- Determine the structure of the Group's administration to coordinate with the board of directors
- Direct, coordinate, monitor, and assign affiliated unit, position, responsibilities, and delegate authority, in consideration of appropriate and efficiency

Sustainability Management

- Responsible for assuring that the Group's business operations and supply chain managements are in compliance with sustainability and ethical standards.
- Involve in leading collaborations and activities with partner organizationS

Risk Management Office (RMO)

- Develop enterprise risk management foundation, policy. work processes and regular risk register updates
- Ensure that all departments carry out risk assessments, response plans, and corrective actions
- Analyze and summarize organizational risk management results in accordance with guidelines established by the Risk Management Committee
- Develop quarterly risk report
- Conduct risk reviews

Sustainability Working Team

- Develop a shared vision and mission consistent with the goals and objectives of the Corporate Sustainability Strategy
- Manage data and information using technology and utilizes work measurement through analytics and relevant metrics with complying with GRI Standard
- Manage and mentor staff, facilitates training and coaching, and emphasizes on the knowledge of corporate Sustainable Development. Driving all employees to move in same direction to achieve the goals

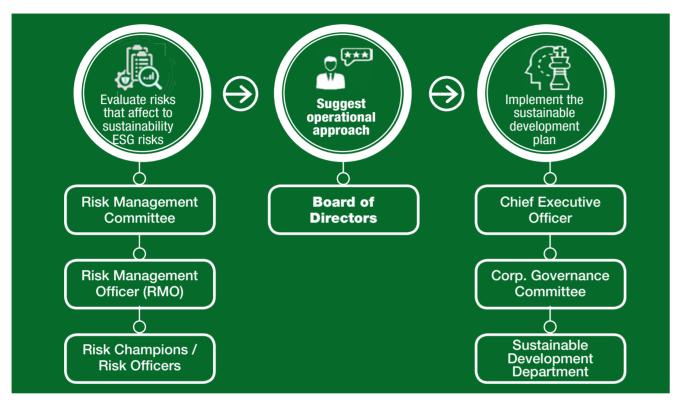
CSR Working Team

- Communicate to all stakeholders to acknowledge. understanding and realize the social responsibility
- Visit relevant departments within the Group to discuss key CSR issues while providing advices and solutions in compliance with CSR standards
- Encourage CSR knowledge and experience sharing among internal and external parties

EFFICIENT DRIVE STRUCTURE | 102-4 | Clause 6.2 and 7.4.2 |

Tipco Asphalt Group has designed a clear sustainability operation structure to support concrete implementation of sustainable development and to reinforce Tipco Asphalt's Sustainable Development Policy approved by the Board of Directors of Tipco Asphalt Company Limited. The Tipco Asphalt Sustainable Development Policy has been clearly laid out as a management guideline to ensure sustainable development in the long run for the Group and the public at large. It was designed to create greater and more sustainable benefits to all stakeholders within and outside the Group. The policy reflects the corporate values, vision, mission and long-term strategy. The three strategies and two foundations for sustainable development focus on economy, society, good governance and environment, all of which are integrated with Tipco Asphalt Group's operations, with ultimate objectives on delivering good return on investment and long-term, sustainable growth. The policy detail is as follows:

- 1) Manage business under good corporate governance practices and the Code of Ethics
- 2) Respect and support human rights of employees and all stakeholders across the value chain, with zero support to any activities that violate such human rights
- 3) Constantly improve human resources operations, particularly in matters concerning health, security, safety, and environment
- 4) Strategically and continually improve the capability of environmental operations in order to minimize environmental impact in a sustainable manner
- 5) Treat all stakeholders fairly by observing a good code of business conduct



- Treat both current and prospective customers fairly
- 7) Everyone in the Group is encouraged to participate in community development initiatives and contribute to facilitate the sustainable environmental practices implementation of related projects an Corporate Governance Committee is overseeing sustainable development in line with corporate governance principal contribution.
- 8) Strategically integrate social responsibility guidelines into business decision-making process to better define the value chain of the Group
- 9) Regularly review and manage business impacts in line with expectations of all stakeholders aswell as environmental changes.

Under this policy, Tipco Asphalt Group's CEO is assigned to formulate related strategies including implementation of related projects and activities. The Corporate Governance Committee is responsible for overseeing sustainable development

in line with corporate governance principles, sustainable development standards, and industry's best practices. The Sustainable Development Strategy is part of the

business strategy that all Tipco Asphalt Group subsidies have to adopt in accordance with the Group's sustainable development direction.



Scan here for CSR policy



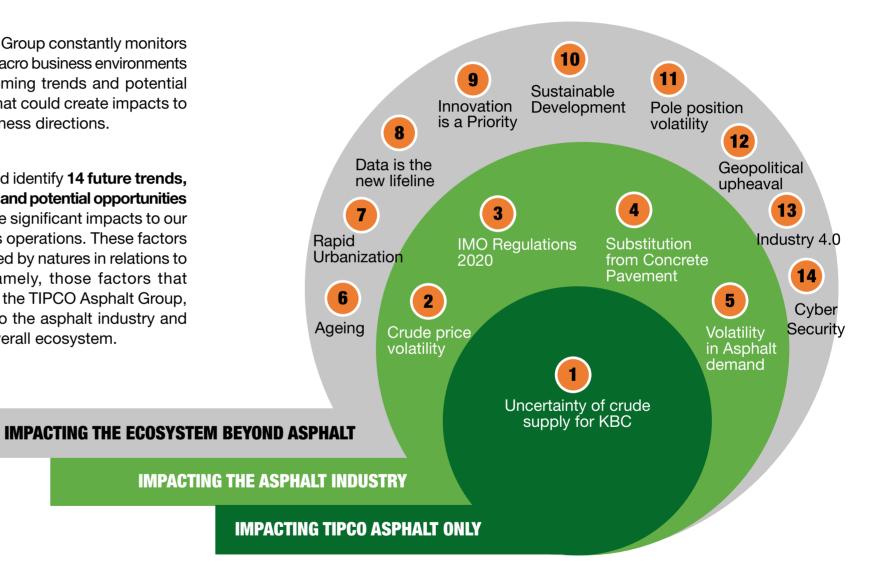


OUR SUSTAINABILITY ANALYSIS BEGINS WITH FUTURE TRENDS, KEY RISKS & POTENTIAL OPPORTUNITIES

I 102-15 | Clause 7.4.3 |

TIPCO Asphalt Group constantly monitors and analyzes macro business environments including upcoming trends and potential uncertainties that could create impacts to our future business directions.

We research and identify 14 future trends, key challenges and potential opportunities that could place significant impacts to our future business operations. These factors are distinguished by natures in relations to our Group; namely, those factors that directly impact the TIPCO Asphalt Group, those impact to the asphalt industry and those to the overall ecosystem.



Source: TIPCO Asphalt Group Strategy 2025 Workshop, December 2019

MEGA TRENDS, KEY RISKS & OPPORTUNITIES WITH CONCERNING MATERIALITIES | 102-15 | Clause 7.4.3 |

	Risks	Opportunities	Concerning Materiality	
Uncertainty of crude supply	Significant risk to business continuity and profitability.	Managing consistent availability of crude supply will provide a completive edge over competitors facing similar	28) Developing suppliers to be reliable business partners	
Crude price volatility	Unpredictability in crude margins and overall profitability.	Capitalize on trading of crude oil	7) The use of resources and new materials p.176-187	Our Group identifies key challenges across our business value chain: beginning with the crude business that we focus mainly on the consistent supplies of heavy crude for the refinery of asphalts and related products. At the same time, we also monitor the volatility of crude price as well as asphalt demands across markets amidst changing regulations that could place impacts not only to our businesses but also to the asphalt
Changes in Regulations	Regulation on switch to LSFO could place impact on maritime transportation costs		13) Compliance with relevant environmental requirements	industry level.
Product Substitution	Loss of business to competitors such as cement pavement or Plastic road	Diversity into non-asphalt road pavement application	3) Developing safe transportation networks and reducing cost	
Volatility in Asphalt demands	Demands fluctuation across markets due to government budget reductions or delays	Diversity into non-asphalt road pavement application	31) Quality and responsibility for products & services	
Aging workforce	 Loss of experience and knowledge of retiring employees Reduction in manpower and productivity if new blood is not introduced 	 Wealth of knowledge beneficial to the organization if managed and transferred appropriately. Groom next generation of talents to succeed the business 	15) Human Management p.351-365 and retaining staff 18) Promoting staff p.366-379 training & education 1) Creating innovation & p.125-153	At the same time, we take into considerations of other mega trends that indirectly impact our future business direction. Aging workforce not only places concern on loss of experience and knowledge of retiring employees but at the same time encourages us to recruit and groom next generation of our talent staff to succeed in business. Rapid urbanization , especially in those developing markets in Southeast Asia, not only offer great potential opportunity to the Group upon
Rapid Urbanization	Risk of losing market share if our business is not agile or cannot expand fast enough as compared to competitors	Increase in infrastructure / road projects leading to greater asphalt demands	promotion the development of national infrastructure	infrastructure developments and hence more asphalt sales but also assert some risks of losing market shares to our competitors if our business cannot enter the markets fast enough. Please note that each of these factors also got mentioned through our <i>Materiality Analysis Survey</i> conducted during 2018 and 2019, hence reaffirming their significances and potential impacts to TIPCO Asphalt Group.



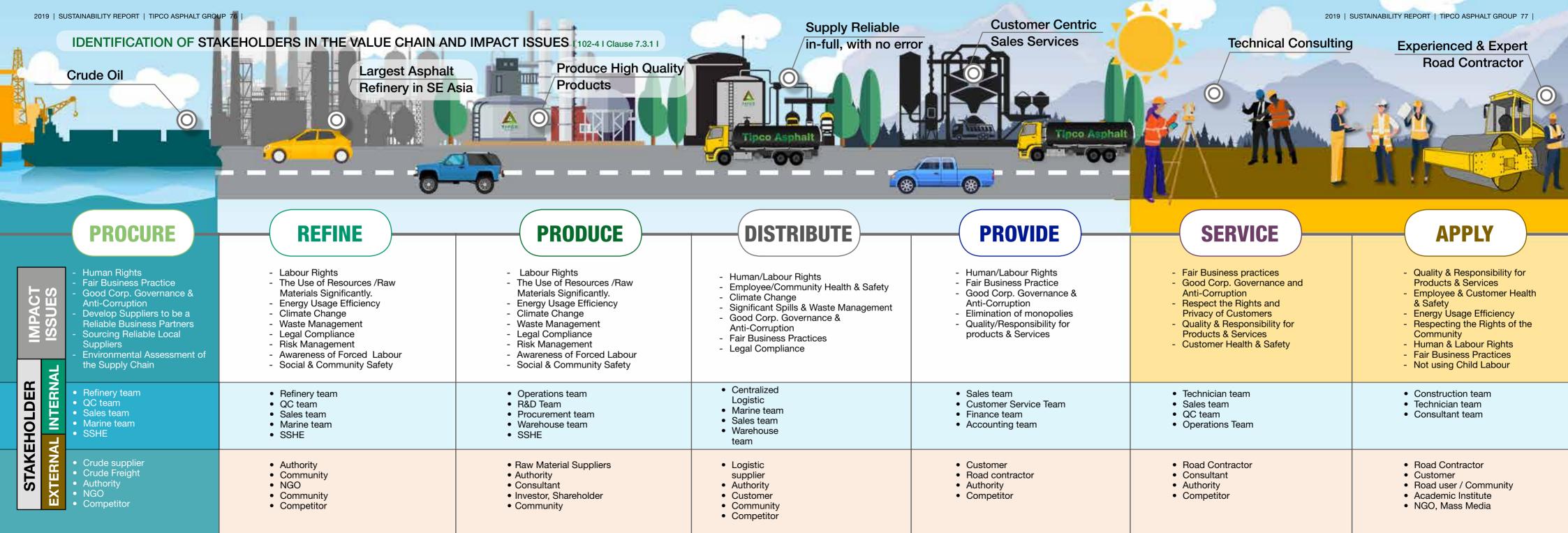


MEGA TRENDS, KEY RISKS & OPPORTUNITIES WITH CONCERNING MATERIALITIES

	Risks	Opportunities	Concerning Materiality	
Data is the new lifeline	Risks to customer data management & protection	Build an Insight-Driven Organization for more informed and effective decision making.	6) Fair business p.276-288 practice	One of the key weakness factor which our Group needs to improve upon is the lack of data utilization. We aim to build an insight-driven
Innovation is a priority	Opportunity losses. Loss of market share with competitors catching up with similar or better products, services and business models.	Leverage ecosystem partnerships to drive customer loyalty and offer more client-centric value-added solutions	1) Creating innovation & p.125-153 & expression the development of national infrastructure	organization led by data analytics for generate great information that leads to better decision making.
Sustainable Development	Need to focus more on innovation	 Position itself as an innovator in new business opportunities in SDGs that goes beyond just compliance. Boost and recognition to Tipco Asphalt's brand image by being a leader in Sustainable Development 	8) Energy usage p.169-175 efficiency 11) Climate change p.169-175 12) Significant spills & p.176-187 waste management	Meanwhile, sustainable development and innovation become our top priority as our Group needs to leverage on innovative ideas within the
Geopolitical Upheaval	 Loss of market share and risk to business continuity in the long run due to multitude of factors, such as competitions. 	Leverage existing leadership position in the market to shape/dominate the future of the market as a pioneer with new and innovative ideas		group into new products and services development before our competitors. More importantly, we are integrating these SD components into corporate strategy to ensure long-term success and stable pole position.
Pole position volatility	Political instability will cause reduction in industry consumption and overall economic growth, which can adversely affect asphalt demand	Opportunity to reassess portfolio strategy and ensure the business is well-prepared and responsive		
Industry 4.0	Competitors may adopt disruptive technologies (e.g. IOT. AI, etc.) that help them drive higher productivity and lower costs in the long run	Offer more service-led business model that utilize technology or digital means	1) Creating innovation & promotion the development of national infrastructure	The use of new technologies could in fact plays crucial role upon driving higher productivity in the long run while our Group these potentials and offers more service-led business model that utilize these technology or digital means. Nevertheless, the Group will take into serious consideration
Cyber Security	Risk on cyber attacks/ ransomware etc.	Inspire confidence and trust in your customers and enable more secured digital transactions/platform.	25) Respecting Rights of p.244-275 community	of the associated risk of cyber attack/cyber securities that come with these new technologies.
Impacts TIPCO ASPU	IALT only			

Sources: TIPCO Asphalt Group: Vision 2025 Strategy Formulation Workshop (December 2019) and inputs from Risk Management Office (RMO)





2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 78 |

Internal Stakeholders consultant accounting warehouse COMPANY DIRECTOR finance SSHE operations customer service consultant EMPLOYEE'S FAMILIES refinery construction

External Stakeholders

Suppliers / partners vernment agencies

communities / societies

academic

consultant institutes
Raw material supplier

authority

Shareholders / investors

Logistic supplier NGO

OUR BUSINESS ECOSYTEM 1102 - 40 | Clause 5.3 and 7.3.2 |

200

TIPCO

Our Stakeholders

Government Agencies & Public Organizations

- Government Authorities
- Local Authorities

Competitors

Supplier / Partner

- Suppliers
- Business Partners

Community / Society / **Academic Institutes**

· Mainly the communities that we have our operations

Mass Media

 Mainstream media and alternative media

Employee & Family Management & staff teams

Company Director

Board of Directors

Customer**

- Road Contractors
- Traders & Distributors
- Modern & conventional Trade

Road User

Shareholder/ Investor

- Venture capitalists etc.



STAKEHOLDER MANAGEMENT | 102-4 | Clause 5.3 and 7.3.2 |



building lasting relationships through stakeholders' engagement in various communication platforms

Management Approach

Establishing a framework for sustainable development, an organization must understand the relationship between businesses and related stakeholders, in conducting business with considerations to economic, social and environment aspects. Business operations should be able to respond to stakeholder's purposes & goals with social responsibility.

To develop our framework, the Group conducted a study on all stakeholders across value chain ,followed by Stakeholder Engagement. This allows our business plan to minimize adverse impacts while encouraging cooperation, and shared values between the company and stakeholders. This concept allows all stakeholders; whether they are employees, customers, business partners, society and communities, can live together with common shared value while the Group can operate without their objections (i.e.,License to operate).

The Group also brought the requirements to formulate into sustainability strategy, which the Group believes that doing business with understanding will strengthen confidence, trustworthiness and make a difference while enhancing competitive advantage for our business.

Stakeholder Engagement Strategy

We improve everyone's life in our ecosystem

- 1) Objective of stakeholder involvement
- 2) Knowing our stakeholders better & deeper
- 3) Prioritize our stakeholders by impact & influence
- 4) Mapping stakeholders needs & priority
- 5) Dissemination & Communicate closely

Stakeholder Engagement Process

Our stakeholders comprise board members, employees & families, customers, communities, suppliers/partners, investors, governances and other entities that can affect or be affected by our activities, products and services. Maintaining an open dialog with our stakeholders is essential to understanding their needs and expectations. Every Tipco Asphalt operations perform specific actions depending on its activity, size, location and culture, and all operations have regular exchanges with local stakeholders, such as local authorities, schools and universities.

| 102-40 | 102-42 | 102-43 | 102-44 |

Engagement process as follows:

- 1) Stakeholder identification: we used value chain to identify who involved in each process (p.76-77)
- 2) Issues Identification: used value chain to identify issues between business and stakeholders (p.76-77)
- 3) Prioritization of stakeholder and issues
- 3.1) Prioritize importance of stakeholders (p.83)3.2) Prioritize importance of issues (materiality p.89)
- 4) Stakeholder diagram illustrated related issues with stakeholders (p.85)
- 5) Defining purpose & objective of stakeholders for formulating right strategies (p.84-85)
- 6) Planning for response to stakeholder on key concerns to improve our efficiency (p.85)
- Enhancing ability to respond to stakeholder issues for improving corporate efficiency.
- 8) Implementation of stakeholder's engagement plan to build relationship and trustworthiness.
- 9) Stakeholder engagement evaluation:

Stakeholders and Impact issues

Sustainable Development Team reviews impacts in the process throughout entire value chain every year to identify stakeholders and key issues through processes internal evaluation, process. The Group has also arranged annual discussion forum where community members can meet with Tipco Asphalt to express their comments and recommendations. The team identifies work hazards and environmental impact assessment from work and products in a life cycle manner using evaluation methods involving employees at all levels.

In addition to the annual hearing forum Sustainable Development Officer from our operating plants and, HCM officers also play crucial roles. They will ensure we respect the rights of community and persuade local community to share their voices to improve their living condition in such a way that Tipco Asphalt could support them in long run through projects or activities.

In addition, the Group provides alternative channels for stakeholders to express their opinion such as webpages, etc., while information provided will be used to identify sustainability issues to specific group of stakeholders using criteria for considering all stakeholders in the Tipco Asphalt value chain.

STAKEHOLDERS MANAGEMENT

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 82 |

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 83 |

STAKEHOLDERS ENGAGEMENT | 102 - 43 | Clause 5.3 and 7.3.2 |



identifying the stakeholder engagements using stakeholder matrix criteria and mapping

Following identification of the stakeholders, it is crucial to understand:

• The level of influence a stakeholder has on organization activities

Rating	Impact	Influence
Hight	Organizations activities directly impacts stakeholder (s) in that stakeholder (s) will experience significant change.	Stakeholder (s) has significant influences on the organization understanding, support, commitment, and involvement. Can formally instruct change
Medium	Organizations activities directly impacts stakeholder (s) in that stakeholder (s) will need to moderately adjust to minor changes.	Stakeholder (s) has some capacity but limited to formally instruct change to the organization strategy.
Low	Organizations activities results in little to no direct impact on stakeholder (s) but may result in some indirect impact.	Stakeholder (s) has limited influence to formally instruct change.

• The level of impact the organization activities has on stakeholders

Stakeholder Matrix Criteria

Involve Extensively

- Significant influence over others and have potential to aid or disrupt change adoption.
- Will be significantly impacted by change
- Communication: Aim to involve them; keep or develop them as allies and should emphasize frequent personal contact and face-to-face communication.

Address Concerns

- Significant influence over others and have potential to aid or disrupt change
- Important to anticipate their objections and adverse reactions when planning communications.
- Communications: Aim to sustain and expand their support but do not need to be as resource-intensive or frequent as the need for them to change is low.

Enlist as Needed

- Stakeholders will be significantly affected by the outputs of our work but have less influence over others and less potential to disrupt the process
- Communications: Should be strongly proactive and pre-emptive, utilizing more influential stakeholders to influence their acceptance

Keep Informed

- Stakeholders who are neither highly influential nor greatly impacted by the changes
- Communications: Minimal communication activities are required; mass communications are usually sufficient, and the main aim is to keep them informed.

STAKEHOLDERS MAPPING | 102 - 44 | Clause 5.3 and 7.3.2 |

High

	Address Concerns (High Influence/Low Impact)	Involve Extensively (High Influence/High Impact)
has on the organization activities		Company Directors Employees & Families
eholder activitie	Shareholders / Investors / Analysts	Customers (Road Builders) Communities / Societies
he stak zation a		Government Agencies & Public Organizations
s organ	Keep Informed (Low Influence/Low Impact)	Enlist as Needed (Low Influence/High Impact)
vel of Influ as on the	Competitors	Suppliers / Partners
Le P	Press/Media	Road Users

Low

Level of how impacted is the stakeholder (s) by the organization activities

High

WE PRIORITIZED AND FOCUSED ON STAKEHOLDER 'INVOLVE EXTENSIVELY' GROUP 1102 - 421

We places top priority on "Involve Extensively Stakeholder (High Influence / High Impact)" stakeholder groups that we used as the key concerning requirements

Internal Stakeholder; Company Directors





Employees & Families

• External Stakeholder; Customers (Road Builders)





Communities / Societies



Government Agencies & Public Organizations

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 84 |

STAKEHOLDER ENGAGEMENT AND SUSTAINABLE CO-VALUE CREATION | 102 - 43 | 102 - 44 | Clause 5.3 and 7.3.2 |

icon	Stakeholder	Purpose and Objective	Stakeholder Mapping	Modes of Engagement	Frequency	Key Concerns Raise d	2019 Performance Summary
	Company Directors	Legalization and correct in accordance with the code of ethics, transparency	Involved Extensively	Board MeetingCorporate CSV/CSR activities	 Quarterly Monthly	Good corporate governance according to the policy and strictly enforced Embedded Sustainability in Corporate Strategy & Business Plan	 CGR Score = 5 Stars CAC = Level 4 Sustainability = SET Sustainability Excellence: Rising Star Awards
8	Employees & Families	Good quality of life, job security, Fair compensation and Human Rights	Involved Extensively	Employee Engagement SurveyStaff Meeting with CEOe-mail and IntranetWhistleblowing	 3 year/time Annually	 Happy and Safety Workplace with Work-life balance Skills & Potentials Development Continuously Promotion, Salary and Career Advancement Communicate Corporate Activities Transparently Foster Innovation Culture that increase productivity, creativity 	 Fatality accident 1 case and lost time injury accident 1 case in 2019. Training average 30.63 hours/person/year (Function and Managerial Training only). Employee Promotion 3.1% Reviewed Salary Structure and effective from January 2020 Established "Annual Innovative Solution Award" competition and bootcamp
ॐ	Customers	Best quality goods and services at reasonable prices, Privacy and Security, and Fair Operating Practices	Involved Extensively	CRM/CSR ActivitiesSeminar ProgramsCustomer Satisfaction Survey	 Annually 	 Rely on delivering high-quality products on time and in-full quantity Respond to the customers needs in all dimensions; product Provide feedback, request, complaint effective channels Customer relations activities, seminars and roadshows 	 Customer Satisfaction Survey resulted 87% (Target 85% / 2018: 84.5%) Responded to complaints 20 cases with 100% issues fully solved. Complaints about customer confidential information being leaked = 0% "Road to the Future" Seminars for road contractor customers 4 times, all regions
	Government Agencies & Public Organizations	Follows all laws & regulations, Anti-corruption and bribery	Involved Extensively	Meetings / SeminarJoint CSR ActivitiesPlant Tour	As required	 Support collaboration projects to achieve committed SDGs Sharing new technology, innovation Pay local taxes and emphasize on local employment 	 Support 2 collaboration projects for the country to achieve committed SDGs SDG#3: "CPR-Lives Saving" with CP Group, Suratthani CSR etc. SDG#9: "Patching Pothole Project" with DDR, Mitr Phol Group etc.
8	Suppliers / Partners	Fair trade and prompt in-term payments, Human Rights	Enlist as Needed	Supplier performance feedbackAnnual Supplier MeetingCo-operate CSR activities	 Annually 	 Reassure safety working environment for suppliers Strengthening relationships by sharing information Collaboration projects for business growth& expansion Knowledge sharing for the maximum operational efficiency 	 Screening 1 new supplier with ESG criteria – plastic bag for premix supplier ZERO accident for sub-contractors in Tipco Asphalt workplaces Co-Value activity with partner: CPR life-saving training with suppliers
8	Communities/ Societies / Academic Institutes	Pollution free environment	Enlist as Needed	CSR Activity ProgramsOpen House EventWhistleblower	As CSR activity plan	 Collaboration and support for sharing knowledge & expertise Enhance quality of life and safety using corp. knowledge Listen to community needs & complaints by heart 	 Overall CSR (Community) Survey resulted 89% (Target 85% / 2018: 82%) ESG complaint from community = 0 case Well-accepted for 6 signature CSR/CSV projects and others 52 projects for communities / societies
	Road User	Safety Travel	Enlist as Needed	CSR Activity ProgramsWebsite, social medias	AnnuallyAs needed	 Safety road at all times High quality road pavement which durable road surface. 	 CSV/CSR: Patching pothole activity for Road Safety across 5 regions CSV/CSR: CPR & AED life-saving trainings for 956 persons
8	Shareholders/ Investors / Analysts	Financial stability, steady flow of income, possible capital growth and sustainable business	Address Concerns	Annual General Meeting (AGM)Analyst Meeting	Twice a yearAs needed	 Higher financial returns Manage business growth carefully Operational transparency / Reputation & Public Acceptance 	 Dividends paid per share = 1.50 Baht Book value per share = 8.50 baht The 2019 revenue = 37,626 M.THB, representing 35% growth from 2018
0	Press / Media	Disclosed information in an accurate, precise and timely manner	Keep Informed	Corp. events; press conf.Analyst Meeting	As required	Disclosing information accurately, and in timely manner Promote critical and creative media usage	 Receive news for publishing Including the image of the organization in a consistently good manner & transparent / trusted information for publishing 7 press visit company's activities 35 interviews and press conferences
	Competitors	Fair Business Practices, Anti-trust and Transparency	Keep Informed	Exhibition / ConferenceWebsite, Social Medias	As needed	Follow the Code of Ethics to manage business fairly and in transparent manner	1.Continuously conduct fair business practices and competition: No complaint2. Comply with Anti-competitive Behavior: No complaint



evaluating key sustainability issues related to internal and external business practices in accordance with GRI Standards.

Material issues are topics that reflect most significances pertaining to the Group as well as key external stakeholders' point of view; from economic, environmental and social aspects. We repeat this materiality exercise on a regularbasis to reaffirm the significance of these materiality concerns while capturing potentially new materiality issues that might emerge from the survey.

Our materiality process aims to identify and analyze the topics that influence the Group and our external stakeholders, and whether these topics presents any potential risks or opportunities in relation to our business strategy. It is therefore an important way of evaluating our ability to create and sustain values.

Identification of material topics

Material topics for 2019 was compiled partly from the material topics identified from the 2018 assessment and re-confirmed from our management that they are still valid, and partly from additional topics gained through the expanding priority focus scope of our materiality survey. Staying focused on what really matters to both for our business and stakeholders is the essence of our sustainability strategy.

For each material issue selected, we grouped similar topics together into material category which allow us to get a clearer picture to formulate initiative programs and set up suitable performance indicators. For 2019, we came across 7 new material issues, hence make it a total of 18 material issues, which we combined into 12 material presented throughout this report.

Process of Materiality Assessment

- Identify and analyze sustainability issues across the value chain, encompassing steps from raw material procurement to production, transportation, distribution, use of products and services, together with analysis of sustainability issues in related industries
- Analyze issues that matter to stakeholders through various means comprising in-dept survey with full explanation and prioritize the material issues
- 3. Verify material issues and align with enterprise risk management framework
- 4. Validate the material issues on regular basis

The Process of Materiality Assessment and Prioritization in Accordance with the Global Reporting Initiatives (GRI) Standardsategories

The Group reviewed sustainability issues in 2019 using the materiality survey results from the 2018 report based on the GRI Standards and ranked them by the impacts to both internal and external stakeholders. In addition, we considered the corporate's key risks, current global situation, ongoing trends, impacts analysis (with external experts from strategy workshop, the Monitor Deloitte). We also identify, prioritize, verify, and inspect issues in line with sustainability context, materiality, thoroughness, and stakeholder tolerance.

Materiality Assessment Review the 33 material issues from SD 2018 Identify the most relevant Stakeholde issues Opinions (Identified key Analyze the issues across the value chain: employees Verification customers. communities. suppliers) Get approval and 'buy-in' from Board Committee & CEO **Materiality Delimitation** Procedures for Survey Research in 2018 Sampling Internal Stakeholder GRI Standards ESG Questionnaires Qualitative Data In-person depth interview Open Questions Interviewed: March - May 2018 Reviewed: May 2019

MATERIALITY ASSESSMENT

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 88 | 2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 89 |

MATERIALITY ASSESSMENT | 102-42 | 102-44 | 102-47 | Clause 7.3.4 |

In 2019, we used the materiality Assessment 2018 results was used as reference, with top management confirm its result validation. Then, SD working team re-classified the amteriality issues, in accordance with GRI criteria and The Group's Corporate Strategy perspectives.

Value for the

No.	Materiality Issues	Low	RELEVANCE FOR TIPCO ASPHALT Very High
1	Creating Innovation and Promoting the Development of National		Moderate High Very High
2	Infrastructure Compensation, welfare, and employee satisfaction	5 Low	Moderate 12.1
2	Developing Safe Transportation Networks and Reducing Costs to		8
3	Expand for Various Communities		25
4	Local Supplier: Sourcing Reliable locally		18 11 5 24 20
5	Good Corporate Governance Transparent and Against Corruption		727 6
6	Fair Business Practices		very night
7	The use of Resources and Raw Materials Significantly	4	14 33 21 26 17 15 13
8	Energy Usage Efficiency		32 28
9	Water Management		02 20
10	Conservation of biodiversity		
11	Climate Change		23 2
12	Significant Spills & Waste Management		High
13	Compliance with Relevant Environmental Requirements		20
14	Environmental assessment of the supply chain	3	9
15	Human Management and Retaining Employees	10	
16	Good relations between employees and supervisors		
17	Employee Health and Safety		22
18	Promote Staff Training and Education	29	
19	Promote diversity and equal opportunities for employees	_	
20	Respect for differences and equality		
21	Elimination of discrimination or monopolies	2	
22	Not using child labour in the business, including suppliers in the	_	
	supply chain		
23	Motivation and awareness raising for forced labour		
24	Establishing Safety Rules and Regulations		
25	Respecting the Rights of the Community		Moderate
26	Respect for human rights		Moderate
27	Participation and Community Development	4	
28	Developing Suppliers to be a Reliable Business Partners		
29	Policy for political participation		
30	Customer Health and Safety		
31	Quality and Responsibility for Products and Services		
32	Respect the rights and privacy of customers		
33	Increase social and economic participation in communities	1	1 2 3 4 Low 5

RELEVANT MATERIAL ISSUES ARE PRIORITIZED

Impacts:

As per Materiality Assessment exercise, most of the key material issues from 2018 are re-confirmed their top relevancy this year. INNOVATION still remains the top materiality issue, followed by PRODUCT/ SERVICES QUALITY AND RESPONSIBILITY. SPILLS & WASTE MANGEMENT etc.

For INNOVATION, the Group will continue our initiatives to ensure that innovation will become core to our long-term future sustainable businesses: for example. develop and instill innovative culture, establish innovation center, to name a few.

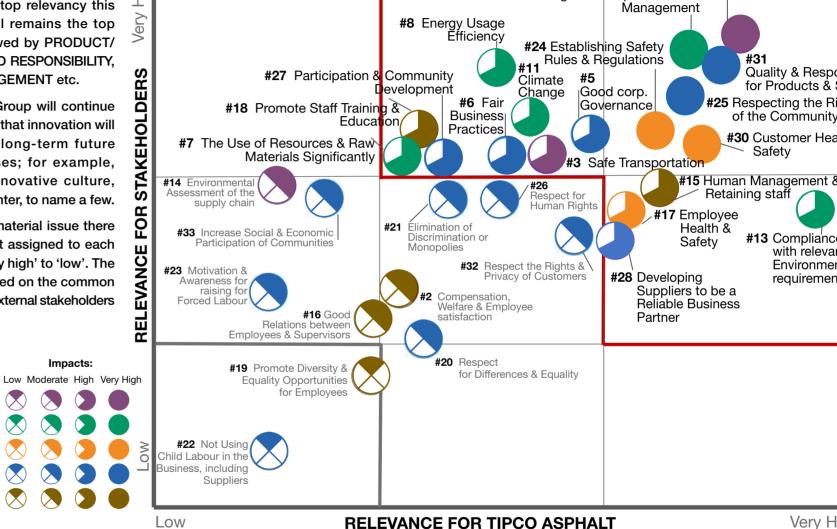
In this chart, for each material issue there will be a level of impact assigned to each issue, ranging from 'very high' to 'low'. The degree of impact is based on the common awareness of internal & external stakeholders rating.

Legend

Eco-efficiency Operations Safety Awarenes G Strong Corporate Governance

Innovative Leader

Value for the Future



#1 Creating Innovation &

#12 Significant Spills & Waste

Promoting the Development

Quality & Responsibility

for Products & Services

#25 Respecting the Rights

of the Community

Retaining staff

#30 Customer Health &

#13 Compliance

with relevant

Environmenta

requirements

Very High

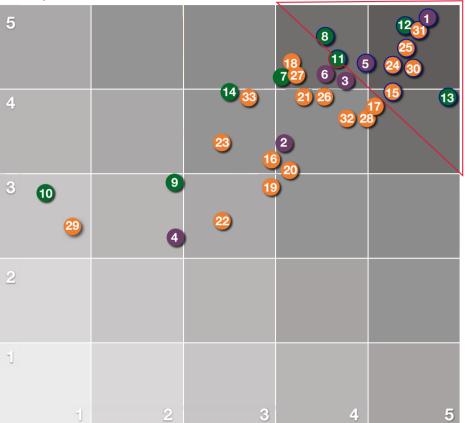
Out of 33 materiality topics, 12 are identified and continued from the previous report according to the Group's sustainability roadmap. This encompasses operation plan development and improvement included in the roadmap, signifying its importance to the Group and stakeholders. In addition, this 2019 SD report covered 6 new, additional topics; Innovation Management and Human Rights, to name a few.

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MATERIALITY MATRIX 2019 vs. 2018

2018

▼ Important to Stakeholders



Important on the business

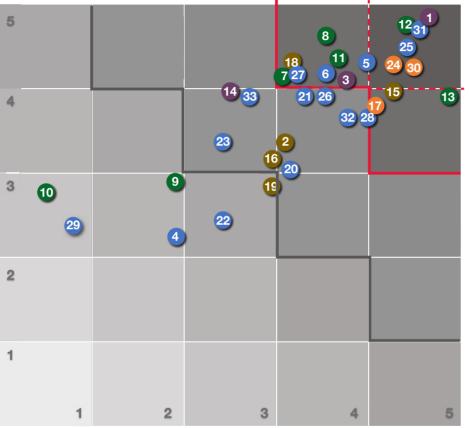
Structured by GRI Topics (Economic, Environment, Social)



➤ 11 Topics, 11 Issues

2019

▼ Important to Stakeholders



▶ Important on the business

Structured by Sustainability Strategy & Foundation









Future

12 Topics, 18 Issues

MATERIALITY ASSESSMENT FOR BETTER VISIBILITY & PRIORITY | 102-42 | 102-44 | 102-47 | Clause 7.3.4 |

66

Regular updates on materiality assessment allow us to reconfirm those material issues with top relevancy and high priorities to both Tipco Asphalt and related external stakeholders.

Top material issue is Innovation for Business Integrity & Development This helps us to formulate a clearer business direction while prioritizing upon urgent issues that both internal & external stakeholders share the same opinions

From the Materiality Assessment exercise, 11 material issues identified in "Very High" quadrant were given top priority and selected for the Sustainability Report 2018. In 2019, we further expanded the coverage scope to include those issues "High-Very High" quadrant, hence totaling 18 significant material issues classified into 12 topics, or 5 categories for Sustainability Report 2019. For this year's report, we switched our report structure from **GRI format** to our **Corporate Sustainable Strategy platform.**

We constantly monitor and update our material issues to ensure we correctly address the most important topics to our business and external stakeholders while taking full consideration and coverage on economic, environmental and social aspects.

Materiality Assessment **2019**

- From materiality assessment and key material issues identified, we crystalized these findings to formulate our set of 3 corporate sustainability strategies; namely, Innovation Leader, Eco-Efficiency and Safety Awareness each of which corresponds to Economic/Environment /Social aspects. In addition, successful implementation of these 3 strategies requires strong foundations on Good Corporate Governance Transparency and Focus on Employee Development (Value for the Future).
- We also assign a score to measure the degree of materiality issue impact, ranging from low to very high, which we ranked these material issue scores in the report accordingly.
- This year, the score guidelines have been established in accordance with ISO 9001, ISO 14001, ISO 45001 and ISO 26000 standard guidelines and consistent with GRI standards (the Group's benchmark). The total number of top material issues was increased from 11 to 18 issues.

Materiality

The basis for sustainability framework

The relevance of an issue covered is determined by the following criteria:

- The degree of impact caused by our activities throughout the value chain
- How the issue impacts our business strategy
- How the issue might affect stakeholder relationships with Tipco Asphalt

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18 MATERIALITY ISSUES, MATERIALITY TOPICS & SDGs & ISO 26000 | 102-44 | 102-47 | Clause 7.3.4 |

18 Materiality Issues	12 Materiality Topics	UN SDGs	ISO 26000	Page No.
INNOVATION LEADER FOR PROSPERITY ECONOMIC				
 Creating Innovation and Promoting the Development of National Infrastructure 	Foster Innovation Culture	4 / 8 / 9/ 12 / 17	6.6.6/6.5.4	126
 Developing Safe Transportation Networks and Reducing Costs to Expand for Various Communities 	Responding to Road Safety Issues	3/4/9/ 11/17	6.6.6	155
ECO_EFFICIENCY OPERATIONS FOR BETTER ENVIRONME	NT			
 Climate Change Energy Usage Efficiency Compliance with Relevant Environmental Requirements 	Save the World	4/ 7/ 9/ 12/ 13/ 17	6.5.5	169
 Significant Spills & Waste Management The use of resources & raw materials significantly 	Towards the Circular Economy	4/7/9/12/ 13/17	6.5.3/ 6.6.4 /6.5.6	178
SAFETY AWARENESS FOR SAFETY SOCIETY				
Establishing Safety Rules and RegulationsCustomer Health and SafetyEmployee Health and Safety	Safety is in Tipco Asphalt Group's DNA	3/4/9/ 11/17	6.4.6/ 6.7.4/ 6.8.8	192
GOOD CORPORATE GOVERNANCE TRANSPARENCY FOR	STRONG BUSINESS FOUNDATION			
Quality and Responsibility for Products & Services	Most Trusted Asphalt Products & Services	3/8/9 /17	6.7.3 6.7.6	216
Respecting the Rights of the Community	Give Respect, Earn Respect	5 / 16 / 17	6.3.9	244
Fair Business PracticesGood Corp. Governance Transparent & Against corruption	Ethics is everyone's Business	16 / 17	6.6.5/ 6.2.3/6.6.3	276
Developing Suppliers to be a Reliable Business PartnersGreen procurement	Valuable Trusted Partners	8/9/12 /16/17	6.6.6/6.5.2	306
Participation and Community Development	Good Citizens	3/8/9/ 11/17	6.8.3/ 6.8.4/6.8.8/7.6.3	318
VALUE FOR THE FUTURE BY TRANSFORMING OUR PEOPL	E TO BE READY FOR THE GLOBAL CH	ANGES		
Human Management and Retaining Employees	Well-Being at Work & Work-Life Balance	3/5/8 /17	6.4.3/ 6.4.4/6.4.5	356
Promote Staff Training and Education	SMART People	4/9/17	6.4.7	366

12 TOPICS HAVE RESULTED FROM THE 18 MATERIALITY ISSUES | 102-44 | 102-47 | Clause 7.3.4 |

From the Materiality Assessment, that we ever had prioritized and selected the 11 significant material issues in "Very High" quadrant for reporting in the SD Report 2018. And then in 2019, we have expanded the scope of selected significant material issues to be reported in this year in order to cover furthermore the "High-Very High" quadrant also, that there are 18 significant material issues into 12 topics of 5 categories for SD Report 2019.

Significa	int Topics	Innovation Leader	Eco-efficiency Operations	Safety Awareness	Strong Corp. Governance	Value for the Future
1	Foster Innovation Culture	7	Give Re	espect, E	arn Res	pect
2	Responding to Road Safety Issues	8	Ethics i	s everyo	ne's Bus	siness
3	Towards the Circular Economy	9	Valuable Trusted Partners			
4	Save the World	10	Good C	itizens		
5	Safety is in Group's DNA	11	Well-Be Work-Li	•		
6	Most Trusted Asphalt Products & Services	12	SMART	People		

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2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 95 |

Governme Agencies & Public

MATERIALITY ISSUES & STAKEHOLDER MANAGEMENT

The company aims to build relationships with stakeholders that can cover important issues and will continuously monitor the needs of the stakeholders to get the depth information of their real needs. This will be an important part of the development of the company's strategy, that we will get the common important issues for both the stakeholders and the company by maintaining a balanced plan for action as well as creating a stable, lasting relationship.

Performance & Plan	K			—— Targ	et ——		\longrightarrow	
Performance & Plan	2018	2019	2020	2021	2022	2023	2024	2025
Number of Business Group	1	1	1	1	2	3	4	5
Number of Coverage Country	1	1	2	4	6	8	10	11

In 2019, we aimed to work closely with all current stakeholders in Thailand and mainly focused on the high impact and high influencer stakeholders. We worked on stakeholder management within the 2018 scope by improving our relationships with our target stakeholders.

The plan for 2020 is to expand the stakeholder's territory to Malaysia; where we have refinery operations, then Vietnam and Indonesia sequentially. We also plan to introduce Sustainable Development to other businesses within Tipco Asphalt Group which we will start with Construction and Marine Group. We expected to complete all business groups and all subsidiaries within year 2025.

The details involve the data collecting systematically identifying stakeholders; analyzing the needs and expectations; and planning and implementing various tasks to engage with them. Finally, we confirmed the material issues from 2018 by selected stakeholder groups.

Performance compared to the target

In 2019, we developed stakeholder relationship and got the performance as shown in pp. 85, which expressed that all focused stakeholders satisfied with the performance. We will improve and develop the KPIs in next report for helping team to improve for tight relationship with stakeholders in order to understand the needs and respond accordingly.



No impact, very little impact

3.01- 4.00

Very little impact medium impact 4.01- 4.75

Medium impact, high impact A 76

High impact, very high impact

Energy Usage efficiency Compliance with relevant environmental requirements **Towards the Circular Economy** Significant spills & waste management The use of resources and raw materials significantly Safety is in Tipco Asphalt Group's DNA Establishing safety rules and regulations Customer health and safety Employee health and safety Most trusted asphalt products & services Quality and responsibility for products and services Respecting the rights of the community Gives respect, earns respect Ethics is everyone's business Fair business practices Good corporate governance transparent and against corruption Valuable Trusted Partner Developing suppliers to be reliable business partners **Good Citizens** Participation and community development Well-Being at work & work-life balance Human Capital management and retaining employees **SMART People** Promote staff training and education

Employees & Families

Company Directors Customer

Road Use

Priorities of Materiality Issues by Stakeholders

expand for various communities

Infrastructure

Climate Change

Materiality Issue

Creating innovation and promoting the development of National

Developing safe transportation networks and reducing costs to

Materiality Topic

Foster Innovation Culture

Save the World

Responding to Road Safety Issues

SUSTAINABLE DEVELOPMENT



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2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 99 |

SUSTAINABLE DEVELOPMENT APPROACH | 103-2 | Clause 7.4 |



efficient delivery of innovative solutions for sustainable living of all societies.

Since 2018, sustainable Development has played an important role upon driving TIPCO Asphalt Group's business direction. Since then, our Group not only has experienced rapid growth of financial performance growth but also has developed the organization across all three key pillars; economic, social and environment while taking into consideration on operational excellence and environmental concerns throughout work operations including realization of potential impacts on communities/society.

Since 2017, Tipco Asphalt's strategy has moved towards on sustainability with the "Creating Shared Value - CSV" Framework. We are committed to delivering better business solutions that help solving social problems through proactive development of new products and markets that contribute to improved organization and society at large.

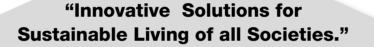
Successful implementation of the Sustainable Development policy focuses on constant monitoring and evaluation of the Group's efficient operations across the economy society and environmental aspects. This requires a set of measurable indicators which serve as important information in determining continuous and sustainable organizational development journey. The Group is confident that the policy will be fully implemented and abided by employees and executives at all levels, both at the TIPCO Asphalt company including all affiliates.

Dimension	Creating Shared Value (CSV)	Sustainable Development Strategy
ECONOMIC	Re-conceiving needs, Products & Customers	INNOVATION LEADER
ENVIRONMENT	Redefining productivity in the value chain	ECO-EFFICIENCY OPERATIONS
SOCIAL	Enabling local cluster development	SAFETY AWARENESS

Embedded Sustainability in Our Culture for moving forwarding to be a SUSTAINABLE ORGANIZATION

Strategies formulated to drive sustainable development are fully consistent inconsistent with the Group's major goal to become Innovation Leader, and to ensure sustainable business growth. The Group emphasizes business management to ensure most efficient competitive edges with minimal impacts to the environment (eco-efficient operations) in order to achieve resource and environment management as well as community safety awareness. We focus on participation upon community development, promotion of sustainable society through good welfare and safety, along with developments in line with constantly-changing, external/internal factors.

In addition to aforementioned Sustainable Development strategies, the Group implements good corporate governance principle upon our business conducts, with focus on transparency and anti-corruption practices while consistently promoting and developing our valuable human capitals for the Group and the society.





INNOVATION

LEADER



SAFETY
AWARENESS
Promote local
community members
upon skill development/
knowledge training
on 'safety' as well as
healthcare for better
quality of life

Safety

Strengthen Good Corporate Governance Transparency

Building Future Value on People & Community Development

The Group recently revisited our Mission/Vision under new 5-year strategic plan (Vision 2025) and fully integrated the concept of sustainable development as part of the corporate strategy including action plan for implementations. This hence allows sustainable development to explicitly become part of corporate strategy, encouraging mutual cooperation within the Group. This direction becomes policy from the top management to all staff to abide, to raise their awareness upon their works and common objectives, and to further communicate to external parties.

We already brought you how we came-up with the CSV Strategy and we addressed in our Sustainability Report 2018/2019. If you would like to learn more about our fundamental concept, please go via the QR Code



Management Approach

principles of sustainable development.

EMBEDDING SUSTAINABILITY | 102-15 | Clause 6.2.3 and 7.4.2 |

The 3 "Sustainable Development" Strategic Initiatives

To make the company having the ability to grow and develop business competitiveness, with a viewpoint in many aspects that are not only financial results. Therefore, the company needs to have coverage on operations that focus

and create value in the economic, social and environment in accordance with the

INNOVATION ECO-

Constantly improve production process to achieve maximum efficiency, with 'save' on ecosystem of the community

Operational Eco-efficiency

Low Carbon Emission

Supply Chain

Energy Saving

Lower Production Cost

OPERATIONS

training on 'safety' as well as

EFFICIENCY AWARENESS

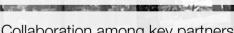
Promote local community members upon skill development/knowledge healthcare for better quality of life

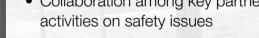
Community Safety & Security





 Demonstration and Example for The Road Safety Issues





creation activities.

 Innovative Products & Technology Product Responsibility

Innovation on asphalt products

and services, with road surface

paving technologies which are

Product Quality

'safe and save'

- Rapidly Transforming Technology
- Solutions & Accessibility
- Initiate & develop new (green) products ahead of competitors for travel safe & construction saving.
- Explore new businesses for example, road furniture & related businesses via innovation
- Provide training to employees to raise their awareness on eco-efficiency process according to international Standards.
- Encourage suppliers to apply the same strategy
- Collaboration among key partners
- Improve community life quality on safety and health.

Defined

Knowledge sharing and co-value



ECONOMIC

ENVIRONMENT

SOCIAL

Eco-Efficiency Operations focuses on maximizing operational efficiency

through operation/production process improvements while giving top priority on ecosystem and low carbon emission.

Safety Awareness is strategic initiative designed to promote skill development and knowledge training on public safety and security for local communities.

These 3 sustainable development strategic initiatives will be implemented and bombarded into our normal work processes to ensure sustainable development within organization.



The sustainability development goal (S6) leads to further development of strategic initiatives for action plan implementations. Using the Group' SD commitment as quideline, Vision 2025 workshop participants brainstormed and crystalized the ideas into 3 Sustainable Development strategic initiatives for the Group that corresponds to economic, social and environmental pillars.

Innovation Leader explores new asphalt and other asphalt-related businesses, with responsibility to the social and environment aspects.



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2019 SUSTAINABILITY INITIATIVE HIGHLIGHTS | 102-15 | Clause 6.2.3 and 7.4.3 |



Year 2019 marked another great milestone for our sustainability development practices. With our 3 SD strategic initiatives combined with strong corporate governance principle and value for the future foundations, we achieved great progresses as evidenced through lead matrices and targets listed the table below.

delivering the best sustainability business performance.

Sustainability Topic	Innovation Leader 9 MOLISTRY INNOVATION AND INFRASTRUCTURE	Eco-Efficiency Operations 12 RESPONSERE CONSUMPTION AND PRODUCTION COO TO THE PROPERTY OF TH	Safety Awareness 3 GOOD HEALTH AND WELL-BEING AND WELL-BEING AND COMMUNITIES	Strong Corporate Governance Transparency 16 PEACE JUSTICE AND STRONG INSTITUTIONS	Value for the Future 17 PARTINERSHIPS FOR THE GOALS
Objective	Instill Corporate Innovation Culture	Reduction of GHG Emission Intensity	Reduce Severe Injury Frequency Rate	Enhance Good Corporate Governance in Organization	Attract, Develop & Retain Valued Employees
KPIs	Sales Growth, Process Improvement Rate from Innovation projects	Reduction of GHG Emission Intensity > 4%	Severe Operation Accident FR < 1.84 Severe Truck Accident FR < 0.34	To be par or above average in term of Corporate governance assessment	Resignation Rate (> P4) Number of hours in Training & Development
Performance 2019	Sales Growth for ULA Para AC increased 22 %	GHG Emission Intensity = 0.038 T.CO2-e/Ton Production Reduction = 7.6%* (*Base Year 2018)	Severe Operation Accident FR < 1.69 Severe Truck Accident FR < 0.00	CGR: 5 stars AGM checklist: 97%	Resignation Rate : 9.66% Training hour : 50.7 hour / person / year
Performance 2018	92,120 Tons*	GHG Emission Intensity = 0.041 T. CO2-e/Ton Production	Severe Operation Accident FR = 0.00 Severe Truck Accident FR = 0.20	CGR: 5 stars AGM checklist: 98%	Resignation Rate: 10% Training hour: 42.9 h/p/y
* Based on sales volumes of 3 Innovative products including ULA Para AC	Sales Growth generated from Innovations > 25%	GHG Emission Intensityare cover to Scope 1,2 & 3 Reduction > 20% (*Base Year 2018)	ZERO Fatality and Severe Operation & Truck Accident	To be par or above average in term of Corporate Governance Assessment	Each employee participates in one or more innovation project each year

ECONOMIC

The nation's infrastructure developments and mutual benefits shared to all

We are one of the world's leading companies with great expertise on asphalt and road construction services. With our innovations and business model, we greatly contribute to not only infrastructure developments in Thailand and countries where we operate, but also mutual benefits shared to all related stakeholders in sustainable manner.

Climate change is the one of top risks at both global and local level. Since 2015 we focused on carbon footprint reduction and implemented the GHG Management by GHG Protocol in 2018. In addition, as responsible consumer, we focus on natural resource.

stakeholders.

ENVIRONMENT

We live on the same planet, so we must respect and care of the nature the same way we love our home.



SOCIAL

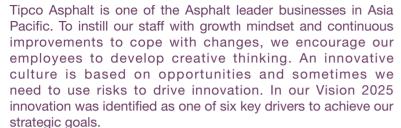
8,970 residences in local communities benefited from our **CSR initiatives in 2019**

Public safety initiative has been executed through series of CSR activities such as CPR training, patching potholes for travel safety, knowledge sharing of traffic rules/laws for a good driver, alcohol testing in-out from factory and digital platform for drive warning system. All these CSR programs are conducted with external parties, with more than 8,970 community members benefitted from these projects, accordingly.

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Foster Innovative Culture





Ш

Innovation management encourages staff to experiment on new ideas with continuous improvements.

Short-term actions Plans: Key focus is on increasing staff engagement on annual innovation contest (closed innovation). We also try to combine open and collaboration innovation to synergize with our internal ones. We take "Innovative Culture" seriously, with establishment of a dedicated team to take responsibility on innovation activities. With our aim to achieve "Innovation Beyond Product" imitative, we need to revise workplace environment to accommodate innovation ideas. In addition, we constantly introduce and implement modern technology to accommodate our customer's needs.

Long-term actions: Our future new products and services developments would be based on eco-innovative approach while we can achieve green innovations that ultimately help reduce energy consumption and costs. We also allocate budgets for executing innovation ideas into commercially viable businesses while in the long-run, we aim to expand our scopes of ecosystem.

Embed **Safety** in the Group's **DNA**

Health and safety have been our top priorities: we aim to achieve zero-harm which focuses on five areas; namely, Safety Workplace and Behavior, System and Processes, Road Safety, Safety Partnership and Safety Culture.

Our employees at all levels corporate in our health and safety initiatives focusing on the road and workplace safety. We plan to have an audit program measures our ability to implement our standards and ensure effective management systems across the Group.

Short-term actions:

Accident prevention via Risk Management approach while promoting Risk-based Thinking through safety training to enhance the Safety Awareness. In addition, systematic operational controls are also fully implemented. Behavior-based Safety will be applied as effective safety tool to reduce risky behaviors that may cause accidents and injuries.

Long-term actions:

Instill World Class Safety Culture within the organization by encouraging all level of employee to be Safety Leaders. Provide safety training courses with recognition program to raise Safety Psychology, and improve Safety Management System for consistency and sustainability.

(63)

Move towards the Circular Economy

Eco-efficiency and Circular Economy are considered main principals that could create balances between economic growth and environmental impact reduction for increasing competitive advantage and sustainable development.

Key aspects of Eco-efficiency and Circular Economy that we focus are; for instance, reduction of energy and material intensity of goods and services, improvement of reuse and recycle capability, control and reduce emissions, and maximize renewal resource usage.



Ethics is everyone's Business

Good corporate ethics has been recognized as one of the key organization pillars which every employees must practice and follow ethical values. Good corporate, and employee, ethics can be measured by how well employees protect their company's ethical standards.

Anti-corruption and human rights are the key focuses of the Group's ethics. These will confirm our strong commitments to be a good corporate citizen with our 'license to operate' and 'licenses to grow' acknowledged from the society. Both anti-corruption and human rights are assessed as medium risks that the Group implements risk controls, with regular follow-ups and monitoring.

5 SUSTAINABLE DEVELOPMENT PILLARS

Since 2018, we formulated new sustainability strategies and communicated the initiatives across all stakeholders. In 2019, we reviewed these initiatives and action plans, following a set of **5 SD 'pillars' (innovation** (economic), **eco-efficiency** (environment), **safety** (community), **human resource** and **institutional**. These pillars focus on different sustainable development aspects including integration of all pillars while we would need to develop a set of measurable and internationally accepted indicators on other aspects of ESG.

The Group also needs to educate and communicate sustainability framework to all staff while implementing this concept across the Group's operations.

Short-term action plans:

Reduce GHG Emissions Intensity through innovative solutions to improve the efficiency pertaining to production and products distribution processes.

Reduce Industrial Waste Disposal by minimizing wastes generated at the origin.

Promote multiple-use of materials and avoid the single-use materials, and seek values from waste recycling.

Reduce Municipal Water Resource Usage by providing the surface-water reservoirs internal plant.

Long-term action plans:

Minimize GHG Emissions Intensity through innovations and technology for absorption or sequestration of GHGs from the atmosphere,

Switch toward Renewal Energy; e.g., bio-fuel and solar power.

Improve waste water treatment system for Recycled Water.

Short-term action plans:

Inform and test all employees on the Code of **Ethics** to ensure their understanding and acknowledgement (each employee must pass a test with minimum score of 75% and receive a Certificate which is valid for one year and re-validation is required on annual basis). All employees must adhere to Group's compliance principle guidelines as their duties and responsibilities.

As for **human rights**, we revisit measurements implemented to prevent human rights violations across our value chain.

The Group also aims to raise awareness and educate our executives and employees on conforming to principles and policies of good corporate governance, business code of ethics, anti-corruption and fair business practice.

Long-term action plans:

Embed Governance & Compliance as core values for our executives and employees.



As our employee diversity has grown along with our business expansion in the Asia-pacific region, we therefore develop work environment that is well-balanced, brings mutual understanding, promotes collaboration and joy.

Short-term actions:

Employee-Centric: Tipco Asphalt provides great work environment that promotes professional growth for our employees with job safety. This follows "attracting great talents" and "creating a friendly workplace" core concepts...

Long-term actions:

Instill staff with **growth mindset** and continuous improvement in responding to changes.

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EMBEDDING SUSTAINABILITY: SOCIAL ISSUES, ISO 26000, SD STRATEGIES, SDGs AND THE TIPCO ASPHALT GROUP'S VALUE CREATION FLOW



dium-to-long-term perspective	in our innovation activities.				Issues / Ir	nitiatives in our Valu	e Chain			
Sustainability Strategy	Social Issues	ISO 26000 Core Sujects	Page in SD	PROCURE	REFINE	PRODUCE	DISTRIBUTE	PROVIDE	SERVICE	APPLY
INNOVATION LEADER	Infrastructure Issues (Road Condition)	ORGANIZATIONAL GOVERNANCE	125	ľ	•	- Creating Innovation	and Promoting the De	evelopment of Nationa ing Safe Transportation to Expand for Vario	Networks and Reducir	ng Costs ———
ECO-EFFICIENCY OPERATIONS	 Waste Mangement, Energy & Raw Material Usage Efficiency Operations Environmental Responsibility 	THE ENVIRONMENT	167			ant Sills & Waste Mana Energy Usage Efficiend		· · · · · · · · · · · · · · · · · · ·		Spills & Waste Energy Efficient Raw Materials
SAFETY AWARENESS	Safety & Health Issues	HEALTH AND SAFETY AT WORK & PROTECTING CONSUMMER'S HEALTH & SAFETY	191	-		En	Establishing Safety ployees Health & Safe	Rules & Regulations -	Customers I	Health & Safety
GOOD CORPORATE GOVERNANCE TRANSPARENCY	Mangement Responsibility	HUMAN RIGHTS FAIR OPPERATING CONSUMER ISSUES COMMUNITY INVOLVENMENT & DEVELOPMENT	215		•	F	Participation and	3		Developing Suppliers
ALUE TO THE FUTURE	Responsible to Employees	LABOUR PRACTICES	351	-		·	l Management and Re			

Social Issues, Sustainable Development Strategies and ISO 26000 Relevant Issues

We exhibit the linkage between international Standards, GRI, UN SDGs and ISO 26000, by using the GRI framework in conjunction with the new ISO guidance, we have a practical set of tools to measure and report on the social responsibility policies and practices. The Group applied ISO26000: 2010 as a guideline for integrating social responsibility into the organization since 2012 and was assessed by MASCI.

Innovation policy can also be linked to the three pillars of sustainable development namely economic growth, social safety and environmental protection.

Eco-Efficiency is one of the main tools to promote sustainable development as it is based on the concept of creating more goods and services while using fewer resources and creating less waste and pollution. The heart of strategy is to educate our employees to have alignment

Safety and health at work at the heart of Sustainable Development Goals as well as the responsibility for local communities to ensure healthy lives and promote well-being for all.

"Good Corporate Governance" is essentially built on three precedents — economic progress, social development and environmental improvements.

Good governance ultimately fosters sustainability, creates sustainable values and helps companies achieve the values.

Our approach to make Sustainability Every Employee's Responsibility as sustainability starts with the **people** and unites them to create a better work culture, work-life balance then contributions to customers and the world.

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TIPCO ASPHALT MATERIAL ISSUES AND THE INITIATIVES, ISO, GRI, SDGs RELATED

The Tipco Asphalt Group, working from a foundation of fostering innovation culture, contributes to better living and cultural progress as a comprehensive asphalt company making use of, and recycling, renewable asphalt resources.

Creating new innovative products and expanding our services as a comprehensive asphalt company, we manage and operate with our passion to make a better world.

We, therefore, have a significant impact on the local areas and people who work there. Coexistence with these communities, as well as reducing environmental

impact and securing the safety and health of our local employees, therefore, are critical to our own continued existence.

Moreover, the opinions of our stakeholders serve as valuable opportunities to grasp issues that are important for coexisting and growing with society in a sustainable way. Therefore, the materiality items given above are of particular importance among our initiatives addressing social issues in our value chain (see pages 76-77)

We identify materiality items as described in the below table.

Materiality Issues among Initiatives in Our Value Chain (Addressed on page 76-77)

SD Strategy	Social Issue	ISO 26000	Add	Materiality (GRI Ref.)	GRI No.	SDG	External Impacts	Page
Innovation Leader			6.6.6	Creating Innovation and Promoting the Development of National Infrastructure	201	SDG 9, SDG 12	Society	125-153
	Condition)			Developing Safe Transportation Networks and Reducing Costs to Expand for Various Communities	201	SDG 13]	155-165
Eco-	Waste	The Environment	6.5.3	Climate Change	305	SDG 12		169-175
	Management • Energy &		6.5.4	Energy Usage Efficiency	302	SDG 12	Production Sites,	169-175
Efficiency Operations • Ene Raw usa • Effic Ope Env Res Safety Awareness Safety Issues	Raw Material usage	erial		Compliance with Relevant environmental requirement	307	SDG 13	People living near company's	169-175
	• Efficiency		6.5.5	The use of resources and raw materials significantly	303	SDG 13	operations	176-187
	Operations Environmental Responsibility		7.6.3	Significant Spills & Waste Management	306	SDG 13		176-187
	Safety & Health	Health & Safety at	6.4.6	Establishing Safety Rules and Regulations	403, 417	SDG 3	Customers &	192-211
Awareness	reness Issues work & protect	work & protecting consumer' Health &	6.7.4	Customer Health and Safety	416, 418	SDG 3	Employees	192-211
		Safety	6.4.6	Employee Health and Safety	403	SDG 3		192-211
Good Corporate	Management Responsibility	Human Rights Fair Operating	6.7.6	Quality and Responsibility for Products & Services	102-43	SDG 8 SDG 9		216-243
Governance Transparency	& Responsibility to Community	Consumer Issues Community	6.3.9	Respecting the Rights of the Community	413, 405, 412	SDG 16	0	244-275
Iransparency	to Community	Involvement &	6.6.5	Fair Business Practices	102-15, 102-17	SDG 16	Community and Supplier,	276-288
		Development	6.6.3	Good Corporate Governance Transparent and against corruption	102-17, 102-18, 102-28, 102-3	SDG 16	Sub-contractors	276-288
			6.6.6	Developing Suppliers to be a Reliable Business Partner	204, 308, 414	SDG 17		306-317
			6.8.3	Participation and Community Development	413	SDG 17		318-349
Value to the	Responsibility	Labour Practices	6.4.3	Human Management and Retaining Employees	401, 402, 407	SDG 3	Employees	351-365
Future	to Employees		6.4.7	Promote Staff Training and Education	404	SDG 4	Employees	366-379

Specification of a sustainability management framework is a key mechanism for driving internal management at the policy and managerial levels leading to practice and project operations consistent with specified frameworks such as policies on sustainable development, human rights, tax, human resource management, organization happiness promotion, anti-corruption and practice guidelines, procurement, organization risk management, ethics and practice guidelines for trading partners, environmental impact, energy and greenhouse gas, investment in clean energy businesses, creation of environmentally-friendly manufacturing processes that are safe for workers, application of standards and participation in communities. This sustainability management framework is used to cover every company in which QTC has a shareholding of more than 50 percent.

The Company will foster beliefs and build understanding for every employee in line with the sustainability equation that doing good work with quality, accuracy and responsibility will build satisfaction for all stakeholders, build strength and sustainability for employees and the organization. The Company has the following sustainability framework and the company will foster beliefs and build understanding for every employee in line with the sustainability equation that doing good work with quality, accuracy and responsibility will build satisfaction for all stakeholders, build strength and sustainability for employees and the organization. The company has the following sustainability framework and aim for sustainability vision of "Innovative Solutions for Sustainable Living of All Societies".

SUSTAINABILITY INITIATIVES

WE PROMISE: INNOVATION for SAVE & SAFE







INNOVATIVE SOLUTIONS FOR SUSTAINABLE LIVING
OF ALL SOCIETIES

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 110 |

MATERIALITY ISSUES CONCERNING WITH KEY STAKEHOLDERS | 102-44 | 103-1 | Clause 7.3.2 |

		Materiality Issues					
Stakeholder	Expectation	Innovation	Eco-Efficiency	Safety	Corp. Governance	Future Value	
Company Directors	Legalization and correct in accordance with the code of ethics, transparency	Creating innovation & promoting the development of National	Energy usage efficiency / The use of resources and new materials	Employees Health & Safety	Fair business practices / Labour Practices	Human management & retaining staff	
Employees	Good quality of life, job security, fair compensation and Human Rights	infrastructure	·			Promoting staff training & education	
Customers	Best quality goods and services at reasonable prices, Privacy and Security, and Fair Operating Practices		Development safe transportation networks & reducing cost /	Customers Health & Safety	Quality & responsible for products & services		
Government Agencies	Follows all laws & regulations, Anti-corruption and bribery		Compliance with relevant environmental requirements	Establishing Safety Rules & Regulations	Good corporate governance transparency & anti-corruption		
Communities/ Societies	Pollution-free environment		Significant spills & waste / Climate change		Respecting Rights of community /Participate & Community Development		
Suppliers/ Partners	Fair trade and prompt in-term payments, Human Rights				Fair business practices / Developing suppliers to be a reliable business partners		
Shareholders / Investors	Financial stability, steady flow of income, possible capital growth and sustainable business				Good corporate governance transparency & anti-corruption		

LIST OF COMPANIES WITHIN THE REPORT 2019 | 102-46 | 103-1 | Clause 7.3.2 |

	Company/Business Economic			Environment	Social Performance			
	Company/Business	Performance	Waste	Energy	Emissions	Water	Safety	People
tic ss	Tipco Asphalt PCL.							
Domestic Business	Thai Bitumen Co., Ltd.							
Bu	Raycol Asphalt Co., Ltd							
SS	Tipco Marinetime Co., Ltd							
sine	TASCO Shipping Co., Ltd.							
Bu	Alpha Marinetime Co., Ltd.							
Marine	Delta Shipping Co., Ltd							
Σ	Bitumen Marine Co., Ltd							
is-	Thanomwong Service Co., Ltd							
Cons- truction	Thai Slurry Seal Co., Ltd.							

MATERIALITY ASSESSMENT & BOUNDARY

I 102-46 I 103-1 I Clause 7.3.2 I

Marine Business	Construction Group	Road User	Customer	Government Agencies	Supplier Community	Community	Shareholder	Press Media	Competitor
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Торіс	Issue	Internal Stk.		Internal Stk. External Stakeholder								
1) Foster Innovation Culture	- Creating innovation & promoting the development of National Infrastructure			•			•	•	•			
2) Responding to Road Safety Issues	- Developing safe transportation networks and reducing costs, to expand to various communities											
3) Save the World	 Climate Change Energy and Water usage efficiency Conservation of Biodiversity Emissions Management Compliance with Relevant Environmental Requirements 											
4) Towards the Circular Economy	- Effluents, Waste, and Pollution Management - Zero Waste to Landfill (Zero Waste Management) - Water Management - The use of Resources and Raw Materials Significantly (Reduce, Reuse and Recycle)											
5) SAFETY is in Group's DNA	Establishing Safety Rules and RegulationsCustomer Health and SafetyEmployee Health and Safety			•								
6) Most Trusted Asphalt Products & Services	 Customer Satisfactions Responsible Marketing Communication Quality and responsible for product and services 											
7) Give Respect, Earn Respect	- Employee: Human Rights Assessment- Customer: Human Rights Assessment- Community: Human Rights Assessment- Children: Human Rights Assessment		•	•				•			•	•
8) Ethics is Everyone's Business	- Fair Business Practices - Good corporate Governance Transparent and Against Corruption				•			•		•	•	
9) Valuable Trusted Partners	- Developing suppliers to be a reliable business partners,						•	•				
10) Being Good Citizens	- Participation and Community Development											
11) Well-Being at Work & Work life balance	- Human Management and Retaining Employees			•								
12) SMART People	- Promote staff training and education											

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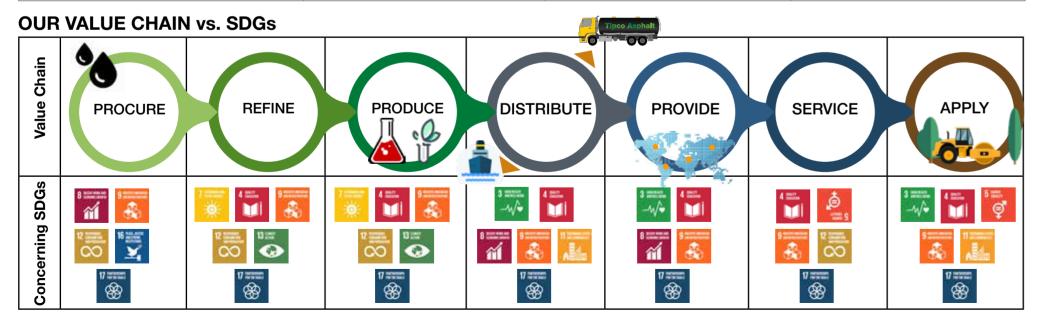
INTEGRATING SUSTAINABILITY STRATEGY AND SDGs

We strive for delivering value added for all stakeholders, in line with the United Nations Sustainable Development Goals (SDG) guideline. In 2018, we committed to 5 SDG; namely, SDG 3 (Good Health & Well Being), SDG 9 (Innovation), SDG 12 (Responsible consumption and production), SDG 11 Sustainable cities & Communities), and SDG 17 (Partnership for the goals).

In 2019, we extended our commitment to include other SDGs by adding SDG4, Quality Education, SDG 8, Decent work & Economic Growth, SDG 13, Climate Change, and SDG 16, Strong Institutions, hence totaling 9 SDGs under our SD commitments.

We mapped SDGs and sustainability strategies across our value chain and selected only those that were aligned and supported relevant issues. Please see below for table summary of corporate roles and impact to key stakeholders.

Tipco Asphalt Sustainability		Impact on Employee	Impact on Community	Impact on the Environment
8	Role as an Employee	To understand, create ownership and take actions on sustainability.	To volunteer on economic, social and environmental activities with communities nearby our operations	To engage employees to go GREEN that will lead to a more efficient processes that minimize GHG and waste.
TIPCO	Role as a Global Asphalt Solutions	To create sustainability-linked performance targets, compensation and benefits, training and education,	To create projects that utilize asphalt to solve community issues; for instance, patching pothole to prevent road accidents.	To develop/innovate products/processes which create no or low environmental impacts
<u> </u>	Role as a Corporate Citizens	To motivate employee engagement and embed sustainability into company culture.	To develop projects that improve communities' life quality	To focus on economic activities that do not destroy environment and reversible.



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SUSTAINABILITY ISSUES VS. UN SDGs

Eco-efficiency Operations

orp.	Value for the	
ince	Future	

Topic	Issue	Related to UN SDGs	Page
1) Foster Innovation Culture	- Creating innovation & promoting the development of National Infrastructure	4 mile 8 mile mile 19 mile mile 12 mile mile 17 mile mile 12 mile mile 17 mile mile 18	126
2) Responding to Road Safety Issues	-Developing safe transportation networks and reducing costs, to expand to various communities	3 minutes 4 miles 4 miles 4 miles White the second of	155
3) Save the World	 Climate Change Conservation of Biodiversity Energy and Water usage efficiency Emissions Management Compliance with Relevant Environmental Requirements 	12 Marie 10	169
4) Towards the Circular Economy	 Effluents, Waste, and Pollution Management Zero Waste to Landfill (Zero Waste Management) Water Management The use of Resources and Raw Materials Significantly (Reduce, Reuse and Recycle) 	4 1000	178
5) SAFETY is in Group's DNA	- Establishing Safety Rules and Regulations- Customer Health and Safety- Employee Health and Safety	3 man. 4 mm. 17 when 8	192
6) Most Trusted Asphalt Products & Services	- Customer Satisfactions Responsible Marketing Communication - Quality and responsible for product and services	3 mm. 4 mm. 8 mm. 17 mm. 17 mm. 17 mm. 17 mm. 18 mm. 18 mm. 18 mm. 19 m	216
7) Give Respect, Earn Respect	- Employee: Human Rights Assessment- Customer: Human Rights Assessment- Community: Human Rights Assessment- Children: Human Rights Assessment	5 mm. (15 mm.mm) (17 mm.mm) (18 m	244
8) Ethics is Everyone's Business	- Fair Business Practices - Good corporate Governance Transparency and Anti- Corruption	16 man 17 words	276
9) Valuable Trusted Partners	- Developing suppliers to be a reliable business partners,	8 Marrier	306
10) Being Good Citizens	- Participation in Community Development	3 manu. 9 manu. 11 manu. 17 manu. 42 manu. 42 manu. 42 manu. 42 manu. 42 manu. 43 ma	318
11) Well-Being at Work & Work life balance	- Human Management and Retaining Employees	3 minute.	356
12) SMART People	- Promote staff training and Education	4 min 9 min 17 with 18 18 18 18 18 18 18 18 18 18 18 18 18	366

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation We launched the Closed Innovation Contest for

We are in the process of launching an Open

We comply with health & safety regulations to ensure

We aim to manage all resources efficiently: i.e.,

optimizing operation processes that minimize

raw materials, energy and water. These include

great health & safety of community/society

employees within Tipco Asphalt Group

Innovation Contest with local universities

Collaboration on Innovation with partners

SDG 11: Make cities and human settlements inclusive, safe.

SDG 12: Ensure sustainable consumption and production

resilient and sustainable

environmental impacts

CONTRIBUTING TO SUSTAINABLE DEVELOPMENT GOALS (SDGs)



achieving 9 SDGs in 2019

Tipco Asphalt Group begins our SD process by mapping the 17 UNSDGs with our material topics and business strategies. We then selected and focused on 9 goals that are most relevant to our sustainability strategic initiatives for

To deliver sustainable values and "INNOVATION" in line with business ethics. we launched sustainable initiative projects across our value chain.

Our performance indices against these SDGs are highlighted throughout this report.

SDG 3: Ensure healthy & Safety lives and promote well-being for all.



- Training CPR & AED practices
- Promote patching potholes for the road safety of community
- Annual medical/physical checkup to ensure great health of employees

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



- We sponsor road safety edutainment activities for youths across communities nearby our operations.
- We enhance employees' competency through combination of multiple approaches

SDG 8: Promote inclusive and sustainable economic growth, productive employments and decent works for all



- Our annual Tipco Asphalt Open House event is conducted as channel for us to meet local students who may have become potential future candidates for our staff in the future
- Local employment is our priority, to support communities

2019 Performance I 2030 Goa

2019 Performance I 2030 Goal

2019 Performance I 2030 Goa

students

CPR & AED Training Number of employee got training

Tipco Asphalt

Open-House event

(Implemented)

(Commercialized)

"Open House"

to overall employments

Number of student attending

Local Employment

Proportion of Local Employment

Closed Innovation Contest

Proportion of employee engagement

Number of Green innovation projects

Green Innovation Project

Collaboration Innovation

Number of Innovation projects

- **Patching Potholes** Total road length (kilometer) that we patched potholes for road safety
- Medical Care for all Proportion of employees taking physical checkups

15.8% 203 **>>** 50% **»** 120 96.23%» 100%

1,500

13% » 80%

34% » 50%

120

80%

13 CLIMATE

Road Safety for Kids Number of youths attending (11 Schools)

QUALITY EDUCATION

Promote training on "Total Performance promotors

Management (TPM)

 \bigcirc

17 PARTNERSHIPS FOR THE GOALS

2019 Performance I 2030 Goal

Number of employee attended the training

120 Operations' employees

50

Schools

2019 Performance I 2030 Go

- Significant product spillage during transportation Number of case of significant product spills
- Incident of non-compliance health & safety impact

Number of cases from products & services

>> Zero 0 » Zero

2019 Performance I 2030 Go

- Industrial waste disposal 4.76 Waste in Tonnage
- Wastewater discharge
- Reduce total water withdraw

to landfill

Promote and educate

partners on our CSR

Number of CSR/CSV partners

Expand our boundary

for CSR/CSV in Thailand

Number of provinces we conduct our

Employee engagement rate since 2018

Customer Satisfaction

initiatives

CSR/CSV activities

Proportion of water withdraw

2019 Performance I 2030 Goa

22

partners

12% >> 50%

» Zero

50%

80%

(33 partners

- Zero

We move towards in-process recycling and also aim for upcycling our wastes in the future.

pattern

Committed to energy saving and carbon reduction



 We aim to achieve zero waste in landfill, reduce our consumption of chemicals while eliminating hazardous materials.

SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

- We maintain highest records on good corporate governance transparencies.
- external stakeholders.

SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

partners network.

2019 Performance I 2030 Goa

Rated by Stock Exchange of Thailand

- Reduce GHG 7.58% **»** 20% Emission Intensity
- Reduce the Energy 16.10% **»** 40% Energy consumption
- **Environmental** Complaints 0.00% » Zero & non-compliance issues with laws & regulations
- AGM Check List Rated by Thai Investors Association THSI & SET Award

14 LIFE BELOW WATER

- Corp. Governance Report CGR Rated by Thai Institute of Directors Association (IOD) **Stars**
 - - Rising » Best
 - 97% » > 98%

50 Stars

- - Award
- - CSR/CSV Project Satisfaction

89% » 97%

97%

province (48 locations

CSR/CSV Satisfaction

Customer Satisfaction rate from products 87%



We create great journey experiences for internal &



We expand our CSR/CSV projects through our

CORPORATE SUSTAINABLE DEVELOPMENT STRATEGIES 2020-2030 AIMS TO SUPPORT 14 SDGs

Driving School' Tipco Aspha Social Impact

Economic &

Excellence

Social Impact

Training Center

• Truck Driver

• CPR Training



Road Safety



Premix Expert



Economic & Social Impact

 Special family income jobs for women



Economic & Social Impact

Reuse water

 Wastewater treated



Economic & Social Impact





Economic & Social Impact

Promoting Employment

 Local **Employment**



Open House



Social Impact

Road Safety



Save Lives



Economic & Environmental Impact

Reduce CO.



 Reduce Fuel/ Energy



Environmental & Social Impact

Sustainable **Tourism** Development Integrated Development

Bung Takreng

Project



Environmental & Environmental Social Impact Impact

Community

Nong Pakjai

Forest

TIPCO

Save the Seas. Oceans & Rivers

Clean Beach



Environmental & Social Impact

DEVELOPMENT

Good Corporate Governance

Anti-Corruption



 Good corporate Governance



 Patching **Potholes**

Economic &

Environment &

Social Impact

CSR Joint

Activity

Platform

 Road Safety for Kids

• CPR Training

3 Good Health and Well-Being



4 Quality Education



5 Gender Equality 6 Clean Water and Sanitation



7 Affordable and Clean Energy



8 Decent Work & Economic Growth



9 Industry, Innovation and Infrastructure

Economic &

Social Impact

Employees

Academic

Partners

Institutes

Sustainable Cities & Communities

Responsible Consumption & Production

13 Climate Change





14 Life Below Water 15 Life on Land



Institutions



16 Peace, Justice 17 Partnership and Strong





Innovation contributes to economic growth, innovation

leads to higher productivity, environmental innovation

can promote clean production such as eco-innovation

negatively impact carbon emissions, and positively

influence firm performance. Moreover, social innovation

increases the standard of living and provides people

with opportunities to improve their lives.

Roadmap From "License to Operate" to "License to Grow"

Currently, we are part of our communities and behave as good citizen for over years. We contribute as we show in this report in the capture of "BEING GOOD CITIZEN" p.318-349.

We move towards sustainable development within our stakeholders' ecosystem and ours, for capturing the growth potential of the developing world, we will carefully begin to engage in both traditional and new ecosystems that are addressing resource, environmental and social issues.



The employees run the organization, whether they are at entry-level, middle-level or senior-level. Their strength, their commitment and dedication, and their emotional connection with the organization cannot be judged or assessed in monetary values, which makes them invaluable as well as intangible





Corporate governance is about enabling organizations to achieve their goals, control risks and assuring compliance. Good corporate governance incorporates a set of rules that define the relationship

between stakeholders, management and the board of directors of a company and influence how the company is operating.





TIPCO



Reducing the consumption of resources, reducing the impacts on the natural environment, and increasing the product or service value



Our business may lead to the **SAFETY** issues, thus we focus on the safety workplace, safety community and safety environment as a priority.

We grow safety mind-set in our employee's DNA and foster a safety culture. We commit to provide safe work practices with full facilities, bring the feeling safe for the communities relating to the quality of community's lives and ensure the safety and well-being of anyone in the immediate area, in terms of proper waste disposal and make sure that our activities do not cause harm to the environment.

Eco-efficiency Operations

Constantly improve production process to achieve maximum efficiency, with 'save' on ecosystem of the community.

Innovation Leader

Innovations on asphalt products and services, with road surface paving technologies which are 'safe and save'.



₩

Promote local community members upon skill development/knowledge training on 'safety' as well as healthcare for better quality of life.



ENVIRONMENT

ECONOMIC

SOCIAL

OUR MATERIALITY 12 TOPICS, 18 ISSUES



SUSTAINABLE DEVELOPMENT TRANSFORMATION ROADMAP | 103-2 | Clause 7.3.2 |

3 SD STRATEGIES & 2 FOUNDATIONS

CURRENT 2019 STATE ASSESSMENT

First year introduction of innovation to employees through "Innovative Solutions Award annual contest.

Established the GHG Management

efficiency from fossil fuel usages.

Initiated the Behavior Based Safety

while strengthening operational

process.

control for products distribution

quideline to increase operation



Innovation Department

Specifically responsible to drive corporate innovation and raise

Production & Distribution

Re-design & retrofit to enhancing

Process Improvement

efficiency and capacity.

Safety Leadership

nitiated the Behavior Based

perational control for products

Safety while strengthening



Education

Development for all employees to learn and understand innovation framework & mindset

Alternative Energy

Safety Psychology

aise safety awareness across

Switching to new fuels higher

efficiency with less emission.



Engagement

GAPS

Series of activities to constantly engage employees' mindset on learning and sharing

Renewable Energy

technology for electricity

OH&S MS Integration

Seek and invest on

renewable energy

Approach



Re/Up-Skills

Re/Up-Skill innovation and re-enforce innovation ideas. Develop journey for all staff evels about innovation



GHG Management Expansion - Scope 3



Safety Corporate Citizenship

expand safety efforts across all stakeholders including employees off work time), business partners and



Community / Society

Community rights must be respected while the Group needs to educate communities about their human rights.

R&D for new eco-friendly products Consider outsource product delivery transportation.





employee development programs



Subsidiary

Standardize CG related practices across Tipco Asphalt Group



Partner

We share our key policies, rules and regulation on ESG practices to our partners to ensure full alignment



Supplier / Contractor

cross all business units

They are fully informed about ESG criteria that required for working with Tipco Asphalt Group, including acknowledging the labour rights









Identification Innovation Mindset

Identify Innovation Mindset in the Corporate Core Values



Design & Promote New Behaviors

Promote target behaviors that incorporate Innovation Mindset



Operate & Implement

Revise process and system to accommodate nnovation initiatives and implementation



Communication & Deliver Value of Innovation

Facilitate the growth of innovation momentum across the Group

FUTURE 2030

Innovation Leader

Embed Innovation in corporate culture while capitalizing or improving efficiency from corporate innovations.



Eco-efficiency Operations

Maximize operation efficiency and shift toward a circular economy.



Safety Awareness

Embed world-class safety culture, with aim for ZERO fatality and severe accident



Strong Corp. Governance Transparency

Achieve and maintain a par or above average Corporate Governance Assessment score



Value for the Future

Each employees engage in one or more innovation project each year and Tipco Asphalt **Group moves towards Innovative Culture**



2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 124 |

INNOVATION LEADER







Innovations on asphalt products and services, with road surface paving technologies which are 'safe and save'



fostering Innovation Culture













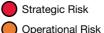
#1) Creating Innovation and Promoting the Development of National Infrastructure Materiality Issue **Report Topic Fostering Innovation Culture** Innovation is a priority: Opportunity losses, Loss of market share with competitors catching up with Impact & Risk similar or better products, services and business models Infrastructure Issues (i.e. Road Condition etc.) Social Issue **GRI Standards** ISO Standards 7=== SDG 4, SDG 8, SDG 9, SDG 12, and SDG 17 SDGs **Policy** Corporate Innovation Policy Please go to view the policy on page, 130via QR Code Scanning Stakeholder Internal: Employees **External**: Community close-by plants. Educational Institutes Objective 1.) To create innovation development processes in the organization 2.) To stimulate the alertness of employees to come up with new creative ideas 3.) To create a corporate innovative culture for the exchange of ideas, knowledge, and take action to develop it to come true 4.) To have innovations that can be used and to maximize benefits for customers and organizations HCM / Corporate Branding & CSR Department Responsible Strategy Innovation leads to the future - The number of prototype projects that can be put into practice at least 25% of all innovation works Execution Number of projects submitted increase at least 10% every year - Number of projects submitted from support functions increase by 15%

Innovative Leader

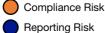










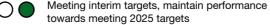


FOSTERING INNO

VATION CULTURE

Future Value 2030 2025 Target 2019 Target (interim) 2018 Performance **FY 2019 Performance** 1) Preparing for Innovation 1) Closed Innovation **Smarter Working** 00 **TIPCO ASPHALT** 1.1) Employee Engagement Rate > Culture Sustain profitable growth, being the 4.0: 10% in first year 1.1) Employee Engagement Rate 1.1) Introduction activities by 34% (235 employees from 1,280 regional leader in Asphalt business, using podcast 10 issues Embed 'Innovation' into the excluded seafarers 396) 1.2) Innovation project submission products & solutions for "trigger the ideas" corporate culture for leveraging 1.2) Innovation project submission > 50 projects our working capability and earn 1.2) Knowing Corporate 133 projects revenue or increase efficiency 1.3) Satisfaction rate **94.7** % Innovation by inviting key 1.3) Satisfaction rate > 80% from innovation programs. speaker from Mitr Phol for Upgrade infrastructure and sharing Innovation 2) Open Innovation $\bigcirc \bigcirc \bigcirc$ retrofit industries to make experience 2.1) Employee Engagement Rate > sustainable, with increased We delayed to 2020 because the 1.3) Promote OKM & TPM 10% in first year resource-use efficiency and readiness of team to have quality time greater adoption of clean and to work with academic partners 2.1) Innovation project submission 2) Promoting innovation with environmentally sound tech-> 50 projects external stakeholders nologies and operational processes with corporate 2.1) Cooperated with MTEC 2.3) Satisfaction rate > 80% taking action in accordance with and supplier to develop their respective capabilities. Ammonia Para AC 3) Collaboration Innovation $\bigcirc\bigcirc$ 3.1) Develop Premix plastic Support technology development. 2.2) Develop Super Premix 3.1) Developed "Dust Control" packaging with MTEC research, and innovation in product but delayed from product and official launch in developing communities. schedule to 2020 3.2) Develop Eco-Packaging countries, including by ensuring 3.2) Developed "CSS-1 & CRS2 a conductive policy environment 3) Improve Work Processes packaging for new customers for industrial diversification and 3.1) Improve production value addition to commodities 4) Green Innovation process of Emulsion 00 4.1) Develop Green innovation Asphalt 4.1) Green Innovation: ideas = 20 ideas > 10 projects projects 4.2) Develop Green Product/ 4.2) Green Innovation: implemented Service that implemented in **32** projects 2019 > 5 projects

Progress Tracking Legend:





Fall short of interim target for three quarters; review current practices



Missing interim target for more than one consecutive vear: review and revise targets (if necessary)

Impacts:

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 130 |

OUR AMBITION ON INNOVATION 2025 | Clause 6.1 | Clause 6.5, 6.6 and 6.8 |



fostering innovation culture for leveraging working capability

Scan here for Innovation Policy

Management Approach

The company places great emphasis upon the importance of innovation that plays a crucial role in the business. Since 2019, the company initiates the innovation development process at employee level throughout the organization. In the past, most product innovation developments were conducted from the research and development department (R&D) or results of collaboration with external parties / partners. Also included were work procedure enhancements, but these initiatives were limited to a very specific, niche functions.

After the announcement of the company's Innovation Policy in 2018, the company implemented a process to strengthen employees' innovation mindset via various activities.

These activities aim to enhance employees' participation while encouraging them to express their opinions/ideas properly.

In addition, the company recently launched **Innovative Solutions Award** contest, which greatly received participations from the employees: total 133 innovation project submissions from 320 applicants, representing 34%. With this small initiative, employees were encouraged to shift their mindset and thought process, and hence could utilize them for further development.

Consequently, the successful contest was officially included as one of the company's key annual activities to enhance the company's personnel capability development sustainably.

Closed Innovation Open Innovation Innovative Culture

CREATIVE IDEAS – INNOVATION – TEAMWORK - COLLABORATION

Innovation focuses particularly on safety, environmental preservation and road related issues.

Our management realized the importance and priority to institutionalizing "Innovation" across the organization by establishing a proper unit responsible for corporate innovation.

In late 2019 during our Strategic Formulation 2025 workshop, the set-up of "INNOVATION OFFICE" was initiated. This special unit will create an environment for innovation and cultivating our staff toward proactive thinking, technological growth and advancement. This team will also set up the "Innovation Sandbox" that will serve as a platform to explore and test the viability of new ideas in a controlled environment in terms of execution, resources and timescales.



INSTILLING AN INNOVATION CULTURE ROADMAP

Innovation Dian	2018	2019	2020	2021	2022	2023 - 2025
Innovation Plan	Motivate	Aware	Understand	Behave	Commit	Influence - Sustain
1.) Ownership & Accountability	Innovation Policy	Branding & HCM - Culture	Settle Innovation Team	Inno Team/Branding/HCM	Inno/Brand/HCM/BU Heads	Inno/Brand/HCM/BU Heads
2.) Communication / Activities	Inspiring Innovation for Tipco Asphalt	Trigger to think/Contest#1	Inspiration Stage/Contest#2	Inspiration Stage / Contest#3	Inspiration Stage / Contest#4	Inspiration Stage/Contest#5
		Innovative Solutions Award	Innovative Solutions Award	Innovative Solutions Award	Innovative Solutions Award	Innovative Solutions Award
3.) Skills / Re-Skilling / Up-Skilling	TPM Training	TPM Training	Innovation Boot Camp#1	Innovation Boot Camp#2	Innovation Boot Camp#3	Innovation Boot Camp#4
	(TPM=Total Productive Maintenance)	(TPM=Total Productive Maintenance)	Creative Thinking and Innovation Management Program	Design Thinking and Innovation for all employees	Acceleration Program	Acceleration Program
4.) Project Performance Measurement	Metric Identification	> 10% Engagement	> 50% Engagement	> 65% Engagement	> 80% Engagement Score	100% Engagement Score
5.) Implementation / Commercialization				> 10 Projects	> 15 Projects	> 20 Projects

INNOVATION MANAGEMENT: CREATING INNOVATION TOGETHER

Lead through Innovations

Business competition environment has become more intense over the years while the Group needs outstanding products & services and better processes across value chain to ensure long-term business growth and sustainable profits. In response to these challenges, we must instill innovation culture by fully integrating innovation mindset across all our operations and business models, rather than viewing innovations as just ad-hoc process.

"Our TIPCO ASPHALT INNOVATION CULTURE is harmonious combination of physical environment, social interaction and working condition that cultivate values, norms, attitudes and paradigms intended to promote developments of innovative ability, willingness to innovate and innovation potentials within the company."



INNOVATIONS TOWARDS "TIPCO ASPHALT 4.0" ROADMAP

To win in the 2020s—and beyond

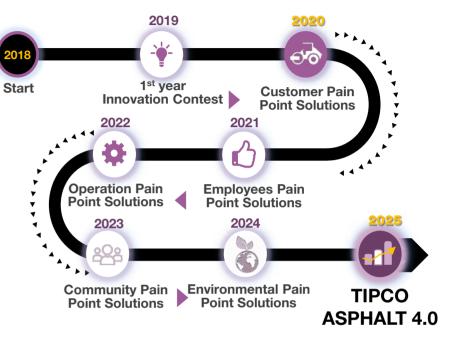
In order to survive and thrive in highly competitive business environment, the Group needs to revisit our innovation strategy; in particular, implementation of the ideas.

Our focus also needs to be more on improving E.S.G. aspects through sustainability management plan coupled with corresponding KPI target setups while taken into considerations of regulatory landscape, customer satisfaction, good corporate citizenship, and operations-efficiency improvements. We strive to be a client-centric leader in technical support and sales services efficiency across all our main markets, and we set our service performance targets accordingly. Our individual customer satisfaction are also targeted to contribute toward our revenue targets.

Our efficient innovations: in 2019, our main focus was on customer satisfaction, which led to our client-centric initiatives; for example, online platform tool that provided convenience and great experiences for customers. Our data analytics allows us to gain insights to customer' needs, forming strong connections with customers and innovating around their yet-to-be demands.

We constantly raising standard for innovation evaluation criteria, in particular, across Green Range product lines which accounted for 25% of total sales volumes and 55% of gross profit contributions.

TIPCO ASPHALT 4.0 Roadmap 2019 to 2025



Innovation Framework

How the Group drives business through innovation and creates right business approach by utilizing innovation platform can be summarized in the diagram below. We created harness the creative talents of our employees while staying in alignment with our corporate strategy. It's inside out strategic innovation approach that provides a way to act on new ideas to create positive impact to stakeholders and business ecosystem.



OUR INNOVATION PLATFORM

Internal Stakeholder

Closed Process Innovation Innovation

PROCESS Innovation
PRODUCT Innovation
SERVICE Innovation
NEW BUSINESS Innovation

Foster Innovation Culture

External Stakeholder

Collaborative Open Innovation

SMART People

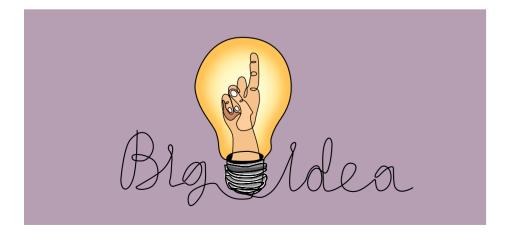
SMART Health

SMART Environment

SMART Logistics

SMART Factory







INNOVATION: ENVIRONMENTALLY FRIENDLY | Clause 6.2 and 6.5 |



Since 2015, Tipco Asphalt places great emphasis upon environmental impacts from our operations. This hence led to several initiatives implemented to reduce such impacts, whether it is the old truck unit replacement, or changing tires and fuel used in the logistics process.

Creating a culture of sustainable, green innovation is an important strategy in which the Group must constantly improve, with awareness of the environment that will affect the next generations. The Group, therefore, looks for opportunities to improve production processes while encouraging employees to help minimizing environmental impacts from our operations. The company focuses on raising awareness of environmental responsibility and creating a green culture in accordance with the ISO 14001: 2015 standard.

Tipco Asphalt Group has continuously innovated products and services with an emphasis on broad positive impacts on the environment, society and governance (ESG). New concepts and knowledge have been applied and improved to create innovations that contribute values to both the organization and society. The innovation platform is not only limited to organizational competencies but also placed importance on the innovation development in collaboration with other related stakeholders; for example; academic students/lecturers, for effectiveness and efficiency, knowledge development and creation of mutual benefit to the organization and society. This leads to product creations that address stakeholders' preferences and take into account the ESG impacts, such as environmental-friendly energy, socially responsible initiatives, and raising added values from new ESG-related products.



Type of Innovation	2018	2019			
Type of inflovation	Executed	Idea Stage	Executed		
roduct / Service Innovation	1	8	7		
rocess Innovation	1	17	47		
ocial Innovation	1	2	-		
nvironmental Friendly Product / Service novation	2	5	8		
nvironmental Friendly Process novation	3	8	18		
nvironmental Friendly Social Innovation	3	7	6		
otal Innovation Projects	10	47	86		

FOSTERING INNOVATION CULTURE INNOVATION IN THE AGE OF DISRUPTION

"Innovative Solutions Award" Contest, CLOSED INNOVATION

An in-house innovation (Closed Innovation) contest brings the company over hundreds of ideas for innovative products, services, processes and thus increases innovation performance to a high degree. Can work to achieve either through the execution of the sustainable business model or through minimization of negative impacts of business activities. These SDGs are particularly relevant for the Tipco Asphalt Group because of economic, environmental, and social impacts. They are, therefore, viewed as overlapping with R&D works but Innovation is beyond products and plays to creating more effective processes, products, and ideas.

CASE STUDY 1:

Innovation Initiative Summary							
Project Name	"Innovative Solutions Award" Contest						
Project Started	2018	Continuous Project	2 nd Years				
Objective	Increases innovation performance to a high degree for Tipco Asphalt Group						
Strategy	Innovatio	n leads to the future					
Project Partner	Mitr Phol Sugar (Project Coach)						
Impact Assessment	Bring employees towards innovative culture						

Our Innovation Plan

2019	2020 - 2023	2024	Smarte
 Inspiration Podcast Inspiration Stage Trigger to think Innovative Solutions Award 	 Incremental Innovations New invention Enhance knowledge and capabilities on Creative Thinking and Innovation Management to all employees' level Accelerate Program – for young generation to create new S curve 	Creativity in people – Modern Road Technicians Creativity in process – Most advanced technology in transportation i.e. application with modern and real time weather forecast Co-creation with partners – Co-creation program with MTEC, NIA	sustainable p > 20 p of innovation implement Comme

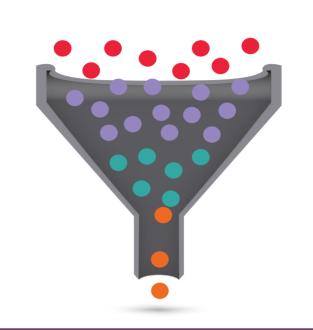
marter Working



sustainable profitable growth

> 20 projects novation projects go for plementation stage / Commercialized

The Path for Success



Submission Round

Closing submission date with **133 projects** from **7 countries, 320 employees** engaged.

First Round Screening

Screening by Manager Level or BU Heads with standard criteria and guidelines.

Semi-Final Round 10 projects

Pitching by candidates giving 10 mins presentation via PPT or VDO by committees

Final Contest

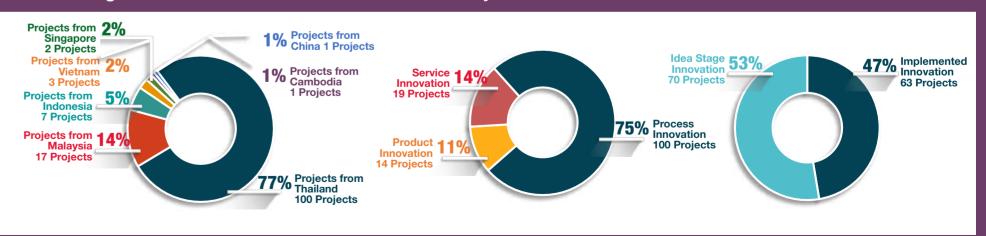
On stage live 10 mins presentation & 10 mins Q&A by the committees







Overview Figures from Innovative Solutions Award Project Submission



IMPROVEMENT CSS-1h (EMA)

PROPERTY BY LATEX (ELA)

Nakhon Ratchasima Team, Thailand

Decrease AC usage by 3%

during production, improve

product stability and reduce

frag after pumping

"

I believe that my most important mission as CEO is to continually drive innovation by leveraging the strengths and knowledges of TIPCO Asphalt Group employees.

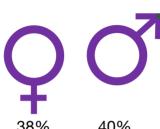
We will continue to find new ways to drive creation of new value in collaboration with our employees across the Group.

"

Chaiwat Srivalwat Chief Executive Officer And Chairman of NPD*

*NPD: New Product & Service Development and Design Committee

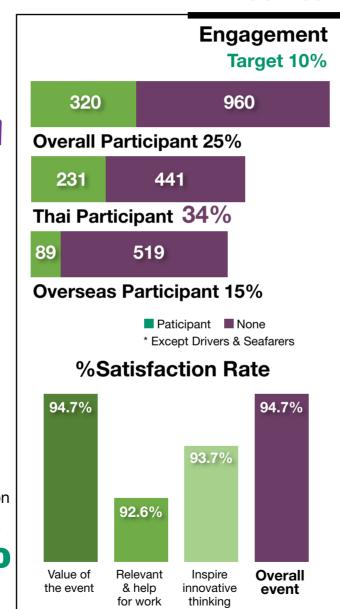
First Annual Corporate Innovative Contest



projects submission

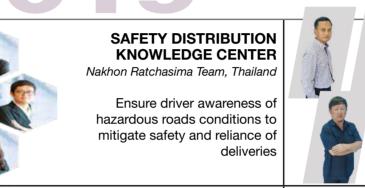
Innovative Solutions Award 2019 Participant Satisfaction

94.7%



320 STAFF PARTICIPATED IN THE COMPETITION 133 PROJECTS SUBMITTED

10 PROJECTS SELECTED FOR THE FINAL ROUND



NATURAL GAS SUPPLY FOR **HOT OIL BOILER**

Prapadeng Team, Thailand

Increase investmen returns by switching to natural gas for hot oil boiler at the plant



PROCESS CONTROL OF

Nakhon Ratchasima Team.

Cost saving production of CSS-1h by ensuring appropriate utilization of



MODIFICATION OF BITUMEN TRANSFER EQUIPMENT FROM MAIN TANK TO PMB PREHEAT TANK

ABS Ciwandan Depot, Indonesia

Optimize electrical power supply at the plant and reduce surges/outages



SIMULATOR KBC Team, Malaysia

Efficient management of heating cost by accurately predicting heat loss due to internal and external factors

INTERNAL CORROSION OF **KBC STORAGE TANK**

KBC Team. Malavsia

filling speed

Enhance structural integrity lifespan by understanding and predicting the effects of the raw material



THE SOLAR HEATER SYSTEM ADCo Team, Vietnam

Significantly increase AE production at a lower cost per unit



NEW DESIGN OF HOTBOX FOR QUICK HEATING **OF ASPHALT**

ADCo Team. Vietnam

5 times faster heating (decrease cost) and reduced air pollution 2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 140 |

INIOVATIVE SOLUTIONS

AWARD

2019













Scan here for Innovative contest VDO

Foster Innovation Culture Excluded seafarers 396 persons **SUBMITTED 133 PROJECTS**

First year for innovative solutions award contest

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 142 | 2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 143 |

INNOVATIVE SOLUTIONS AWARD 2019

a World Difference."

- Queen Elisabeth II -

"A Small Steps Can Make

The objective of this project is to promote the dissemination of new ideas that create value within the Tipco Asphalt Group by inviting all internal colleagues within the Group to propose innovative ideas in the areas of product, service and processes. From total of 133 projects submitted: 102 projects are submitted from Thailand team. 17 from Malaysia, 7 from Indonesia, 3 from Vietnam, 2 from Singapore, 1 from China and 1 from Cambodia. In the first-round, submitted projects were reviewed by the manager level or BU Heads with standard criteria and guidelines. For the semi-final round, 38 projects have been selected through pitching via short VDO clip/PPT presentation to the committees.



FINAL ROUND CONTEST

In the Final Round, there are 10 teams; 5 from Thailand, 2 from Malaysia, 2 from Vietnam and 1 from Indonesia. Our judge panel comprises our CEO, 3 external judges and 1 internal judge.

During the final round contest, each participating team was required to deliver a 10-minute live presentation, followed by a 10-minute Q&A by the committees. Total 8 projects selected to this round are innovative processes and 2 projects are innovative products.

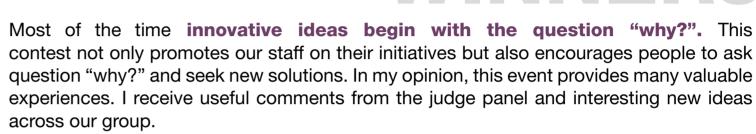


2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 144 | 2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 145

INNOVATIVE SOLUTIONS AWARD 2019



VOICE From The



Amidst today's rapidly disrupted and highly competitive business environment, leading companies need to equip themselves with full lineups of "secret weapons" to ensure their competitive edge over competitors. TIPCO Asphalt Group undoubtedly is one of Thailand's leading businesses due to its continual developments of new technology and innovations. I am very proud to be part of this dynamic organization.



Chaiyavid Wonghirunyawat Nakhon Ratchasima Plant, Thailand



PROCESS CONTROL OF CSS-1h WITH FIXOL

Nakhon Ratchasima Team, Thailand

"Cost saving production of CSS-1h by ensuring appropriate utilization of FIXOL"



NEW DESIGN OF HOTBOX FOR QUICK HEATING OF ASPHALT

ADCo Team. Vietnam

"5 times faster heating (decrease cost) and reduced air pollution"



COST SAVING
AND PROCESS
OPTIMIZATION
TO INNOVATIVE
BITUMEN/CRUDE
OIL TANK
SIMULATOR

BC Team, Malaysia

"Efficient management of heating cost by accurately predicting heat loss due to internal and external factors"



FILLING NOZZLE TO PREVENT BUBBLES

Phitsanulok Team, Thailand

"Decrease chances for bubbles during filling process to increase filling speed" 2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 146 |

from The Judging Committee



Mr. Worrawat Srivook **Vice President Corporate Sustainability**, Mitr Phol Group

My experience as a judge committee is great.... very excited. Everyone is well prepared and has strong commitments. However, I prefer to have an activity in plant to persuade all staff rather than via VDO conference. This is the key part of cultivate innovation DNA...

There are more opportunity for improvements. I see the potential of Tipco Asphalt to uplift innovation because the crucial part to promote innovation within the organization is through commitment of the top management and your CEO showed this all the time and through his every speech that I heard.

I also recommend to engage all staff and to integrate innovation in everyday working process. Do not wait to join annual innovation contest but TIPCO's staff at each plant may conduct series of small innovation activities. For instance, additional awards may be setup for staff who raise issues along with corresponding solutions.

Tipco Asphalt's contest would not be made possible without guidance and supports from Khun Worrawat of Mitr Phol Group. Encouragement, guideline through examples and consultancy ensure the fastest way we can develop this innovation contest within a year and gained our employees engagement over 30%. We understood the meaning of **sharing** from Khun Worrawat as the project coach and we shall continue to share our experience on innovations to other stakeholders. More importantly not only additional financial gains we reap from Innovations but also we can achieve efficiency improvement and cost reduction in the long-run.



Mr. Wuttipong Boonnaiwa **Production Manager**

As a coach for productivity and innovation sectors, I heard from executives that future successes depend on innovation. It is not only a "buzz word", but it also plays an important role in economic growth. I can see that Tipco Asphalt would like to move towards innovation as key tool. Today I found all participating teams showed their high ambitions to be creators while the company



Dr. Phonathorn Julphunthona **Department of Civil Engineering Faculty** of Engineering Naresuan University

Most large and reputable companies establish a separate unit exclusively for development of innovations or research projects. Nevertheless, one of key challenges these companies encounter is to break the 'silo mentality' upon innovation development: this is to ensure that innovation projects will not be only limited to any particular work units. Innovation creations across all units within an organization not only serves as major driving force for a company to achieve its business objectives amidst rapidly changing market entrainment but also enhances corporate image and unique DNA of such organization.



Mr. Thierry Defrene

Chief Operating Officer - International Trading and Business Development, Tipco Asphalt PCL.

It was quite interesting to participate as a jury as it forced me to go into details of all semi-final and final projects. It gave me an interesting overview of what our business units are doing to improve their workflows, efficiency and cost controls.

I think there should be more emphasis on true innovation as I thought somehow several good projects focus on BAU or continuous improvement characteristics. Perhaps we need to better define what innovation is. Happy to develop this further if needed.



Innovation is well regarded as highly significant and valuable upon not only everyday life but also business conducts. The creation of innovation hence can be a quite challenging task however this can be achieved through bold ideas accompanied by prompt actions. This can be evidenced through the recent Innovation Award 2019 where participants can express their ideas along with prompt executions while learning that such first bold moves or actions are the most crucial to help driving the organization toward future successes.

> Innovation toward Success



Nareerat Kanhachalee

Branding Manager, Project Manager - Closed Innovation Contest Project

The UN Sustainable Development Goals



SDG 4: Quality education

The Innovation Awards contest allows staff to express their ideas and implementation through hands-on experiences. This also promotes mutual knowledge sharing among staff across different units or locations. All new learnings can be further implemented to create not only additional benefits but also new knowledges.



SDG 9: Industry. Innovation and Infrastructure

Investments in innovations, through various activities and focus on new ideas proposed by internal staff, is well regarded as a tangible approach to promote innovations at the corporate level. This can be further passed on to external parties, in form of not only product properties such as environmentally friendly asphalt products with no heating required and no oil ingredients, but also through production process improvements to yield quality asphalt products that provide maximum safety for public road users.



SDG 17: Partnerships for the goals

Collaboration with different entities, in particular those individuals or external units that have expertise across various fields, can perfectly fulfill gaps in those areas that the organization still lacks, or in need. We could gain benefits, obtain more time saving, resources while we still can achieve our business objectives through mutual cooperation with partnership networks i.e., suppliers, contractors, academics, and government units. Such relationship encourages mutual learning and sharing, which ultimately lead to solution development and other projects, in a sustainable manner.



2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 149 | 2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 148 |

CASE 2: DIGITAL SALES PLATFORM

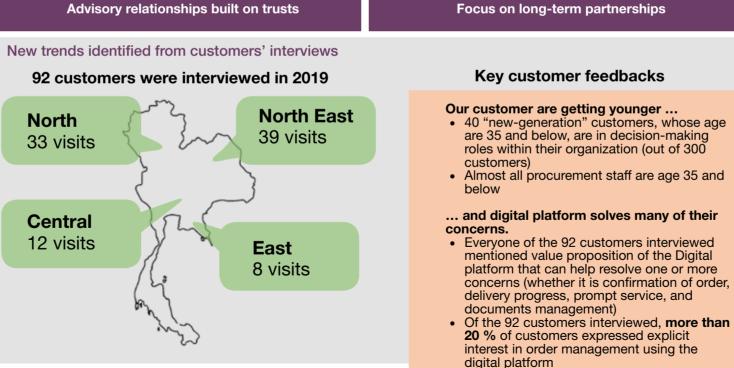
We deliver our best services to resolve our customer's pain points and to ensure maximum customers' satisfaction and great experiences with us.

Closed - Innovation Project			
Project Name	Digital Platform for Sales Process		
Responsible units	Domestic Marketing & Sales, Thailand Market		
Objective	1.) To create convenient platform for customers facilitating business transactions with the group 2.) To be a Client-Centric Management company 3.) To provide sales forces with extra time to deliver high-value services; for example, product use demonstration etc.		
Problem	From customers' point of view: 1) Too many levels of hierarchy for placing/confirming orders 2) Too frequent calls for order status check and tracking From salespersons' point of view: 1) Too many hierarchy of placing orders and hence caused potential human errors 2) Too time-consuming, internal check process		
Innovative Solutions	Develop Digital Sales Platform - Customer Identification and Authentication - Customers Pre-programmed Inquiry - Notifications: payment, reminder, truck delivery status etc. - Active chatroom: Managed by Customer Service team		
Expected Outcomes	 Maximize Customer Satisfaction for faster services & more accurate order data inputs. Focus on shifting the organization toward a Client-Centric (Customer-Focused) mindset. Improved Customer Insights and best Customer Experiences Groom our salesforce staff to become sales professionals First step toward development of digital products and services lineups 		
Status	Ongoing and expected to be fully completed by 2022		

HOW DIGITAL PLATFORM STREAMLINES ORDERING PROCESS



	Current Practice	Omni-Channel Sales
Role of Salesperson	Data management and data entry	Strategic partner and trusted advisor
Order Processing	Manual data entry (time required 5 minutes per entry, 32,000 orders per year)	Automatically via digital workflow (186 working days per year per salesperson gained)



Advisory relationships built on trusts

Focus on long-term partnerships

Product

Customer's

location

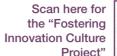
digital platform

ISSUE	Current Practice	Omni-Channel Sales
Only the authorized person can place the orders	Official PO from the procurement officer	 Two-step verification from pre- authorized mobile phone number and QR code Official PO from the procurement officer
Only the authorized person can access confidential information	Information on prices, credit term, credit limits, and due dates are shared verbally, electronically, or in hard copies. Document control is largely up to the customers.	Information shared electronically via the digital platform can be regulated using authorized user access levels and document access time-outs.
TIPCO Asphalt's internal order processing workflow	Current workflow involving sales, finance, and operations.	Minimize sales workload from order processing.
Security of TIPCO Asphalt's IT infrastructure	Existing IT security and applications (Oracle).	All information is still based on our existing infrastructure. The digital platform serves as a UI/UX.

INNOVATION PERFORMANCE TRACKING

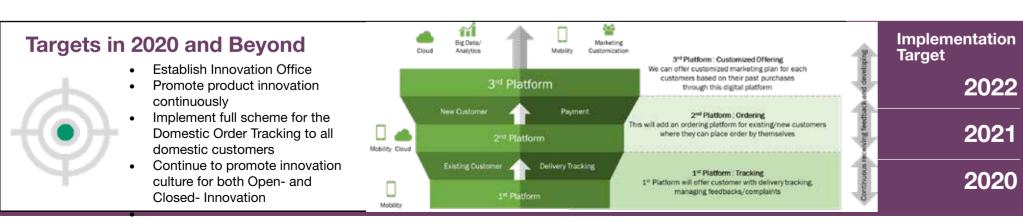
Contribution of Product and Process Innovations

Product innovation impacts since 2014-2019 have revealed strong growth. We portray the business impacts from new innovative products (Para AC, EAP and Premix Asphalt) using sales volumes data as illustrated below:





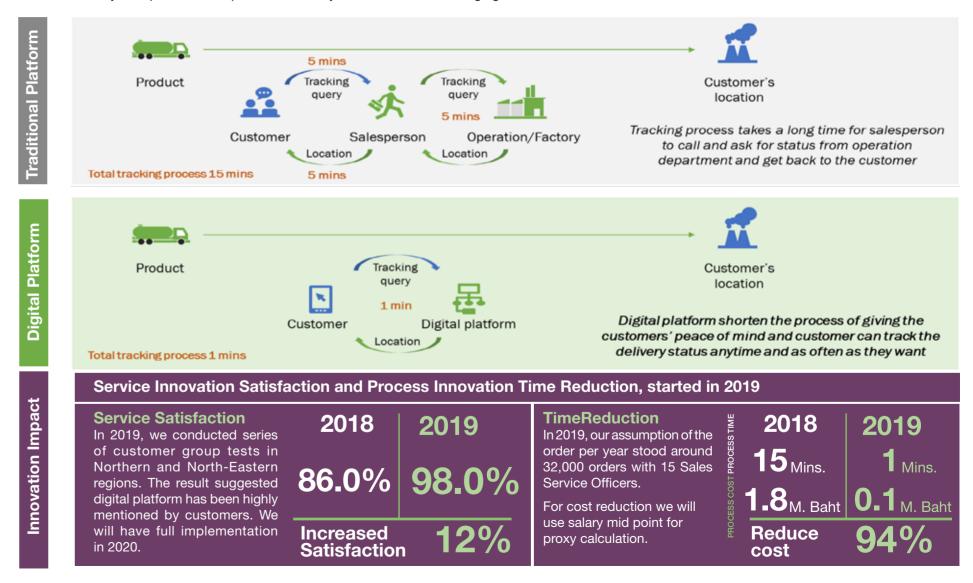




OUTSTANDING INNOVATION PERFORMANCE 2019: "Order Tracking" Initiative

Process Innovation to Optimize Services

This innovation project from Domestic Sales Team aims to solve customer pain points which affect to whole sales value chain. Our objectives are to improve customer satisfaction, order tracking efficiency and flexibility via developing the digital transformation application. This would help organizations to eliminate order traffic bottlenecks that lower work efficiency. The platform also possess flexibility to accommodate changing demands.



Center of Excellence for Product, Service and Social Innovation











We constantly try to move innovative thinking forward; we may encounter few roadblocks, but we are confident that eventually we will win-over some of the greatest ideas and encourage our staff to become more innovative and sharing more ideas.

We create and deliver values to customers and the organization and this can be achieved on any activity of the business; i.e., from process innovations to identifying and targeting underserved customer segments. Our ambition on "innovation-driven" is instilled within every employee who has ideas that can turn into innovations. The cores of our innovation culture lie upon information sharing among departments with no silos, ongoing learning and skills development.

We strongly believe that everyone in the Group is an active contributor to the company's success.

"

We strive for innovating a new S-Curve for company



Punsiri Suttienkul
Branding and CSR Director

The UN Sustainable Development Goals



SDG 4: Quality Education

Innovators must manage knowledge effectively. We provide knowledge and better understand innovation for effective ideas.



SDG 8: Decent Work and Economic Growth

One of the major benefits of innovation is contribution to economic growth. We aim to utilize our innovation as our spring-board business growth.



SDG 9: Industry, Innovation and Infrastructure

We use innovation to drive our asphalt business especially on road-paving application by utilizing advanced technology on the country's infrastructure.



SDG 12: Responsible Consumption and Production

Our CSV/CSR Initiatives on Bueng Takhreng – the Sustainable integrated tourism project, our change behavior of plastic consumption in daily office life contribute to the goal.



SDG 17: Partnerships for the goals

We may have quick win and increase competitive landscape, by partnering with businesses that share similar goals.





responding to Road Safety issues







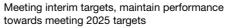




RESPONDING TO ROAD SAFETY ISSUES

Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)	FY 2019 Performance
Safer Road from durable and good surface condition "Towards Zero: Having the safes roads in the world". Towards Zero is not a target to be achieved by a certain date or month or year; it is aspirational.	- 5 Times - 140 Employee Volunteers - 322 Participants from	Patching Potholes Activity for communities and expand activity to CSR partners for adopting as their CSR safety projects.	 Patching Pothole Activity Times Mitr Phol as CSR Partner and adopted Patching Pothole project at Khon Khan 	
		communities	Improve road pavement for community in Nakornratsima province (owner of project location) with community and CSR partner	Jointed with Sung Noen District Chief, Nakhon Ratchasima, DOR District 5 and Army Region 21, Suranaree Nakhon Ratchasima Camp to improve walking track pavement to be a jogging – walking way for community health area.
		Started to launch CPR & AED training for employees and communities close by plant 108 participations	Train CPR/AED for employees and communities close by plants.	Trained volunteers for CPR & AED 956 participations
3 moonaan And well-some		• OO participations	Educate children in the level of K.G. to P.6 on basic Road Safety knowledge and English related edutaining.	Trained and introduced CSR activities in 5 schools in communities close-by plants

Progress Tracking Legend:

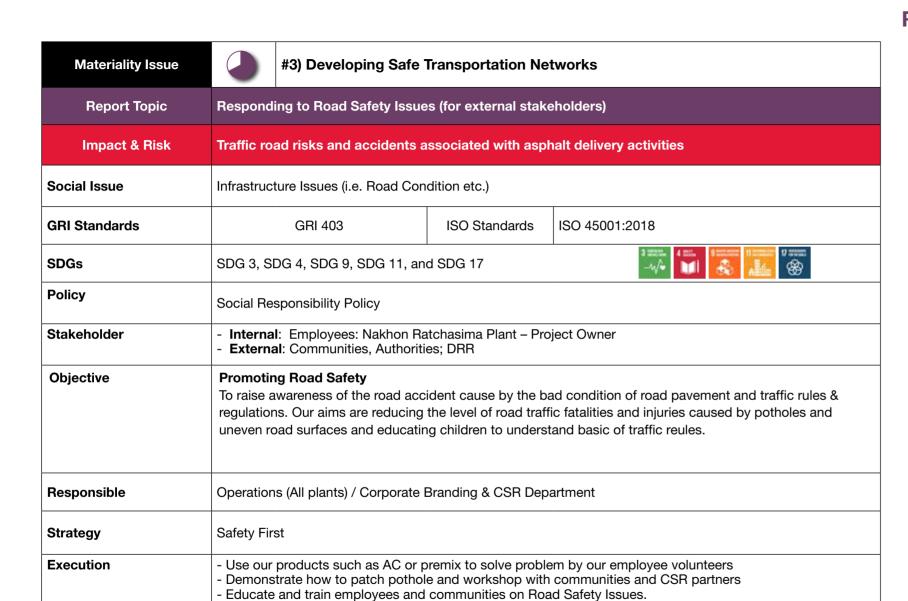




Fall short of interim target for three quarters; review current practices



Missing interim target for more than one consecutive year; review and revise targets (if necessary)



Innovative Leader



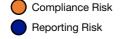












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DEVELOPING TRANSPORTATION SAFETY NETWORKS



resolving road safety issues

Management Approach

The 2030 Sustainable Development Agenda includes an ambitious target of 50% reduction of road traffic deaths and injuries by 2020. This target will leverage renewed momentum for the Decade of Action for Road Safety 2011–2020.

According to a survey co-conducted by the World Health Organization (WHO) and the World Bank (WB), road accidents have been major cause for fatalities of young victims aged between 5-29 years while road accidents are ranked 2nd for the most cause of fatalities of victims aged between 30-44 years worldwide. According to statistics, road accidents kill more than 1.2 million people worldwide each year. Some accidents left 20-50 million victims with injuries, or paralyzed conditions. Unless there are improvements on road safety implemented, it is expected that death rates from road accidents in underdeveloped or developing countries will increase by approximately 80 percent by 2020.

Through our works and expertise on road surface, we constantly ensure minimum risk exposures associated with car crashes with aim to lower injury severity and consequences. The Group promotes and conducts road safety projects in conjunction with government agencies and other private sectors. These key projects are as follows:

- 1) Patching Pothole: Repair of small-to mid- size potholes on road surface to ensure safe travel
- 2) Road Safety for Kids: Provision of basic road rules & regulations
- 3) CPR & AED Training: First-aid course designed to help victims achieve higher survival rates when accidents occur.

Road Safety Issues were classified under in the category of Innovation Leader as we aspire to innovate/develop/improve any products, processes or knowhow to improve road safety.

ROAD & LIFE SAFETY



ROAD ACCIDENT





5 Frameworks for [[[]]]

Road traffic safety refers to methods and measures used to prevent road users from being killed or seriously injured.

According to the 5 frameworks for Road Safety, we identified our strength and expertise that can help improve road safety more efficiently and sustainably as follows:

- 1) Road Safety: Road surface quality is directly linked to road accidents and victim injury and fatality; in particular, road surface with potholes that compromise road safety.
- 2) Safe Road Users: Legislation and road user behavior are key risk factors leading for road accidents. We plan to provide proper road safety knowledge for all road users starting from students from kindergarten to elementary school (Grade 6).
- 3) Post-Accident Care: Emergency care is the essence of post-crash response. There are series of immediately-required actions that are essential to provide effective care for the injured: one of which is CPR procedure which must be performed within 4 minutes after the accident, to ensure better survival rate of accident victims.

Road Safety



Source: http://saferoaduse.unhcr.org/wp-content/uploads/2018/03/Road-Safety-Strategy-January-26-2018-reduced.pdf

"Safety is Something that Affects us all."

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OUR INITIATIVES FOR ROAD SAFETY

Patching Potholes for Road Safety



CSR/CSV Initiative Summary				
Project Started	2017	2017 Continuous Project 3 rd Year		
Objective	To enhance road safety for all road users, including related assets. The Group launches this initiative focusing on repairs of road surface/ potholes that may cause road accidents.			
Strategy	Safety First			
Project Partners	Department of Rural Roads, Mitr Phol Sugar Group			
Impact Assessment	 Road surface safety for road accident reduction Improving our technology and innovation on product and process for more effective pothole repairs. 			
			3 meson	



Road Safety for Kids

through Edutainment

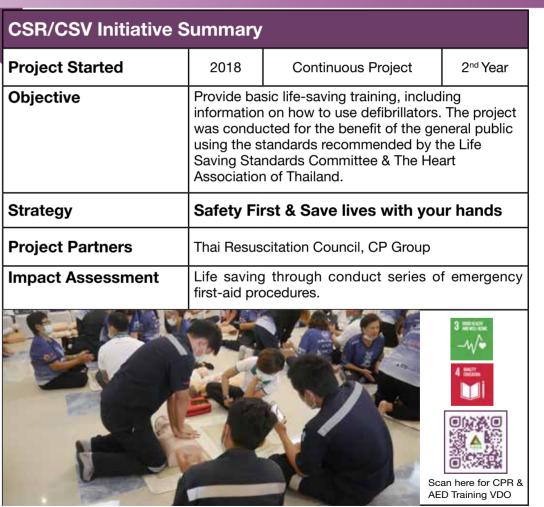


CSR/CSV Initiative Summary				
Project Started	2019	Continuous Project	1 st Year	
Objective	To provide know ledge on safe road usage and traffic laws for the youths while enhancing their road safety experience when traveling with adults, or on their owns.			
Strategy	Safety First			
Project Partners	Local schools in each province			
Impact Assessment	Increase children's knowledge or parents' awareness on pedestrian safety			
			an here for Road fety for Kids VDO	

CPR Training

with AED usage











A group of Yong men who love to modify the pick-up car with big tires whom they called themselves "Big Wheel Team". They found driving problem from the bad condition road with many potholes, thus they plan to do road patching in front of Udon Pattana School. The traffic on this route is quite heavy then this team get teachers and parents of student of this school to do on "Patching Potholes" activity.



High Light of this project:

- The "Big Wheel Team" initiated the CSR activity by buying the asphalt premix product 50 bags for "Patching Pothole" project.
- The big wheel team co-operated with school's teachers & parents to work on CSR project together for creating sense of belonging and save/keep their road in good condition at all time.
- Tipco Asphalt supported part of premix products and trained how to patching in a proper way





Scan here for Raktang Raktin Project



Scan here for Patching Potholes





JOGGING TRACK

Phayathai Phirom Garden / July 2019

Phayathai District | Community | Tipco Group





I RURAL HIGHWAY NO.2027

Khonkaen / May 2019
DRR | Community | Mitr Phol Group

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Jogging track around the park: Sung Noen Station

Objective:

Develop the walkway around the Sung Noen train station to be a Jogging Track for community recreation & exercise area

Our Project:

- 1) Surface adjustment by working with Sung Noen community members, local Authority, The Second Army Area-military officers and Tipco Asphalt (Nakhon Ratchasima team)
- 2) Overlaying surface for making jogging and walking track 700 meters.
- 3) Sweeping & cleaning the track









"

I am very proud that our Patching Potholes CSR activity successfully allowed TIPCO Asphalt to connect with local communities, their members, and government units. More importantly, we can utilize our high-quality products for road surface repair works, to ensure road safety for all users.

"



Phanupong Sertkawee
Project Manager
Road Safety -Patching Pothole
Project

The UN Sustainable Development Goals



SDG 3: Good Health and Well-Being

Our health and road safety practice works to improve quality of life in developing cities through sustainable patching potholes and rehab-road surface paving.



SDG 4: Quality Education

We have good opportunity to give the right know-how on patching pothole for communities and CSR partners. Some of community members, come to get the higher education on asphalt products and practice for their careers.



SDG 9: Industry, Innovation and Infrastructure

We experienced the road patching pothole and also find many new solutions and surprisingly, we develop new products and new process supporting the road safety from CSR activity.



SDG 11: Sustainability Cities and Communities

We use our expertise to support travel safe in community by continuously support patching pothole activities.



SDG 17: Partnerships for the goals

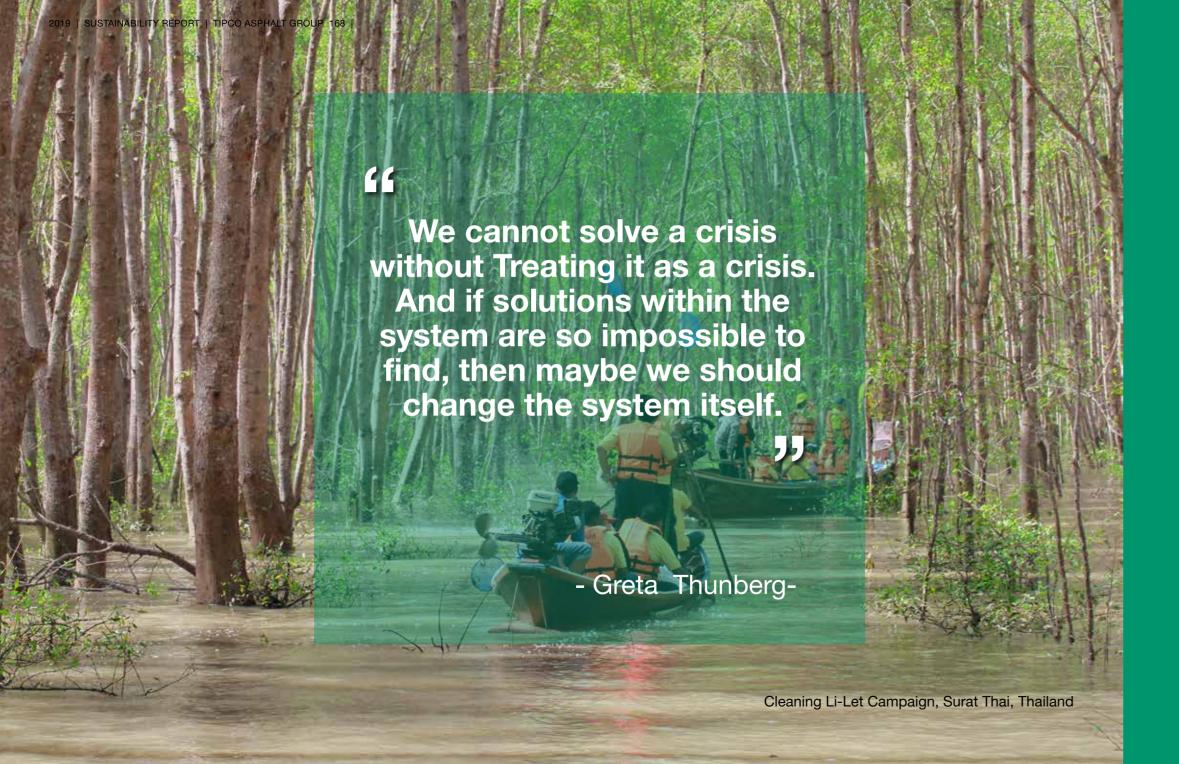
The Patching Pothole project has been extending to other CSR partners, in order to expand the knowledge and area of the project to make all the roads safe.

ECO-EFFICIENCY OPERATIONS





Constantly improve production process to achieve maximum efficiency, with 'save' on ecosystem of the community





Saving the World









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#11) Climate Change #8) Energy Usage Efficiency **Materiality Issue** #13) Compliance with Relevant Environmental Requirements Report Topic Save the World Impact of non-compliance to regulations, which are the license to operate. (Compliance Risk) Impact & Risk Environmental impact on climate change and energy resources depletion. (Operational Risk) Social Issue Environmental responsibility on GHG emissions and energy resources. ISO 14001 **GRI Standards** GRI 302 / GRI 305 / GRI 307 ISO Standards ISO 26000: clause 6.5.3 / 6.5.5 **SDGs** SDG 4, SDG 7, SDG 9, SDG 12, SDG 13 and SDG 17 Policy Integrated Management System Policy Internal: Employees Stakeholder External: Government, Community Objective - Natural resources usage. - Prevent and control of pollutions effluent to air, water and soil. Operations (All plants) / SSHE&SD Responsible Strategy Operational Efficiency / Eco-Efficiency Operations. - Install new hot oil boiler and renovate storage tank and piping system Execution - Replace the heating coil and re-design new agitators of mixing tanks - Increase productivity of Joint Sealer production process - Renewable energy by Bio Diesel for Hot Oil Boiler

SAVE THE WORLD

Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)	FY 2019 Performance
Focus to reduce the global environmental impacts on climate change and natural resource depletion that may causes by company.	Reduce the energy consumption and heating cost by enhancing the operational efficiency	The energy consumption 2018 is 251,387 G.J.	Reduce the energy consumption at least 10% from previous year.	○ ○ ● The energy consumption 2019 is 210,975 G.J. Reduce 16.1%
Support on new technology and innovative solution to enhance the efficiency of resource usage for				
Reduce and remove the greenhouse gas emission to environment.	Reduce and remove the GHG Emissions by GHG Management (GHG Protocol)	The GHG Emissions Intensity (Scope 1 & 2) 2018 is 0.041 Ton CO2e/ Ton Produced	Reduce the GHG Emission Intensity at least 4% (comparing to based year 2018)	The GHG Emissions Intensity (Scope 1 & 2) 2019 is 0.038 Ton CO2e/ Ton Produced Reduce 7.58%
12 RESPONSIBLE CONSUMPTION AND PRODUCTION COO 13 CLIMATE ACTION ACTION	Zero environmental complaint and non-compliance with environmental law & regulations	1 case of environmental complaint. Non-compliance with environmental law & regulations in 2018	Zero environmental complaint & non-compliance with environmental law & regulations in 2018	No case of environmental complaint & non-compliance with environmental law & regulations in 2019 Zero Case
Progress Tracking Legend:	Meeting interim targets, maintain perfor	mance Fall short of inte	rim target for three quarters;	Missing interim target for more than one consecutive

Impacts:











Progress Tracking Legend:



Meeting interim targets, maintain performance towards meeting 2025 targets



Fall short of interim target for three quarters; review current practices



Missing interim target for more than one consecutive year; review and revise targets (if necessary)

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2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 173 |

ENVIRONMENTAL MANAGEMENT



saving the world for next generations



Scan here for ntegrated management system policy



Scan here for Energy conservation

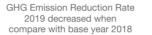
Management Approach

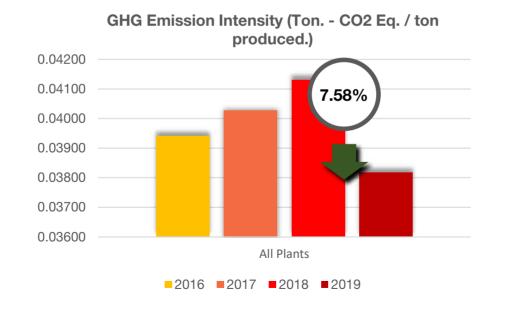
Tipco Asphalt Group has established and implemented the Environmental Management System according to ISO 14001, and have been certified across the Head Office and all 5 plants in Thailand by certification body since 2003. The Group continues to develop environmental management and maintain the certifications until today. Pursuant to our Integrated Management System Policy, the Group aims to protect our environment by preventing/controlling the pollutants from our business activities that may impact environment such as greenhouse gas emission, water discharge, reducing the waste and control the resource usage, etc. In additional, We also have established the Energy Conservation Policy for usage as framework and direction for operations on energy conservations that we aim to improve the energy efficiency continuously by technology and best practices that suitable for our business.

Greenhouse Gas Emission | 305-1 | 305-2 | 305-4 | 305-6 | Clause 6.5.5 and 7.4.2 |

Since September 2018, we have implemented the GHG Management in compliance with the GHG Protocol - A Corporate Accounting and Reporting Standard. GHG has been implemented across all 5 plants in Thailand with the scopes of a report of Direct GHG Emissions and Electricity and Indirect GHG Emissions In 2019, we achieved 7.58% GHG reduction, with detailed action plans to reduce the greenhouse gas emissions summarized below:

- Installed new hot oil boiler at Phrapradaeng terminal to increase the heat efficiency and reduce the fuel consumption;
- Replaced new heating coil and re-designed the agitators of two Para Asphalt Cement Tanks at Phitsanulok plant to reduce fuel consumption for heating products and minimize production lead time;
- Changed production process of Joint Sealer at Nakhon Ratchasima plant by double production capacity from 15 ton/batch to 30 ton/batch with reduction of fuel consumption about 100-150 liters/batch for heating asphalt material and;
- Switched fuels from diesel to be bio-diesel (B20) for hot oil boilers at Thathong plant that help reducing GHG emission.





Energy Conservation | 302-1 | 302-3 | 302-4 | Clause 6.5.4 and 7.4.2 |

In 2019, the Group constantly explored innovations, ideas and initiatives on fuel and energy saving. In addition to initiatives on GHG Emission Reduction, there are additional initiatives on energy saving in 2019 as follows:

- Implemented the Centralize Logistic Center at Phrapradaeng terminal to reduce backhaul cost, cut fuel consumption and improve truck utilization;
- Implemented the Oracle Transportation Management module (OTM) and Truck Tracking System Technology to optimize transport routes, delivery distance and time;
- Renovated storage tanks and the piping system at Phrapradaeng terminal to reduce heat loss of piping system; and
- Improved the power supply system at Rayong plant to enhance power efficiency.

We achieved remarkable energy saving results: the total energy/ fuel consumption stood at 210,975 GJ. In 2019 consumption declined 16% as opposed to that of 2018. Total energy intensity stays at 0.452 GJ./ Ton Produced, a 11% reduction as opposed to that of 2018.

Total Energy / Fuel Consumption (GJ) & Energy Intensity (GJ/ Ton Produced)



Energy intensity ratio: (GJ./ Ton Produced)

Next Step

Since August 2019, The operations team has focused on the renewal energy: we switched to biodiesel (B20) as a fuel for the existing hot oil boiler at Thathong plant Suratthani province. We also plan to use for the new hot oil boiler at PD in 2020. In addition, we are currently exploring the possibility of switching to biodiesel to fuel transportation trucks starting at Rayong and Nakhon Ratchasima plants by early-2020. If successful, this initiative can reduce fossil fuel (diesel) usage by more than 30% as compared to the previous year.

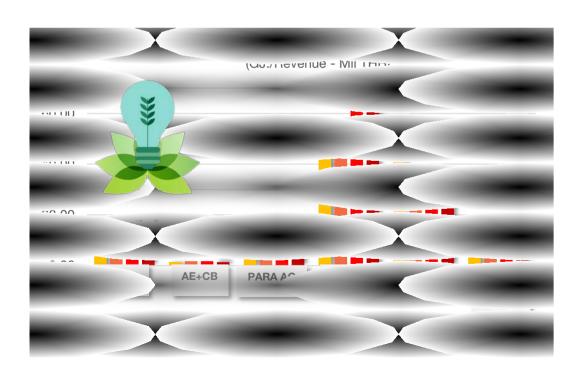
ENVIRONMENTAL MANAGEMENT

Energy Conservation | 305-1 | 305-2 | 305-4 | Clause 6.5.4 and 7.4.2 |

We track energy intensity for production per revenue, classified by product group, we found that for most of key product lineups such as Asphalt Cement (AC), Asphalt Emulsion & Cutback (AE & CB), Para Asphalt Cement (PARA AC) and Joint Sealer & Joint Primer (JS & JP), energy intensity per revenue of these products constantly decline.

Meanwhile, energy intensity of Polymer Modified Asphalt (PMA) products remains high and represents our opportunity for improvement in the future.

The energy intensity per revenue across all products averages 10.03 GJ./ Revenue - Mil.THB in 2019, representing a 9% decrease from 11.08 GJ./ Revenue - Mil. THB in 2018.



Our Commitment to Energy Conservation

Being a leading company in production and distribution of asphalt products, Tipco Asphalt Group accumulated knowledge and from our more than 40 years of work experience both at our factories and on-road construction sites while we ensure this expertise be transferred to next generations. To maintain our leadership position, we must constantly focus on innovations while all staff shall search and explore new innovative ideas and initiatives.

Despite new innovation ideas could be originated from any staff individual, successful implementation of such ideas must be conducted at the company level to ensure mutual cooperation from all related units and hence could maximize business value and benefits for all stakeholders including the environment.

In 2019, we focus on utilizing innovations for eco-efficiency enhancement. Several projects are implemented in order to balance on both of ecology and economic development, not only for business management efficiency for competitive advantage but also for concern on responsible of natural resource consumption and the environmental protection. Therefore, one of Thailand Operation Department's key long-term strategies throughout 2025 will focus on "save the world by moving toward the circular economy" concept. Our operations commit to developing innovative solutions on the system and the process of productions, maintenances, products storage, products loading and logistics in order to reduce the natural resource and energy usage. We still maintain and further improve on productivity, including to control and reduce the effluents, emissions and wastes for preventing environmental impacts.

ENVIRONMENTAL COMPLIANCE & COMPLAINT | 307-1 | 413-1 | Clause 7.6.3 |



Saving the Environment & the Planet by Managing the Whole Value Chain Operations In Compliance with Environmental Rules & Regulations

Management Approach

According to our Integrated Management System Policy, there is a procedure related to new applicable laws and regulations: i.e., from monitoring and obtaining from reliable sources, screening, registering into electronic workflows, evaluating the compliance, and planning for corrective action (in case of non-compliance is detected) then following up until completion. Moreover, the compliance of practices shall be reviewed annually while all environmental parameters are monitored and measured by external, independent parties regularly to ensure full compliance with applicable environmental laws and regulations.

Regarding the environmental complaint, we used to encounter a case of environmental complaint in 2018 on the odor of ammonia in Para Asphalt Cement production, however, after we switched to Ultra-low Ammonia Rubber material as a replacement for normal para rubber. We achieved the zero environmental complaints in 2019

ENVIRONMENTAL COMPLIANCE & COMPLAINT

Case of Environmental Compliant in 2019





















moving Towards the Circular **Economy**











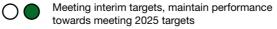




MOVING TOWARDS THE CIRCULAR ECONOMY

Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)	FY 2019 Performance
Aim to minimize the wastes disposal and resource usage by 3R Principal which are reduce, reuse and recycle. • Adopt new technology and innovative solution to	Zero significant products spill	The significant products spill during transportation process in 2018 is 0 case	Zero significant products spill during transportation process	 ○ ○ ● The significant products spill during transportation process in 2019 is 0 case Zero Case
reduce, reuse and recycle the waste and resource usage of operations • Expand the circular way in order to create shared value with relevant stakeholders in business	Zero industrial waste to landfill	The industrial waste disposal to landfill in 2018 is 13.59 Ton.	Zero industrial waste to landfill	 ○ ○ ● The industrial waste disposal to landfill in 2019 is 4.76 Ton. 4.76 Ton.
ecosystem and products life cycle.	Zero wastewater discharge	3 production plants have none wastewater discharge	All 4 production plants have none wastewater discharge	3 production plants have none waste water discharge. On Progress.
12 RESPONSIBLE CONSUMPTION AND PRODUCTION COO 13 CLIMATE ACTION ACTION	Reduce total water withdrawal	Total water withdrawal in 2018 is 62.38 M.Litre.	Reduce total water withdrawal 5% from previous year	Total water withdrawal in 2019 is 54.92 M.Litre. Reduce 12 %.

Progress Tracking Legend:

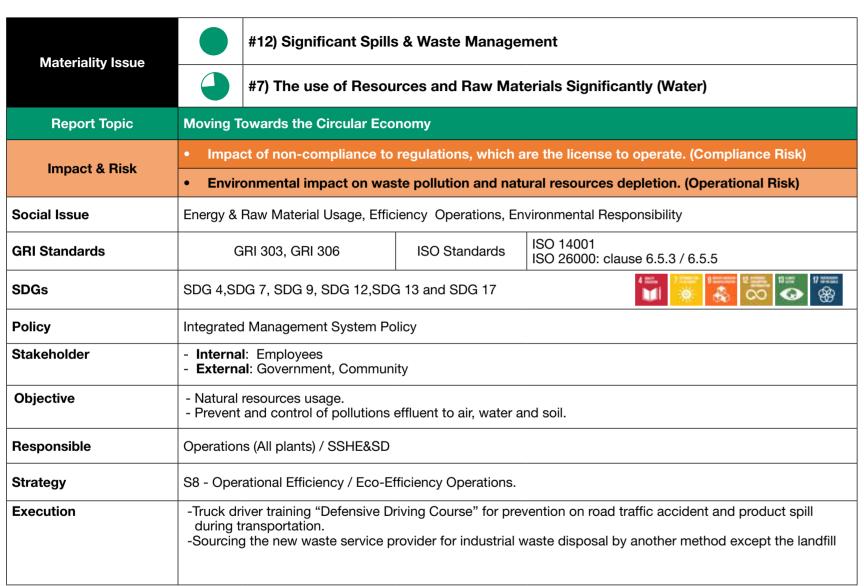




Fall short of interim target for three quarters; review current practices



Missing interim target for more than one consecutive year; review and revise targets (if necessary)



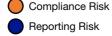
Impacts:













ENVIRONMENTAL MANAGEMENT



moving towards the circular economy

Management Approach

Refer to our Integrated Management System Policy in which waste reduction and resource usage control are mentioned, despite the fact that all 5 manufacturing plants in Thailand are located in the area of abundant water supply sources while our manufacturing process consumed relatively low quantity of water, the Group pursue and optimize water consumption through the use of "3Rs" concept; i.e., Reduce, Reuse and Recycle. We also recognized the importance of waste management so we adhered to further improve our waste management using the 3Rs principles as well as water resource management, that we have targeted to reduce the industrial (hazardous) waste to landfill to be zero in 2019.

Water Resource | 303-3 | Clause 6.5.4 and 7.4.2 |

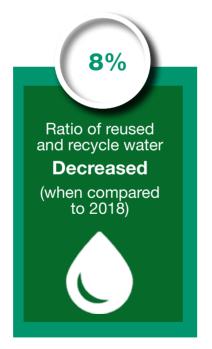
4 out of 5 of our plants capitalizes on rainwater in ground reservoir, and they had collected wastewater in the plant to do water treatment and re-use them in asphalt emulsion production process.

In 2019, these can be summarized as follows:

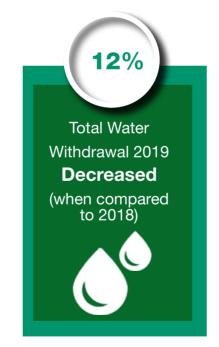
- Conducted survey and design new water drainage system at Phitsanulok plant;
- Improved wastewater pump and piping system to optimize wastewater usage for asphalt emulsion production at Nakhon Ratchasima plant.



Scan here for Integrated management system policy



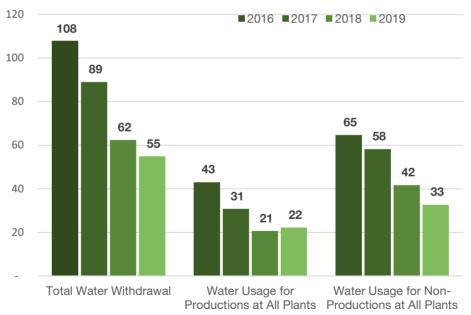
The ratio of reused and recycled water has decreased from 13% in 2018 to be 8% in 2019 due to the sale volume of Asphalt Emulsion in 2019 is decreased about 11% when comparing to the previous year.



In 2019, we achieved the reduction of total water withdrawal about 12% when comparing to 2018, the cause of reduction is coming from we had reduced the water usage for non-production process about 22% in 2019.

As for wastewater discharge, each of 3 out of 4 of our plants have sufficient size of ground reservoirs to collect all wastewater, so they achieved "Zero Wastewater Discharge Project", except for Thathong plant where there is only wastewater tank which was unable to store all wastewater, so the plant is still in progress of improvement on wastewater discharge. In 2019, Thathong plant has conducted a feasibility study on wastewater treatment unit establishment by Sequencing Batch Reactor (SBR) technique to support the "Zero Wastewater Discharge Project" and not only the water be used for asphalt emulsion production, but this project also aims to seek the possibility of recycling water in other usages, such as watering plants or cleaning shop floor and trucks.

Water Withdrawal and Usage (Mega litre)



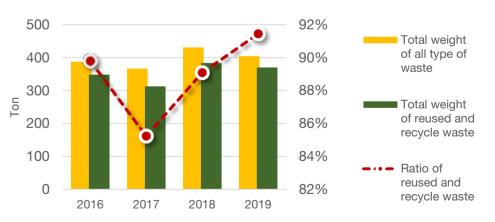
Waste Management | 306-2 | Clause 6.5.3 and 7.4.2 |

This is to ensure the reduction of environmental impact, improvement of efficiency in waste treatment and reducing the cost of disposing of wastes Although we have not achieved the target of ZERO industrial (hazardous) waste disposal to landfill across all 5 plants in 2019. Nevertheless, we have reduced the weight of industrial (hazardous) waste disposal to landfill in 2019 about 60% when compared to that of 2018, that the initiative plans were summarized as follows:

- Promoted on reduction of 'single-use' plastic at Head Office and all 5 plants.
- Reviewed the waste inventory and disposal method of each type of waste.
- Established the Waste Disposal Vendor List for control the disposal method for each waste item.
- Phitsanulok plant has signed the Memorandum of Understanding (MOU) with the Provincial Industry Office on cooperation of waste management.

Total weight of waste and total weight of reuse and recycle waste, declined from 2018 around 4% and 6% respectively. Meanwhile, the ratio of reuse and recycle waste rose from 89% in 2018 to be 91% in 2019.

Total weight and ratio of waste



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Environmental Initiative Summary

CASE 3: Install new hot oil boiler and renovate the storage tank & piping system

Enhanced the energy efficiency and reduced the GHG emissions.

Project Name	Install new hot oil boiler and renovate storage tank & piping system		
Plant	Phrapradaeng		
Objective	Increase Hot Oil Boiler efficiency and reduce GHG emissions.		
Problem	Low efficiency of the existing Hot oil Boiler. They consume high fuel oil and has high emission rate per heating unit.		
Innovative Solution	 Install the new hot oil boiler with economizer (Air Preheater) also they can use/switch between diesel oil and natural gas. Renovate 3 storage tanks to improve the heating coil and insulator. Install new transfer pump size to increase product loading capacity (Reduce energy consumption per ton loading) Renovate the piping system to improve process efficiency also reduce heat loss 		
Expected outcome	 Reduce the GHG emission by 6% per Ton production with in year 2020 Increase Hot Oil Boiler efficiency > 91 % 		
Status	on-going		
Performance	- Reduce the GHG Emission Intensity by 23% (All GHG Reduction Projects of Phrapradaeng terminal such as Centralize Logistic, Storage Tank Renovation and New Transfer Pump, etc.)		



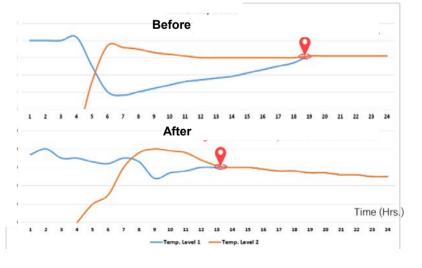


CASE 4: Replace the heating coil and re-design new agitators of mixing tanks

Enhanced the energy efficiency and reduced the GHG emissions.

Environmental Initiat	ive Summary	
Project Name	Replace the heating coil and re-design new agitators of mixing tanks	
Plant	Phitsanulok	
Objective	Increase heat exchange efficiency and reduce GHG emissions.	
Problem	Low heat exchange capacity of heating coil causes heat lost and Long mixing time	
Innovative Solution	 Replace the heating coil of 2 Polymer Modify Asphalt Tank Re-design new agitators of 2 Mixing tanks 	
Expected outcome	 Reduce the heating cost by at least 5 % Increase the heat exchange by temperature differential over 15 oC. Reduce the GHG emission intensity by 4 % (Para Asphalt Cement) 	
Status	Completed in May'2019	
Performance	 Reduce the heating cost by 9 % Increase the heat exchange by temperature differential by more than 22° C Reduce the GHG emission by 11 % (Para Asphalt Cement) Reduce Mixing time about 6 Hr. 	





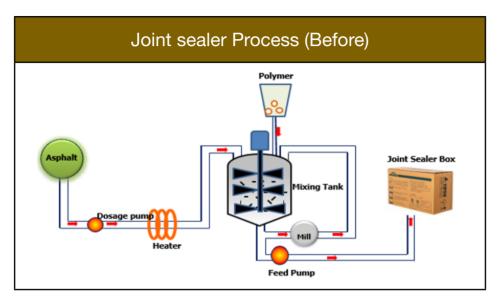
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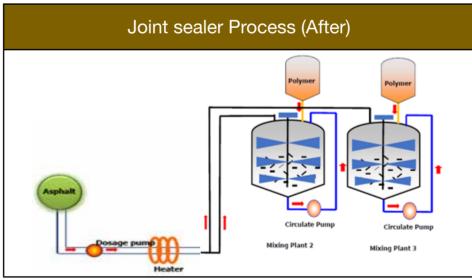
Environmental Initiative Summary

CASE 5: Increase productivity of Joint Sealer production process

Enhanced the energy efficiency and reduced the GHG emissions.

Project Name	Increase productivity of Joint Sealer production process	
Plant	Nakhon Ratchasima	
Objective	Reduce energy consumption and reduce GHG emissions.	
Problem	The material for Joint Sealer production feeding from stock tank required long heating time and high energy consumption with high emission rate to optimize temperature for production	
Innovative Solution	 Re-design of Joint Sealer production process Simultaneously use 2 mixing to double production capacity Renovate the piping system by improving heat exchanger, pipeline and circulation pump. 	
Target	 Reduce the fuel consumption for Asphalt Cement material heating at least by 10 %. Reduce the GHG emission by 4% in 2019 	
Status	Completed in Jun'2019	
Performance	 Reduce the fuel consumption by 30 % / batch Reduce the GHG emission by 10 % (Joint Sealer Product) Increase production capacity from 15 to 30 ton. / batch 	





CASE 6: Renewable energy by Bio Diesel for Hot Oil Boiler

Enhanced the energy efficiency and reduced the GHG emissions.

Environmental Initiat	ive Summary
Project Name	Renewable energy by Bio Diesel for Hot Oil Boiler
Plant	Thathong Plant, Suratthani.
Objective	Reduce heating cost and reduce GHG emissions.
Problem	The current use of diesel fuel for plant's hot oil boiler is major source of GHG emission. The switch to biodiesel from palm oil produced by local communities can lower GHG emission and support the well-being of local economies.
Innovative Solution	Modify Hot Oil boiler system and burner to switch the fuel from diesel to biodiesel
Target	 Reduce the heating cost by at least by 5 % Reduce the GHG emission intensity by 4 %
Status	Completed in Nov'2019
Performance	 Reduce the heating cost by 14 % Reduce the GHG emission by 4.52 %





Center of Excellence for Operations and Distributions

While Creating Least Environmental Impacts











To be the leader in asphalt business, we strive for operational excellence and eco-efficiency led by innovation. All of us will never stop searching for new innovation for sustainability.



Suphat Pipitawan
Operations Director

The UN Sustainable Development Goals



SDG 9: Industry, Innovation and Infrastructure

Promote safety and safe operations for sustainable industrialization led by innovations



SDG 12: Responsible Consumption and Production

Reduce the resource consumption, develop waste management by 3R and save the world by moving toward circular economy.



SDG 13: Climate Action

Develop the GHG Management for reducing the impact on climate change.



SDG 17: Partnerships for the goals

Seek partnership and strengthen the cooperation for mutual benefit on ecoefficiency.

SAFETY AWARENESS







Promote local community members upon skill development/ knowledge training on 'safety' issues as well as healthcare for better quality of life

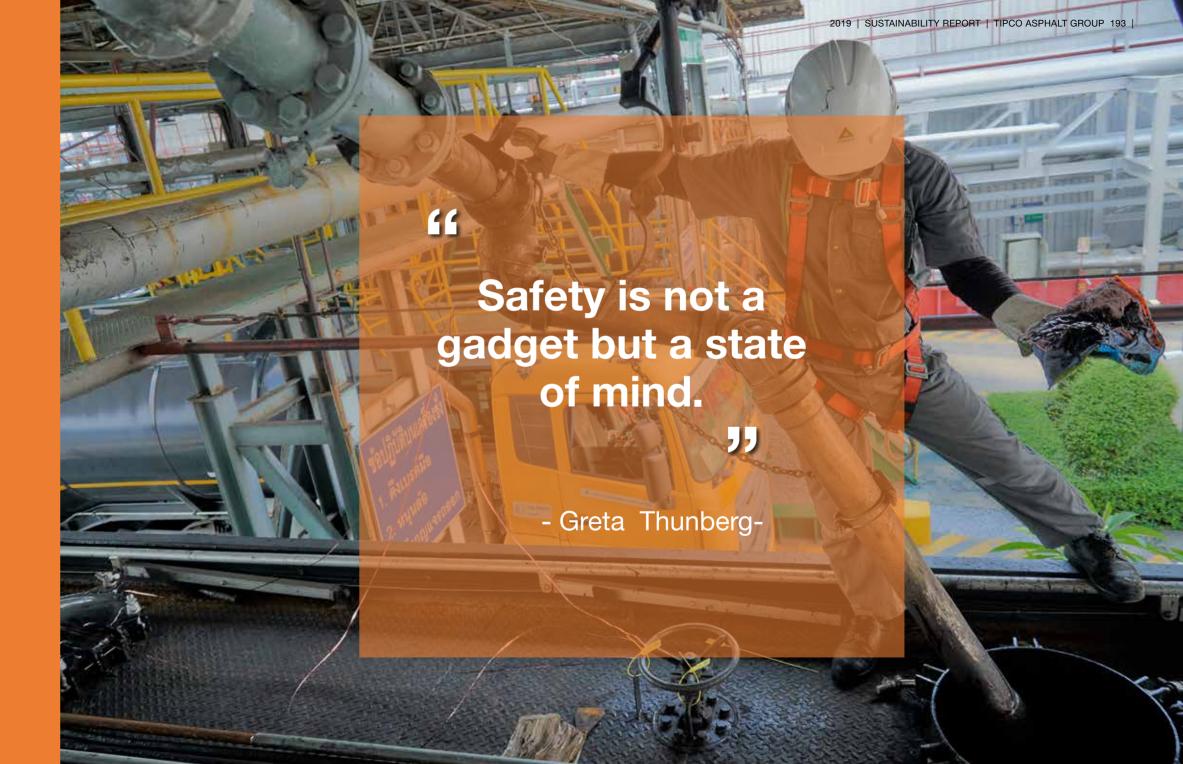


creating Safety in Group's DNA









FY 2019 Performance

There was 1 fatality case and 1 lost time

The severe operation accident frequency rate in 2019 is

The severe truck accident frequency rate

Incidents of non-compliance concerning the health and safety impacts of products and services in 2019 was

injury accident case in 2019

1 Fatality and 1 LTI case

000

000

1.67

0.00

000

in 2019 is

000

CREATING SAFETY IN GROUP'S DNA

Mataviality lague		#24) Establishing Sa Regulations	fety Rules and	#30) Customer Health and Safety			
Materiality Issue	#17) Employee Health & Safety						
Report Topic	Creating Safety in Group's DNA						
Impact & Risk	Potential accidents and personal injury, life loss from work environment & product use, environmental impacts, damage to corporate resources, disrupted business operations						
Social Issue	Safety & Health Issues (Employee & Customer)						
GRI Standards	GRI 403 / GRI 416 ISO Standards ISO 26000: clause 6.4.6 / 6.7.4 ISO 39001 ISO 45001						
SDGs	SDG 3, SDG 4, and SDG 17						
Policy	Road Traffic Safety Management Systems & Integrated Management System Policies						
Stakeholder		al: All Employees al: Government, Visitor, S	upplier, Contractor, Co	ustomer, Community & Road User			
Objective	 Prevent and reduce the work relates accident and ill health of employee and all stakeholder Fulfill the road user requirement and satisfaction on road traffic, products and service safety 						
Responsible	Operations (All plants) / SSHE & SD / HCM						
Strategy	Safety Awareness						
Execution	 Safety Distribution Knowledge Center Valve Status dentification and Interlock System on SCADA 						

 Embed 'Safety' into the corporate culture for good health and well being of all stakeholders. Create and develop safety leadership at all level of Reduce to 'ZERO' Target Zero fatality and lost time injury accident 4 out of 5 plants in Thailand awarded Outstanding Safety Award for a prototype establishment Occupational health and working environment 2018 from Department of Labour Protection 	Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)
 Reduce severe truck accident frequency rate to Not care only our employee, but led to the safety of communities and society. Enhance safety awareness of employees and all stakeholders through the Reduce severe truck accident frequency rate to zero Rayong Plant got award for promoting for reducing severe operation accident to zero (Zero Accident campaign) from Thailand Institute of Occupational Safety and Health (Public Organization) TOSH Severe operation accident frequency rate to zero (Zero Accident campaign) from Thailand Institute of Occupational Safety and Health (Public Organization) TOSH Zero fatality and lost time injury 	 Embed 'Safety' into the corporate culture for good health and well being of all stakeholders. Create and develop safety leadership at all level of employees. Not limits to work related, but also cover to their private life. Not care only our employee, but led to the safety of communities and society. Enhance safety awareness of employees and all stakeholders through the company's OKM, training, campaign, recognition and communication program. Improve and develop the OH&S Management System which are fundamental of consistency on safety culture for all. 	Reduce to 'ZERO' Target Zero fatality and lost time injury accident Reduce severe operation accident frequency rate to zero Reduce severe truck accident frequency rate to zero Zero incidents of non-compliance concerning the health and	 Implemented ISO 45001 to replace OHSAS 18001 4 out of 5 plants in Thailand awarded Outstanding Safety Award for a prototype establishment Occupational health and working environment 2018 from Department of Labour Protection and Welfare Rayong Plant got award for promoting for reducing severe operation accident to zero (Zero Accident campaign) from Thailand Institute of Occupational Safety and Health (Public Organization) TOSH Zero fatality and lost time injury accident in 2018 is 1 case The severe operation accident frequency rate in 2018 is 0.00 Incidents of non-compliance concerning the health and safety impacts of products and services in 	Zero fatality and lost time injury accident Severe operation accident frequency rate less than 1.84 Severe truck accident frequency rate less than 0.34 Zero incidents of non-compliance concerning the health and safety

Impacts:



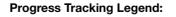


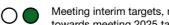














Fall short of interim target for three quarters; review current practices



0 case

Missing interim target for more than one consecutive year; review and revise targets (if necessary)

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OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT





Scan here for Integrated Management

Management Approach | 1403-1 | Clause 6.4.6 and 7.4.2 |

Tipco Asphalt Group has established and implemented the Occupational Health and Safety (OH&S) Management System by OHSAS 18001 and have been certified by certification body since 2006. The Group still maintained and constantly improved our operations. In 2019 we transferred from OHSAS 18001 to ISO 45001 standard, with certificates awarded at HO and all 5 plants, under the existing framework of Integrated Management System Policy. This helps reduce and prevent risks associated with potential diseases and accidents to employees and related stakeholders.

Employees' Health and Safety | 403-9 | 403-10 | Clause 6.4.6 and 7.4.2 |

In 2019, the Group achieved significant improvement on plant operations and road traffic safety in product delivery process with details as follows:

- Conducted alcohol tests on customer's truck drivers at all 5 plants;
- Established Distribution Safety Knowledge Center: the center has intranet database of risky locations along transportation route and safety concerns at customer plant for truck drivers at Nakhon Ratchasima, Thathong, and Phitsanulok plants;
- Assigned Operational Control Officer to monitor truck drivers on duty 24 hours, 6 days a week at Centralize Logistic Office;
- Established visual control dashboard of valve and piping system in order to prevent/ detect for products spillage at Phitsanulok plant;
- Installed the Valve Status Identification and Interlock System on SCADA. Set of sensors
 will be installed in each valve while the results will be shown on SCADA monitoring
 screen and interlocked with products loading function to prevent products spillage
 at Thathong plant;
- Improved loading bay working-station with fall protection system, and;
- Established Work Instruction & Job Safety Analysis JSA accessibility online and Emergency Equipment Inspection via QR code at Thathong plant.

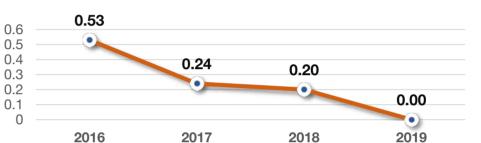


In 2019, the OH&S performance on Severe Accident Frequency Rate (SAFR) of Operation stood at 1.67 case/a million working hours against the target of 1.84 while SAFR of Truck was at 0 case/a million km against the target at 0.34.

Severe Operation Accident Frequency Rate (case/million hours worked)



Severe Truck Accident Frequency Rate (case/million km. transportation)



Although the Serious Accident Frequency Rate of operation process met the 2019 target, we encountered a fatal accident case occurred in March'2020 involving a truck driver unloading asphalt at a customer's plant, then while the products were decreased below burn tube, a fire blast exploded through opening hole an injured a staff on the bulk. Unfortunately,he didn't wear a safety harness according to the safety operation procedure, while such explosion caused him to fall down and hit the ground. The investigation team concluded the route-cause of his death was due to him not following work instruction on wearing safety PPE. Therefore, since 2019, Operational Control Officers to monitor operation of our truck drivers at Centralize Logistic Office. In addition, we launched Behavior Base Safety at Phitsanulok and Thathong plant, as well as Defensive Driving training course provide for all truck drivers 100% in 2019.

In this regard, our plant at Rayong, Nakhon Ratchasima, Thathong, and Phitsanulok were awarded with the "Outstanding Workplace Award for 13, 7, 7 and 2 consecutive years, respectively. Besides, Rayong plant has been awarded with "Zero Accident Campaign Award 2019 (Silver)" by Thailand Institute of Occupational Safety and Health.

Note

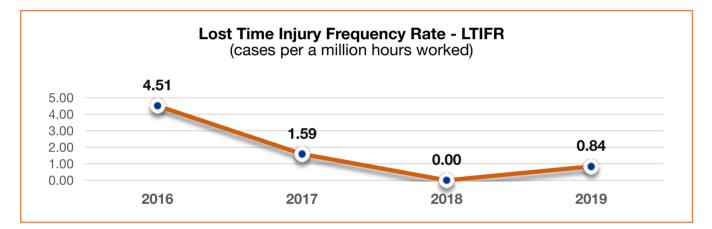
"Severe Accident" is the accidents that cause employee injury then consequence to lost at least a workday (or more) for recovery, which including to the death, and the property damages 50,000 THB and above.

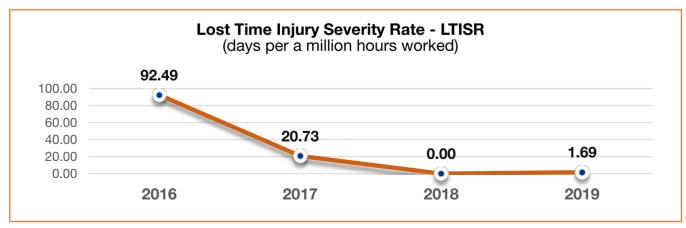
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OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

For the lost time injury in 2019. The frequency rate stood at 0.84 and the severity rate at 1.69, with only one case of lost time injury about our employee with backpain due to his manual lifting of drain grating during 5S activity against the work instruction on manual lifting and carrying protocols. The route causes are lack of ergonomic knowledge and personal physical condition awareness (fit for work). Key corrective actions are staff communication through Kiken Yoshi Training - KYT on ergonomic knowledge and self physical condition assessment prior to works.





Establishing Safety Rule and Regulation 1403-4 1 Clause 6.4.6 and 7.4.3 I

In 2019, we had established and revised Occupational Health and Safety (OH&S) rules and regulations in order to prove quality of OH&S and Environmental documents while standardizing these practices across 5 plants in Thailand. The examples of such establishment and revisions are:

- Procedure,
- Occupational Health and Safety Management (revised),
- Work Instruction.
- Hazard Identification and Risk Assessment for Road Traffic (revised),
- Emergency Preparedness and Response (revised),
- Providing and Control of Safety Data Sheet for Material (established).
- Alcohol Testing by Breath (revised),
- Accident Notification, Investigation and Reporting (established new by separating the existing emergency preparedness and response document) (revised),
- Quantitative measurement, calculation and reporting greenhouse gases emission (established),
- Safety and Environmental Monitoring and Measurement.

"Job Safety Analysis - JSA Learning Center" is the highlight project on safety documents in 2019 at Thathong Plant, Suratthani that made the JSA & Work Instruction documents is available, up to date, and easy to access via QR code anywhere and anytime.

Vote:

"Lost Time Injury" refers to accidents that cause employee injury coupled with consequential work time lost at least a workday for recovery. Nevertheless, LTI concept does not apply in case of employee fatality, which will be covered under different.











OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT

Occupational Health & Safety of Outsourced Service Providers & Contractors

I 403-1 | Clause 6.6.6 and 7.4.1 |

Tipco Asphalt Group places emphasis on occupational health and safety not only for our

- Safety Orientation Training
- Job Safety **Analysis**
- Safety Qualification Competence Review
- Heavy Tool Inspection

Operational **Execution &**

Accident

Case for

Contractor

in 2019

employees but also for our outsourced service providers and contractors who perform their works on our sites. Therefore, all 5 of Thailand Operations plants develop work instructions for contractor safety management, with key procedures below. Our KPI focuses on contractor's lost time injury accident which stood at zero case in 2019.

> Control Plant Access Control

 Alcohol **Testing**

 Permit to Work System

Work Safety Inspection

Occupational Health & Safety of Customers | 102-43 | Clause 6.7.4 and 7.5.2 |

All 5 Thailand Operations plants conducted a customer survey to seek their opinions on TIPCO Group perform an alcohol test on their drivers to prevent road accidents and ensure safety practices survey results indicated that 100% of customers agreed to support initiative and hence we have conducted alcohol test on customers' drivers since Feb 2019.

100% 100% of 13 of customer's drivers of customer's drivers surveyed customers who took product are fully complied wit upport this program delivery at our 5 our safety standard. plants, have been

Safety Training for Customers | 102-43 | Clause 6.7.4 and 7.5.2 |

In 2019, Domestic Sales & Marketing hosted "Customer Visit & Knowledge Sharing 2019" program at Phitsanulok Plant. Plant SSHE unit supported this event by providing the safety training on "Personal Protective Equipment (PPE)" and "Basic Fire Fighting" for our customers.





Community Health & Safety | 413-2 | Clause 6.8.8 and 7.5.2 |

Phrapradaeng Terminal "Good Health and Well Being Workplace" project in 2019 to promote health activity such as exercise activity for employee and dengue fever prevention campaign for community nearby the plant.





Research Project on Road Traffic Safety Management System (RTSMS)

I 413-2 I Clause 6.8.8 and 7.5.2 I

In 2019, Phitsanulok Plant sponsored researed team of Naresuan University on "Estimating the Economic Worthiness of Workplace for Implementation of Road Traffic Safety Management System (ISO 39001)". Despite research results indicated insignificant economic worthiness, we will continue to work for sustainable road traffic safety of all stakeholders.



โครงการการประเมินความคุ้มค่าของสถานประกอบการในส่วนการขนส่ง ์ ที่ดำเนินการตามระบบมาต[ุ]รฐานความปลอดภัยทางถนน ISO39001

> พดตาน พันธเณร เฉลิมภัทร พงษ์คาจารย์ ภัคจิรา นักบรรเลง ภาควิชาเศรษฐศาสตร์ คณะบริหารธรกิจ เศรษฐศาสตร์ และการสื่อสาร มหาวิทยาลัยนเรศวร







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CASE 7: Safety Distribution Knowledge Center

Occupational Health & Safety Initiative Summary

Prevent and reduce the work relates accident and ill health of employee and all stakeholder.

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Project Name	Safety Distribution Knowledge Center			
Plant	Nakhon Ratchasima			
Objective	Create the online communication about risk on transportation route and at customer plant for our truck driver.			
Problem	There are a lot of risk points on transportation route and at customer plant that need to communicate to our truck driver, while the paper base information is low efficiency communication and can not be up to date in time.			
Innovative Solution	 Establish the intranet base website with application My Google Map for marking the risk points on route and at customer plant. Our truck driver can give their feedback for updating the change of risk point on route when they came back to plant through LINE group and weekly meeting. SSHE and Distribution function team cooperate for updating the database every week 			
Expected Outcome	 Our truck driver have learn about risk points on route and at customer plant before trip start easier, anywhere and any devices (which can online) Database have been up to dated periodically. 			
Status	Completed Oct'2019			



Above photo; Risk communication by paper base Below photo; Online risk communication that able to be access by any devices.



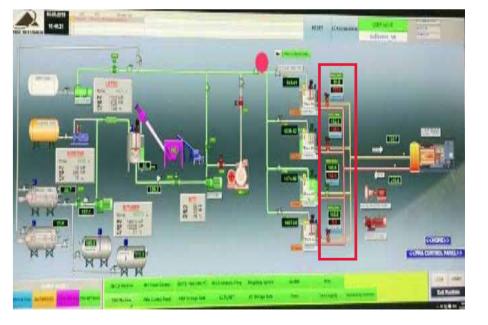
CASE 8: Valve Status Identification and Interlock System on SCADA

Prevent and reduce the work relates accident and ill health of employee and all stakeholder.

Occupational Health	& Safety Initiative Summary	
Project Name	Valve Status Identification and Interlock System on SCADA	
Plant	Thathong Plant, Suratthani.	
Objective	Prevent the human error on valve operating then lead to products spillage when loading to the truck.	
Problem	Recently, there are a lot of valves and pipe line that have a changes for mistake about on/off valve in any pipe line when loading the products to the truck, and the status of valves are not easy to be control by visual.	
Innovative Solution	- Install the sensor to monitor the valve status then link to show the result on monitor screen of SCADA system and programmed the interlock system that will not start operation if the valves are not be open/ close correctly.	
Expected Outcome	- Reduce the accident about major products spillage during loading process.	
Status	Completed May'2019	
Performance	- Zero case of accident about major products spillage during loading process since the system have been installed since Jun'19.	









TRUCK FLEET SAFETY | 1403-8 | Clause 6.4.6 and 7.4.2 |

The transportation of asphalt and other products is core to our business, and a key part of the service we provide for our customers. We take the well-being of our drivers very seriously and take every precaution to ensure their safety and that of others.

The Group realizes the importance of road traffic safety at the maximum level and hereby commits to safe ground transportation activities, reducing chances for accidents or impacts to stakeholders along transportation routes while promoting work safety during delivery. This was achieved through development of road traffic safety management system. Since 2015, the Group was certified with ISO 39001: 2012 (Road Traffic Safety Management system) for all 5 local plants in Phrapradaeng, Phitsanulok, Nakorn Ratchasima, Rayong, Suratthani including the Head Quarter in Bangkok. This greatly helps improving upon satisfactions not only from our customers, but also other stakeholders related to the Group's transportation services. This marks one of the Group's prides on our role to help reducing road accidents, in line with the government's direction toward "decade of public road safety".

"Our products must be delivered to our customers on time, with safety and reliability" This statement serves as cornerstone and key responsibilities of our business operations. In 2019, the Group delivered products more than 19,887 times, encompassing 8,161,558 kilometers in total delivery route nationwide, including some neighboring

countries. We employ more than 165 truck drivers and more than 240 truck fleets to service our customers (excluding external delivery vendors). In order to achieve our aforementioned objective, we place great emphasis upon truck drivers, truck units and delivery routes, with work guidelines as follows:

- Each of our drivers is required for training and full awareness of risk assessments. Each driver must be able to plan for risk controls and preventive actions associated with product delivery across each route.
- All staff is required for development training and skills for defensive driving. Also included is a sense of social responsibility associated with basic road safety.
- Each delivery truck unit must be thoroughly inspected and assessed for readiness and safety prior to each product delivery
- Each product delivery route will be carefully planned and under centralized logistics tracking system to ensure that our drivers have safe driving throughout delivery routes.





Truck Driver with Safety Harness

Mobile GPS Tracking Navigator









Temperature



CCTV Monitor



Navigator



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ASPHALT DELIVERY WITH SAFETY

Serving our customers can involve long-distance transportation of fuel and other extremely hazardous liquids – sometimes across very dangerous terrain conditions or through rural villages under poor roads and infrastructure. Although our regional operations use contracted outsource transportation service providers, we implement very strict standards and processes when contracting haulers to ensure that we appoint reputable and reliable service providers that manage their own operations in a prudent, safe and sustainable manner.

Our vehicle fleets can fully accommodate product delivery with far distances, particularly in Northern and Southern regions where delivery routes are mostly mountainous and rough terrains. With our highly experienced drivers who are also highly familiar with these routes, we can handle all delivery requests by our customers. As part of our commitment to ensuring that our products are transported safely, and to the health and well-being of the drivers making these long runs, they are provided with sleep bunks, GPS tracking and satellite phones.

We are proud of our long-term safety records and conduct regular audits and assessments, which enforce high standards that help to ensure the transporters we select to manage their operations effectively and maintain their vehicles to our exact requirements. This reduces the number of incidents, such as spillages and product contamination that trigger negative impacts on the environment while reducing accidents, especially fatalities. However, we recognize that our trucks contribute to the increasing road traffics that represents one of the largest risks to people in the countries in which we operate. Supporting road safety campaigns is a key activity across our businesses and our aim is to reduce road traffic incidents.

TIPCO TRANSPORTATION-AS-A-SERVICE

Our use of transportation vehicles grows in proportion to our sales therefore the Group places emphasis upon public road safety as we increase more traffic risks. The Group, by the Operations department, implements several key controls to ensure maximum safety; for instance, Truck Fleet Safety System. Tipco Asphalt

Group aims to keep staff, communities, facilities safe while respecting human rights and security of local communities. We are instilling a "Safety Culture" and embed in our staff's DNA starting from process safety management while raising safety standards across the Group. This approach is not a new concept. The Operations department

would also focus more on safety issues and initiatives which we plan to deploy from 2020 onwards for all employees and contractors.



Inventory Management

- Raw material supply : Chemical, Asphalt cement.
- Finish goods all plant.



Sale Order Management

- Order status.
- Order Assignments.

Management Truck Fleet Management

- Tipco fleet
- Out source fleet
- Back haul (Optimization)



Centralizaed

Logistic

Database Management

- Analysis
- Reporting

CENTRALIZED LOGISTIC PROJECT AT PHRAPRADAENG TERMINAL: WORKFLOWS



ALCOHOL TESTING FOR ASPHALT TRUCK FLEET PROCEDURE

Study delivery route

Outgoing Check

Driving to destination

Deliver products

Return to Plant



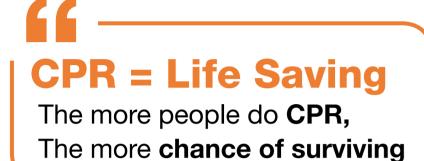




We implemented an effective alcohol testing procedure which involves obtaining breath samples from truck drivers for alcohol detection prior to their departure for delivery and arrive back to the plant The program helps preventing potential accidents and injuries caused by misuse of alcohol or use of controlled substances by truck drivers.



CASE: 9



Majority of people do not know how to do CPR* and cannot use AEDs*, which can save lives

First aid rescuers with a heart pump can save lives of patients who suddenly stop breathing from heart conditions e.g. drowning, suffocation from food clogging. If get trained, the heart can beat again without causing aphasia to the patients.

Everyone can learn how to do CPR if they are properly trained by medical professionals. The training courses require standardized basic equipment for the trainers to understand the methods and they are required to practice several times to ensure they are able to do CPR in case of emergency.

Basic Life Support

Training

for having the opportunity to save many lives with

Cardiopulmonary Resuscitation

Everyone has the opportunity to increase the chances of surviving for friends, families, as well as people in society.





Project Name	Save Lives for All						
Project Started	2018	Continuous Project			2 nd Year		
Objective	To help patients with cardiac emergencies or choking instances Train our staff to be trainers						
Strategy	Save lives with our hands						
Project Partner	CP Group, Thai Resuscitation Council						
Impact Assessment	Work in partnership with others to provide effective CPR						
CPR Training	Participant		2018	4	2019	Total	
CPR Instructor Course	Tipco Aspha	alt	12		26	38	
CPR Provider Course	Tipco Aspha	alt	96		177	273	
	Community	y	0		113	113	
CPR Demonstration Course without certificate	Community	у	0		40	40	

Community

Community

All Stakeholders

CPR - Cardiopulmonary Resuscitation

CPR is an emergency procedure that combines chest compressions often with artificial ventilation in an effort to manually preserve intact brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person who is in cardiac arrest. It is recommended in those who are unresponsive with no breathing or abnormal breathing, for example drowning, suffocation from food clogging.

Sub-Total Impact on CPR

Joint Project with CP Group

from Tipco Group

Total impact

CPR alone is unlikely to restart the heart. Its main purpose is to restore partial flow of oxygenated blood to the brain and heart. The objective is to delay tissue death and to extend the brief window of opportunity for a successful resuscitation without permanent brain damage.

AED – Automated External Defibrillator

108

108

AED is the machine that can restart the heart. An AED helps regaining the natural rhythm of the heartbeat as well as restarting the patient's heart. After performing CPR and if the patient is still non-responsive an AED should be used manent brain damage.

356

600

956

464

600

1,064

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CPR Training; Joint project with CP Group 1413-2 1 Clause 6.8.8 and 7.6.1 I



Tipco Asphalt have started the CSR Activity on CPR & AED Training since 2018, and continue to 2019 that we have done the CPR & AED training for our employees and external stakeholder over than 600 people, and 37 volunteer employees have got advance training to be the registered CPR Instructors by Thai Resuscitation Council (TRC). By recommendation of TRC, we have joined CP Group on the project of "Training for Basic Life Support for Ministry of Interior" during Jan – May'19.



"We're so happy to be a partner of CP Group to support this project. They have experienced for many years and willing to share us for achievement in the same goals - save the life of people."

Kittichote Ngamprasiti.

Senior Manager - Safety, Security, Health and Environment Manager (SSHE)

"CP Group emphasize and aware on safety of people and employee at anywhere such as workplace, home and community. Therefore. CPR Training is important project to enhance the safety standard of living through voluntary of employee and people."

Punthanariga Linhart

Special Project Executive, CP Group

"CPR Training has promoted everybody to understand the important and learn how to safe the people life with encourage all of us can do the resuscitation that CP Group has supported all employees and people on this training for many years."

Pronthana Chunsawang

Special Project Coordinator, CP Group







Pol. Maj. Gen. Dr. Sophon Krisanarangsan Senior Advisor of Thai Resuscitation Council Project Executive Instructor

"CPR is very important for general public as key basic lifesaving skill during emergency situation which must be conducted promptly, accurately and effectively. As the heart stops beating, the brain only has 4-minute duration before becoming ischemic stroke (lack of blood to the brain).

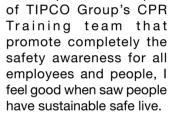
In Thailand, around 60% of heart failure incidents occur off-premise of hospitals while merely 1% of country population are properly trained with CPR knowledge. These statistics inspire me to initiate CPR training programs for general public, to maximize accident survival rate before patients reaching hospitals.

It is very important to establish CPR knowledge sharing network across various segments such as schools, medical homes or business organizations. Proper developments of standard documentations. textbooks, correct procedures, equipment for training: these require mutual collaboration among related parties while the most important issue is to raise public awareness upon safety as basic first aid is just measure in response to non-safety situations/accidents. The kev is to create safe environment condition to ensure maximum safety.

TIPC Asphalt Group is network partner that I am very proud to be part of and I support training programs, knowledge practices. This is because I clearly see the Group's strong intentions upon social responsibility and basic lifesaving trainings via CPR, hence serving as good corporate citizen while promoting the nation's public health developments."

CPR training program of TIPCO Asphalt Group (at Head office and 5 Thai plants)





project to success.

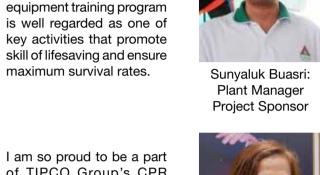
TIPCO Asphalt Group

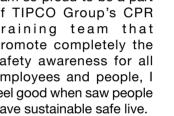
encourages all staff to

volunteer upon various CSR

programs. CPR and AED

maximum survival rates.











Officer, Suratthani Project Owner







Proiect Owner

Center of Excellence for Promoting "Safety First"

to Everyone in the Communities/Societies













To build world-class safety culture, innovative solutions for safety awareness and systems improvement are key. We strive for everyone's safety: come safe, work safe and go home safe.



Kittichote Ngamprasiti Senior Manager - Safety, Security, Health and Environment Manager (SSHE)

The UN Sustainable Development Goals



SDG 3: Good Health and Well-Being

Ensure our stakeholders are safe & have a good health and prevent the accident for well-being of all.



SDG 4: Quality Education

Develop the safety training to promote safety awareness of all stakeholders and encourage lifelong learning.



SDG 9: Industry, Innovation and Infrastructure

Promote safety and safe operations for sustainable industrialization led by innovations.



SDG 11: Sustainability Cities and Communities

Promote road safety both of our products distribution process and road infrastructure for all road users in our communities.

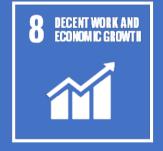


SDG 17: Partnerships for the goals

Seek partnership and strengthen the cooperation for mutual benefit on health and safety

STRONG CORPORATE GOVERNANCE TRANSPARENCY







Companies can achieve certain competitive advantages through enhanced transparency and effective corporate governance framework communicates to its stakeholders.



offering most **Trusted Asphalt**

Products & Services







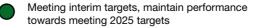




OFFERING MOST TRUSTED ASPHALT PRODUCTS & SERVICES

Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)	FY 2019 Performance
TIPCO ASHALT 4.0 CUSTOMER JOURNEYS	Create impressive customer experience through superior products and services	1) Customer satisfaction rate 85% - Domestic Market: 87% - International Market 82%	1) Customer Satisfaction Rate target to be over 85%	1) Overall Customer Satisfaction Rate = 87% (from Depth Interview) - Domestic Market: 86% - International Market: 88%
		2) Product and Service Complaints - Number of complaint: 19 - Resolved within timeframe: 17 Complaint Response 89% - Product Complaint 12 cases - Delivery Complaint 4 cases - Others Complaint 3 cases	2) Complaint on Product and service need to be solved 100% within timeframe - Product issue 3 days - General issue 1 day	2) Received 20 complaints and resolved all issues 100% within timeframe - Product Complaint 8 cases - Delivery Complaint 4 cases - Others Complaint 8 cases
		3) Product Recall / Return Zero Case	3) Product Recall / Return Zero Case	○ ○ ●3) Product Recall / Return Zero Case
3 STOROHEALTH AND WILL HE ME 8 SECENT WORK AND SCHOOLS GROWTH		4) CRM/CSR with Customers	3) CRM/CSR with Customer 3.1) Product Seminar 3.2) CRM/CSR Activities	O CRM/CSR 4.1) Domestic - Product Seminar - CRM/CSR 4.2) International - Product Seminar

Progress Tracking Legend:





Fall short of interim target for three quarters; review current practices



Missing interim target for more than one consecutive year; review and revise targets (if necessary)



Impacts:

















2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 220 |

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 221 |

TIPCO ASPHALT PRODUCTS & SERVICES ARE MADE WITH PASSION FOR QUALITY | 102-7 | Clause 6.7.3 |





Scan here for Sales policy

leading the market through our high product quality, while meeting even most stringent customer expectations.

Management Approach

Superior product quality is our signature that Tipco Asphalt keeps as a top priority since we started the business. All Tipco Asphalt products meet the highest quality and reliability requirements across all our markets

Product Quality & Reliability is organized at a company level, but it is also embedded across all Tipco Asphalt Group. The management team brings together (product quality inspection) directors from across entire business operations; front-end and back-end manufacturing, product group, sales, and services. This makes the deployment of our quality strategy and quality programs throughout the Group much more efficient.

Our approach to product quality is based on the Quality Management System (QMS), as documented in our Quality Manual. The manual contains details on how we implement the processes that guarantee our products and processes meet or exceed, customer requirements.

Leveraging QC Service | 102-7 | Clause 6.7.3 |

New investment in our Thailand facility on new equipment to perform Flexural Fatigue Test on Hot Mix Asphalt according to AASHTO* Standard. This helps us to predict the service life of pavement to better serve customers in the Asia Pacific region. Through investments like this, we are constantly striving to improve our offering and help our partners around this region achieve their objectives –



*AASHTO is American Association of State Highway and Transportation Officials

Quality Control	2016	2017	2018	2019
% of Product recall	0	0	0	0
% of Product returned compared to sales volumes**	0.002	0.003	0.015	0.010
% of Calibration of QC tools	100%	100%	100%	100%

Xavier Guyot

Senior Manager,
Research and Development



"

Quality is more than making a good product.

At Tipco Asphalt, our management systems plays a central role to constantly drive our business improvement, innovation and operational excellence.

Our Quality Control laboratories (all ISO certified) perform all required tests to ensure that products manufactured in our plants meet all specifications prior to delivery to customers.

Research & Development has always been a major strategic priority for Tipco Asphalt.

Our R&D Center is certified with ISO/IEC 17025. The center, located close to Bangkok, meet our partner's specific requirements with specially designed innovative products, solutions, and processes.

HIGH-QUALITY PRODUCTS & SERVICES | 102-7 | Clause 6.7.3 |

Constantly improve products & services performance and efficiency

We deliver more efficient, high-performance asphalt product solutions, which help our customers to work easier, save costs while minimizing environmental impact. Product-efficiency targets and KPIs are integrated into our employee's performance management planning. Tipco Asphalt focuses on performance - and energy-efficiency as well as the use of materials. We strive for improving product performance & efficiency, making better use of resources, working towards our climate target, and providing sustainable solutions for everyone. What our's ultimate goal is staying one step ahead of customer needs on efficiency delivers customer value and aligns with our business strategy, while reducing the negative impact on the environment.



Akechit Jumpatip

Plant Manager,
Phitsanulok Plant

With proficiency testing (PT), our products are offered at its best quality and meet specifications.

Proficiency testing is a crucial laboratory tool performed to verify the accuracy and reliability of its testing. It can also be used to validate the entire testing process, including the competency and expertise of testing personnel. Our quality control ensures that all product quality remains consistent across three years of the program, with each production plant reporting positive testing results.

TIPCO Asphalt Group implements quality control for laboratory calibration through Proficiency Testing Program, temperature calibration, hosted by lab facilities that are certified with Proficiency Testing Provider Accreditation. This is to ensure quality assurance while creating confidence upon

calibration results of the temperature measurement instrument which is very crucial upon the production process, and quality control of final asphalt products.

In addition, laboratory facilities of TIPCO Asphalt Group participate in Thai Asphalt Laboratories correlation program for Interlaboratory comparison (ILC) to exchange and compare knowledge, expertise, and new techniques for testing in order to ensure quality assurance while not only creating confidence upon lab results but also encourage mutual collaboration among asphalt laboratory. This activity is conducted 2 times a year.



Hugues de Champs
DCEO International Business



We would all benefit from getting to know customers better."

We must fully understand our customers' needs in order to serve them accordingly.

Our long-term, great mutual relationship with customers are our pride while we believe this reflects our constant efforts to find the most sustainable, cost-effective solutions to meet complex requirements and challenges.

Regular "Walk the Talk" with our customers while offering the most up-to-date asphalt/ road technology. This is to create a full range of competitive advantage works while enhancing the relationship with our customers. With our 'Client-Centric' principle, we upgrade our service lineups to encompass both online and offline platforms, with a strong focus on customer experience. This strategy has increased customer satisfaction from 84.5% in 2018 to 87.00% in 2019, accordingly.

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 222 |

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 223 |

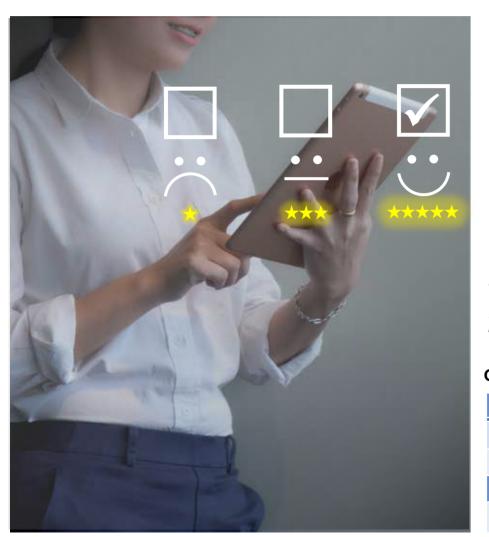
OUR ASPIRATION ARE SMILES AND IMPRESSIONS FROM CUSTOMERS 1 102-43 1 Clause 6.7.61





Scan here for Sales policy

responding the needs of customers to support their businesses and increase satisfaction rate.



Management Approach

We enhance our competitiveness through quality products and services. Our business growth goals focus on creating sustainable values across value chain, introducing innovation in the process, enhancing competitive advantage by adding value to customers while minimizing impacts to society and the environment.

We are constantly striving to develop new products and processes that meet our quality and safety standards while lowering environmental footprints.

'Client Centric' strategic goal helps us win more businesses by move towards customer-based insights coupled with digital transformation to match their needs. This 'shift' beyond product proves that customer prefer to work with partners deeply understand their needs and expectations. This strategic goal allows us to earn great trusts from our customers while enhancing customer satisfaction survey and customer engagement, accordingly.

Steve Jobs

"Some people say, "Give the customers what they want." But that's not my approach. Our job is to figure out what they're going to want before they do....

....People don't know what they want until you show it to them. That's why I never rely on market research. Our task is to read things that are not yet on the page....."



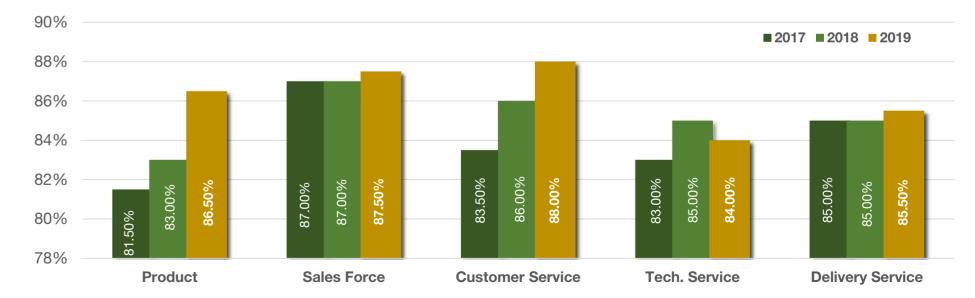
OVERALL CUSTOMER SATISFACTION

Customer Satisfaction	2017	2018	2019
Domestic Satisfaction	87.0%	87.0%	86.0%
International Satisfaction	85.0%	82.0%	88.0%
Overall Satisfaction	86.0%	84.0%	87.0%
Target of Satisfaction	85.0%	85.0%	85.0%

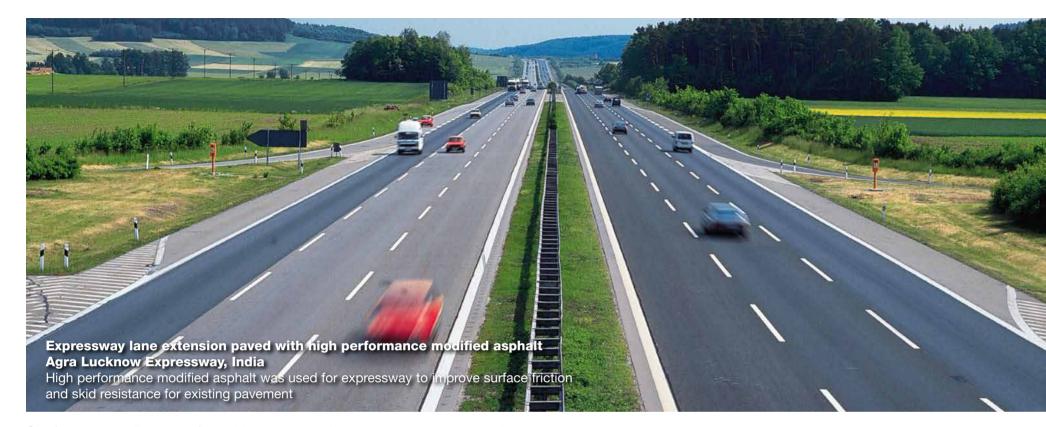
CUSTOMER SATISFACTION: BREAKDOWN DETAILS | 102-43 | Clause 6.7.6 |

Product & Service Satisfaction 87.0%

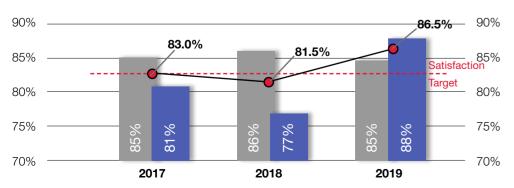
Category		Actual 2017	Target 2018	Actual 2019	Target 2020
	Product	81.5%	83.0%	86.5%	86.0%
	Sales Force	87.0%	87.0%	87.5%	87.0%
2	Customer Sales Service	83.5%	86.0%	88.0%	88.0%
	Technical Service	83.0%	85.0%	84.0%	85.0%
	Delivery Service	85.0%	85.0%	85.5%	86.0%



2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 224 |



Our focus on quality was reflected in 2019 annual customer survey results, where domestic customers rated on the product issues scored at 85% hence clearly showed that they trusted Tipco Asphalt products. Meanwhile, international customers rating on the product issue stood at 88% and the average rating from all customers on the product issue was at 86.5%, an improvement over 81.5% and 83% in 2018 Customer Satisfaction actual score and target, respectively.



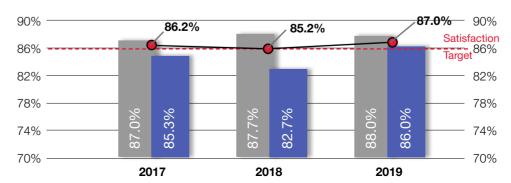
Product Rating	2017	2018	2019
Domestic Customer	85.0%	86.0%	85.0%
International Customer	81.0%	77.0%	88.0%
Ave. Product Satisfaction	83.0%	81.5%	86.5%
Target of Satisfaction	85.0%	83.0%	83.0%

Domestic Customer

International Customer



"Knowing Me, Knowing You" was one of our successful strategy we implemented to develop proactive customer services while delivering great customers' experience as we thoroughly analyzed and understood their needs and supported them. This resulted in **an increased satisfaction rate from 85.2**% in 2018 up to **87.0**% against the 86% target. Such big improvement was mainly from the international business which increased from 82.7% to 86.0%.



All Services* Rating	2017	2018	2019
Domestic Customer	87.0%	87.7%	88.0%
International Customer	85.3%	82.7%	86.0%
Avg. Services* Satisfaction	86.2%	85.2%	87.0%
Target of Satisfaction	86.0%	86.0%	86.0%

Domestic Customer

International Customer



SALES TEAM

Our sales team works together to ensure business transparency while promoting sustainable product offering that contributes to customer's sustainability goals, strengthens brands and builds customer loyalty. As seen by our eco-product range share of sales, an efficient product offering is a profitable strategy for Tipco Asphalt. We build trust authentically. Customer-centricbusiness focuses on a thorough understanding of our customers' needs and

fulfill them accordingly. Our approach not only attempts to minimize customers' pain-points along their business journeys but also introduces technology to solve their problems and ultimately increase customer satisfaction.

Please click here to view tour CRM training VDO we use for our sales team

Sales Rating 2017 2018 2019 **Domestic Customer** 87.0% 88.0% 88.0% International Customer 89.0% 86.0% 87.0% Avg. Sales Satisfaction 88.0% 87.0% 87.5% Target of Satisfaction 87.0% 87.0% 87.0%

SALES SUPPORT TEAM

Our services support team not only resolves customer's issues but also provides valuable supports to the sales team. Customers' understanding and communication are the keys. Our customer support team has good understanding of customers' demands with great, long-term relationship that extends across generations of customers. They listened to our customers, acknowledged their concerns and corrected them, accordingly. Our sales support has the ability to help a business grow by being able to help identify and define best practices and share among the support team within the Tipco Asphalt Group.

DELIVERY TEAM

The Phrapradaeng Distribution Center, more than 240 trucks and 2 docks are our service facilities that can fully accommodate asphalt product delivery for Thailand domestic customers. The heart of road paving business are to ensure on-time delivery quality/standard products in full quantity and specifications. Therefore, our delivery team must ensure smooth delivery operations with tracking progress and ensuring the proper asphalt delivery with the required temperature. Apart from day-to-day services, our delivery team – Centralized logistic improves the service level by co-projecting with IT team to use the digital solution in order to give faster services and "wherever, whenever" tracking order by customers.

Support Rating	2017	2018	2019
Domestic Customer	88.0%	86.0%	89.0%
nternational Customer	87.0%	81.0%	87.0%
Avg. Support Satisfaction	87.5%	83.5%	88.0%
Target of Satisfaction	86.0%	86.0%	86.0%

Delivery Rating	2017	2018	2019
Domestic Customer	86.0%	89.0%	87.0%
nternational Customer	80.0%	81.0%	84.0%
Avg. Delivery Satisfaction	83.0%	85.0%	85.5%
Target of Satisfaction	85.0%	85.0%	85.0%

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CUSTOMER COMPLAINTS MANAGEMENT SHOWING OUR SINCERITY FOR COOPERATION 1 102-43 1 417-2 1 417-3 1 Clause 6.7.6 I

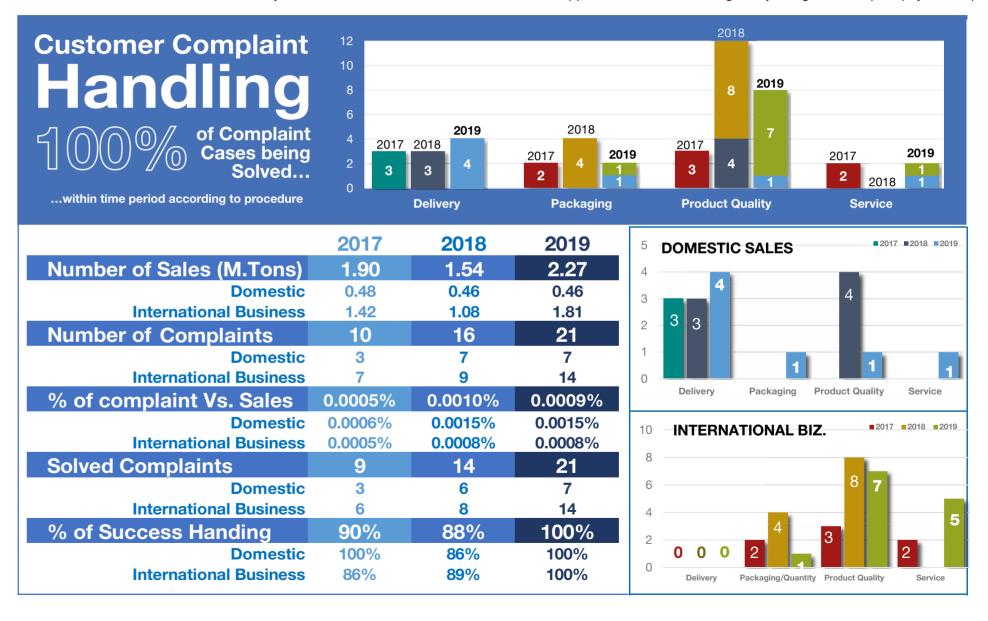
Customer Complaints Customer complaints management by phone corporate website in person Inform Customer / Customer ... **Satisfaction Survey** We constantly strive to deliver the best services then we need to gain customer insights from their feedbacks including how we **** accommodate their complaints. Our comprehensive complaints Report channels management process helps identify service improvement actions. For any complaint, such process must completed within We provide multi-channel customer service supports, with convenient access and live customer service staff to accommodate our customers **Record the Complaint (CA)** requests and complaints. Last stage of complaint investigation involve compilation of **Receive Complaints** investigation report to provide details on complaints and solutions served as reference for future similar issues. The time length is Forward to **Responsible Units** Highly experienced, senior customer service staff are assigned to receive customer complaints, analyze the issues and then forward to related responsible units/ individuals within the organization. **Complaint Request Issuance Corrective Actions** Investigation Upon the acknowledgement of a complaint issue After investigation, senior customer service personnel will issue General thorough investigation is conducted to identify the the complaint request and follow-up with responsible departroot causes, followed by prompt corrective action ments/ persons for conducting prompt corrective actions. We plans including preventive measures to ensure will make sure that all issues be resolved.

such issue would never re-occur.

PERFORMANCES OF CUSTOMER COMPLAINTS HANDLING: Domestic and International Business

FEEDBACKS DRIVE CONTINUOUS IMPROVEMENTS

We always keep close monitoring on customers' feedbacks and complaints as they provide great insights for future business improvements. We take into serious considerations on most of our customers' comments while not only the issues are resolved but also the customers appreciate that their voices got fully recognized and promptly acted upon.



CLIENT-CENTRIC IS ONE OF OUR 6 STRATEGIC GOALS | 102-43 | Clause 6.7.3 |

"A customer-centric way of doing business is a way that provides a positive customer experience before and after the sale in order to drive repeat business, enhance customer lovalty and improve business growth."

Becoming a truly client centric organization takes time, but we started of all small. We share 6 experiences to eventually become a client centric company by putting customer first at the core of our business. We combined Client Centric (Customer Centric) and Customer Relationship Management (CRM), which we use customer data to enhance the customer experience by customizing a positive experience and build long-term relationships.



OUR CUSTOMER FIRST: OUR CUSTOMER EXPERIENCE PROGRAM 1 102-43 I Clause 6.7.3 I

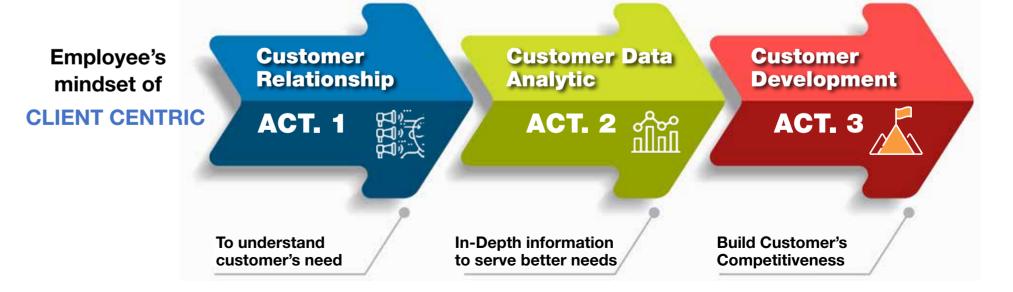


Our drive to improve as a customer centric company starts with our Customer Value Proposition. The only thing that matters to us is what matters to our customers. Through continuous, regular collection of performance feedback, we learn what we are doing well and where we're falling short.

We have designed a holistic Customer Experience approach which focuses on eight touchpoints, which are specific events or activities defined by our customers as crucial to their relationship with us. These touchpoints are very crucial that we must fully accommodate to meet customers' demands. The program aims to:

- Effectively and rapidly address customer needs and issues arising from feedbacks throughout entire customer journey.
- Incorporate customer insights in standard business processes and use customer feedback data to establish long-term strategies, inform business decisions and drive continuous improvements.
- Strengthen a customer-oriented mindset across our organization.
- Transform business model from manufacturer to a creator to complete solutions and innovations in living products and services that meet the needs of customers.
- Encourage employees to develop knowledge and skills, having working approach and having capabilities to find true customers' needs through the Design Thinking process.
- Implement technology to support data analytics to create new business model that reach diverse customers in a rapid manner.

We piloted the Customer Experience program in 2017 and started the roll out to our clusters at the start of 2018.



2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 232 |

OUR PLAN FOR Tipco Asphalt 4.0

Customer Relationship

ACT. 1







OUR CUSTOMER

Cloud-based ERP

Our integrated enterprise value chain management means we do business effectively and competitively for our customers.



2019

2020

Centralized Logistics

Our state-of-the-art logistics technologies means on-time and safe delivery of our quality products for our customers.

Big Data Analytics

We are leveraging big data analytics to deliver unparalleled bespoke sales and marketing material to our customers.

2021

Digital Platform

Our order management system means we are building long-term partnerships with our customers based on sound advisory and trust.

CUSTOMER RELATIONSHIP: To understand customer's need

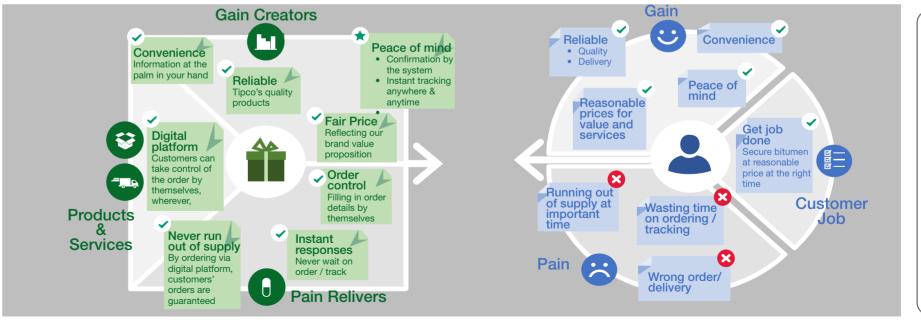
We approach to doing business that focuses on creating an impressive experience for the customer by maximizing service and/or product offerings as well as building relationships. We put customers at the core of the company and learn to understand the real needs to increase customer's lifetime value and a reduction in churn. We use customer data to understand buying behavior, interests and engagement. Moreover, we identify opportunities to create products and services for the best customers. The customer-centric business, the most valuable "asset" is the Customer Base.

WE BUILD CUSTOMER RELATIONSHIP VIA TECHNOLOGIES



All Integrated into one digital platform.







Customer Data Analytics

ACT. 2



Improved database for analysis report for In-Depth information to serve better of Customer's needs







CUSTOMER-FOCUSED LEADERSHIP

METRICS THAT MATTER

Analysis State Control State C

G-Procurement Lead Generation

ระบบการจัดซื้อจัดจ้างภาครัฐ Thai Government Procurement

- Screen leads from G-Procurement Website
- Notes to Excel
- 3. Identify product ID and product quantity
- Update Excel as bidding progress
- 5. Re-format Excel to be ready for import

Our Data analytics utilize information from various sources to generate business intelligence, lead generation, customized products/service offerings including risk management.



Real-time information dashboard for timely monitoring and decision making (via web-based and mobile applications).

Reporting by **Real Time** Pivot table **Monitoring** Mobile App. Project and BI Management Dashboard Oracle (CRM)

Analysis

Data Integration









Customer Data Analytics



- 1) Utilize data from multiple sources for full analysis
- 2) Shaping and cleansing unstructured data
- 3) Develop a visualization dashboard with interactive features, and output presentations across multiple platforms such as web-based, apps and several devices such as Desktop, Tablet, or Mobile phone
- Automatic report updates on dashboard to ensure up-to-date information





Scan VDO:

Shown how we introduce new digital platform to our customer



2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 236 |



Build Customer's Competitiveness

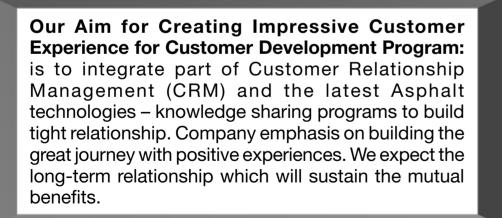
To enhance our customer competitiveness we designed programs to fit our customers i.e. Young Blood Program, Safety Awareness at your site and annual product training "Future Road". We approach the CRM programs to enhancing customer profitability as well.







EMPOWER THE FRONT LINE









Marketing Activities 2019

Customer Survey In-depth Interview

Our business is guided by what matters to our customers.

Traditionally, sales team was focal contacts of our customers. Customer's feedbacks and complaints were communicated through sales force. We are transitioning towards centralizing customer feedback channel through marketing function.

Since July 2019, we launched an initiative to proactively engage customers with our marketing professionals to seek their feedbacks on products, customer supports, technical services, as well as insights on their decision-making processes.

This insightful customer feedback channel is implemented by conducting customer visits and face-to-face interviews to learn about their needs and utilize such insights into our business operation improvements and product/service offerings for optimal customer satisfactions.





Customer Relationship Management

CUSTOMER TRAINING



Tipco asphalt Group organized 2 safety training courses for customers:

- . Safety officer at Management level program
- 2. Safety officer at Supervisor level program

DRR SEMINAR



The seminar for DRR focused on promotion of EAP replacing CSS-1 or MC-70. also included were providing technical knowledge and advice on premium POROUS Technique and on-site inspection for Para AC.



Domestic Sales, Marketing units together with customer organized a volunteer activity for community at Wat Hang Hin school, Rayong Province to improve the playground using our "TIPCO PREMIX" product.



Marketing Activities Plan

Focus
Customer
Centric



- Survey Demand & Customer Satisfaction
- Customer Relationship Management
- Public Communications
- Corporate Social Responsibility

Follow-Up on Customer Survey 2019

Customer feedbacks in 2019 provide great insights and exciting business opportunity hints for following years. For Tipco Asphalt, listening to our customers' voices and immediate responses are our top priorities.

Customer Survey 2020

Digital Platform reshapes our customer survey process, we switch from traditional questionnaire paper to online customer survey. We believe these are methods and tools for sustainable process.

Benefits of using online surveys:

- Cost-effective
- Time saving
- Convenience for customer
- Accessibility
- Quick results



Customer survey

Business owners are worried about succession plan. Next generation owners are not passionate about inheriting their family business.

We develop sustainable relationships with our customers, from one generation to the next, by growing hand-in-hand with our customers

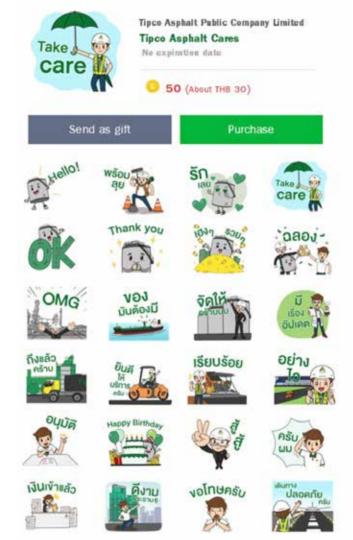
Benefits:

- Sustainable development of professional talents of new generation executives with special expertise in asphalt and construction business management
- Sustainable partnership with customers and their successors



Push Customer Relationship
Management and Sustainability
to the Next Level

Tipco Asphalt Line Sticker





"Safety vest for customers"

Tipco Asphalt realizes importance of customer safety awareness in construction sites. The use of a construction safety vest is necessary to promote personal injury prevention. This protective equipment not only ensures wearers with safety but also allows them to be easily seen and highly visible on the highway.





2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 242 |

CRM: We develop close relationships with customers and local communities, with mutual benefits for all.



Be the sustainable solutions provider for our partners

At Tipco Asphalt, we ensure that our products and services are the preferred choice among competing alternatives.

Our Customer Focus culture helps us identify and understand customer needs. We, therefore, deliver values through high quality of reliable supplies and innovative solutions.

Regarding people development, our personalized, intensive talent development program are designed to optimize our employee potentials and ultimately help accommodate out customers' business needs.

Digital Platform strategy is implemented to enhance marketing and sales efficiency and to ensure continued business successes in the long-run.



Chanchai Lohapratarn
Director - Domestic Sales and
Marketing

The UN Sustainable Development Goals



SDG 4: Quality Education

Sharing our expertise and modern technology with our key stakeholders allows them to sharpen their competitive edges. We standby our commitments to promote lifelong education and learning opportunities for all.



SDG 8: Decent work and economic growth

Close collaborations with our customers and business partners to achieve mutual targets with sustainability-driven economy. We also share and communicate future visions of sustainable development economy to the general public.



SDG 9: Industry, Innovation and Infrastructure

Solving customers' pain points has been our top priority. We constantly seek best solutions, through innovation and modern technology implementation, that directly accommodate our customers' needs and ensure their best customer experiences while conducting businesses with us.



SDG 17: Partnerships for the goals

We believe in creating great, mutual relationship and form a partnership that drives strong business growth. Together with partners, we need align core values and long-term objectives so we can optimize our strengths and resources.

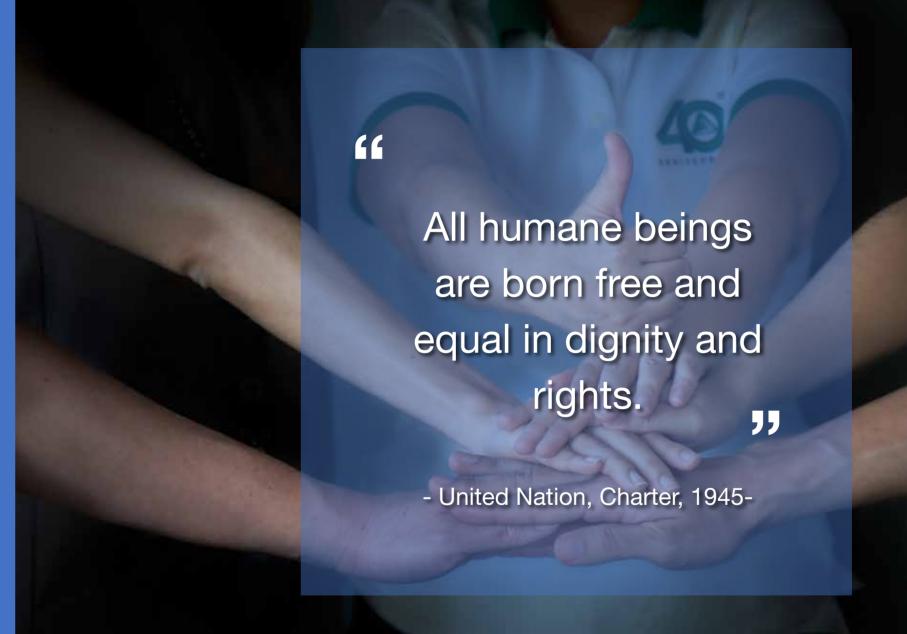


giving and earning respect on **Human Rights**







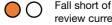


GIVING AND EARNING RESPECT ON HUMAN RIGHTS

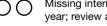
Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)	FY 2019 Performance
Achieve license to grow	Conduct ongoing due diligence, as well as engage with our stakeholders to better understand our salient human rights issues	One ESG case report from community Phitsanulok case: The very bad smell from the factory: Closed issue with 24 hours	Protect Community & Children Rights with Zero case report 1.1) ESG impact to the communities	ZERO Case of complaint from Communities and on Children in the Communities and announce the whistleblowing channel
		2) Zero case report on Security and Privacy of customers	Protect Customer Rights and Privacy with Zero case report target 2.1) For the security of personal information in accordance with the business	ZERO Case of complaint about Security and Privacy of Customers
		3) Manage the fairness for employees 3.1) Compensation women:men 0.95:1.00 3.2) Zero case report for Employees Rights 3.3) We opened for freedom of association & collective bargaining for employees: we have 2 associations	3) Manage the fairness for all employees 3.1) Compensation 3.2) Employees 3.3) Promote Freedom of Association and Collective Bargaining	3.1) Manage the ratio of compensation women:men = 1.19:1.00 3.2) Zero case report for Employees Rights 3.3) We have 2 associations: - Welfare - Safety
5 SENDER 16 PENCE AUSTRONE NESTRONE NESTRONE NESTRONES		4) Zero case of complaints about human rights violations for internal & external stakeholders	4) Zero case of complaints about human rights violations for internal & external stakeholders	ZERO Case of complaint about human rights violations both employee with company and employee with external stakeholders

Progress Tracking Legend:





Fall short of interim target for three quarters; review current practices



Missing interim target for more than one consecutive year; review and revise targets (if necessary)



- Build on the three-pillar structure of the "Protect, Respect and Remedy" Framework

Impacts:

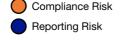












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HUMAN RIGHTS IMACTS TO KEY STAKEHOLDERS ACROSS OUR VALUE CHAIN

The Group respects human rights upon all business activities across value chain in accordance with international laws and standards such as UN Guiding Principles on Business and Human Rights, Declaration on Fundamental Principles and Rights at Work; the International Labor Organization, and UNICEF's Children's Rights and Business Principles (CRBP).







WORK PLACE	Employee	Employee Supplier	Employee Supplier	Employee Supplier	Employee Supplier	Employee	Employee Supplier
MARKET PLACE	Supplier	Supplier	Supplier Customer	Supplier Customer	Supplier Customer Competitor	Customer	Customer
COMMUNITY & ENVIRONMENT	Government	Government Community	Government Community	Government Community Road User and Children	Government Community	Government Community	Community Road User and Children

RESPECTING HUMAN RIGHTS

Respecting human rights has become one of top priorities for private sector as good business practices play important role in promoting human rights and quality of life. As leading manufacturer and provider of asphalt products, our products and services are used for infrastructure development, with ultimate aim on public road and travel safety. The Group also constantly monitors and rectifies any work operation procedures that might exhibit risks pertaining to our works. The Group hereby fully aware that respects for human rights is our top responsibility and applied to stakeholders across our value chain which include employees, customers, partners, public road users.

The Group places great emphasis upon preventing human rights violations through several initiatives. The Board of Directors reviews human rights policies annually. In addition, external risk audit agencies jointly assess human rights risks to review risk issues, assess potential impacts, inspect work processes, and propose preventive measures for human rights violations.

Key stakeholders that might get direct impacts from our business practices are summarized as follows:













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HUMAN RIGHTS: GIVING AND EARNING RESPECTS 1412-1 | Clause 6.3 and 7.2 |



promoting human rights in accordance with international principles to promote peaceful co-living in society

Management Approach | 103-2 |

Human rights refer to basic rights and freedoms to which any individual is entitled. TIPCO Asphalt Group respects and fully awares of human rights across all stakeholder groups while understanding major human rights issues. All these risk concerns are fully reflected across the Group's key activities.

The Group's constantly expanding value chain serves as key factor for us to focus and prioritize upon respecting human rights. Identification of related stakeholders across each activity process helps indicating potential issues that might arise. Meanwhile, full compliance with regulations and guidelines associated with business conducts across all areas still serve as our basic protocol that the Group has implemented regularly.

The Group announced a human rights policy in 2013 with focus on good corporate governance principle where staff at any level must fully comply with labour laws and human rights. Labour rights, women and children rights must be respected and fair, equitable treatments in accordance with prevailing Thai and international regulations. This policy also extends to include business partners and our customers.

As leading company in manufacturing and distributing raw materials for road construction and infrastructures to accommodate nation developments, our Group ensures that we constantly deliver value contributions to the society. In the Sustainable Development Report 2018, we classify human rights considerations across 3 key stakeholder groups; namely, employees, customers and society (which include Community, Road user and Children).

Human Rights Policy: The objective is to show our commitment to prevent the risk of human rights violations of stakeholder groups across corporate value chain. Aiming to fulfill expectations of all units in the organization as well as business partners, we strictly observe, practice and conduct due diligence the human rights of the company.



Scan here for Human Rights Policy

Significant Human Rights Issues



In 2019, the company conducted human rights risk assessment across value chain, beginning with main business units and soon encompass all remaining businesses by 2020. Currently, we have individual unit human rights management, which serve as basis for Sustainability Report 2019.

High-impact human rights issues across corporate value chain involve key stakeholders namely, employee, customer, community, supplier and road user. The company has established a risk management guideline by taking into account the rights of vulnerable groups in which the company operates such as small suppliers, local communities, disable citizens, and children etc. which will be in line with the policy, guideline for protection, prevention and practices in the policy.

Human rights within the organization

The company is committed to provide equitable treatment that is appropriate for all employees without discrimination on gender, age, race, religion, or physical appearance. Also included are fair and safe work conditions, working hours suspended working hours, working environment and social welfare. The Group established ethic guidelines for employees, and work rules that meet the standards of occupational health and safety. In order to minimize risk of human rights violations, the company has proactive operations to prevent negative impacts occur from the employment.

The company has a clear policy against any employment of child labour, forced labour and illegal migrant workers in the workplace for related parties across our supply chain. Currently, sustainability criteria has been introduced and executed, which include prohibition of illegal labour: this serve as one of the criteria for evaluation and selection of contractor / partners or ESG criteria. Moreover, our Risk Management Office (RMO) regularly arranges training for risk management representatives for each department (Risk champion/Risk Officer).

Human rights risk identification and guidelines are conducted across each department. Meanwhile, the Group will expand human rights training as part of sustainability training for all employees by 2020-2021 in accordance with the company's sustainability goals.

Human rights outside the organization

The company recognizes and respects the rights of those involved outside the organization that may be affected by the company's business operations either customers, road contractors, community, youth (children) and business partners. There are measures to prevent and to minimize risk of possible human rights violations.

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HUMAN RIGHTS DUE DILIGENCE 1412-1 1 Clause 6.3.3 and 7.3.1 I

HUMAN RIGHTS

As we constantly improve our understanding of how our business impacts upon human rights and risks involved, we also have implemented key tools to mitigate such potential risk issues. During the past few years, this ongoing process yielded quite good progress while the results were achieved based on involvement and dialogue with internal and external stakeholders. Our ultimate aim is to minimize any risk to people, caused by our business operations.

By understanding, respecting and taking into consideration of our stakeholders' interests, we can respond, take responsibility within our area, as well as place requirements on them.

Our employees, abide with the Code of Ethics to their work with related parties, receive job opportunities, trainings and developments based on their abilities. We also make sure that our work environment is safe, with work culture that encourages our employees to be innovative and share ideas in an open dialogue while being free from any type of discrimination.

KEY INDICATORS FOR 2019

In 2019, there was no case of human rights violation report in accordance with the company's policy, both among our employees within the organization and for case of between our employees and external parties.

HUMAN RIGHTS COMPLIANCE & COMPLAINT



Case of Human Rights Compliant in 2019

COMPREHENSIVE HUMAN RIGHTS TRACKING PROCESS

Step 1.

• Establish Human Rights Policy



Integration

Step 2.

• Identify the Human Rights Risk

Step 3.

- Report risk review in Management reviews of Integrated Management System Meeting
- Communicate risk review report to CG Board Committee meeting

Step 4.

Make dialogue with stakeholders according to risk review's findings

Step 5.

Take actions to respond with complaints

HUMAN RIGHTS ISSUES FOR BOTH INTERNAL AND EXTERNAL STAKEHOLDERS

HUMAN RIGHTS ISSUES							
Director/Employee	Customer	Supplier	Road User / Community / Children				
 Employment Compensation Training and Education Safety and Occupational Health Work Environment Engagement 	 Work conditions Safety and Occupational Health Work Environment Training and Education 	 Work Conditions Safety and Occupational Health Child Labour Forced Labour Illegal use of Labour 	Safety and Well-Being				
MEASURES TO REDUCE THE RISK OF HUMAN RIGHTS VIOLATIONS							
Employment: number of full-time and part-time employees and number of employees with disabilities, indigenous peoples, or	 Channel to manage complaints about customer services Protection of customer privacy policy and practices 	 A list of ESG criteria used to screen new suppliers Requirements of employers that are clearly defined in accordance with 	 Community meetings to hear feedbacks and concerns Community complaints process with the main specified channels 				

- ethnic minorities
- Ratio of basic salary and remuneration of female to male
- Employee training and education
- Safety, occupational health and working environment
- number of employees that returned to work after parental leave
- Support rights to exercise freedom of association and collective bargaining

- Policy and practices of responsible marketing communications on product and service information
- Product standard tracking system
- Product recall systems
- System / process to investigate and resolve customer complaints in a timely manner
- labour laws. And practices that violate labour rights of partners and contractors.
- Monitoring of labour practices of suppliers and contractors
- Self-assessment of partners and contractors launched in 2020
- Occupational health and safety training for partners and contractors

- Annual survey and community concerns
- Number of incidents or complaints concerning environmental impact or breaches of human rights in the community
- Road safety management plan to reduce number of road accident related injuries or deaths in the community.

LABOUR HUMAN RIGHTS | 412-2 | Clause 6.3.10 and 7.4 |

FAIR PRACTICES FOR EMPLOYEES

Respecting human rights is a key principle defined under TIPCO Asphalt Group's Code of Ethics, reflecting our core values and guideline for all business operations. The Group arranges trainings on this particular topic for all staff during their first day of employment and repeated at least once a year, with notification through internal communication channels for all staff to review and reaffirm their CoE acknowledgment in HR online system.

In addition, the human rights policy explicitly states that the Group provide fair operating practices across stakeholder groups under same direction. This includes a policy against the employment of child labour and forced labour in any form.

Fair employment opportunity and equality are defined to ensure our recruitment of highly capable and ethical persons to join the Group. Our new staff recruitment, both from internal and external sources, are conducted using several recruitment tools to ensure that the Group can effectively identify most suitable candidates with set of desired behaviors that fit our organization culture.

We operate against unfair treatments or discriminations associated with ethnical background, social status, religion, family background, marital status, gender, handicap or any other attribute categories under protection set forth by prevailing regulations. The Group also gives priority on internal recruits. This is to ensure our staff receive career development from both career advancement, and when there is a vacant position opening up.

The Group also encourages diversity in workplace. For instance, employment of staff from local communities or provinces nearby, or employment of handicap persons or foreigners.

Provision of adequate facilities and welfare. The Group provides adequate workspaces with safety equipment in accordance with Thai labour regulations. Basic protocols such as safety controls, accident insurance and annual physical check-up are put in place. Meanwhile, the Group realizes the significance of higher standards to ensure safe workplace both for the staff as well as their families.

The Group applied for Thai Labour Standard System (TLS) certificate, with external audits to ensure our labour treatments are well consistent with international practices. The Group has been awarded with this certificate since 2011.

Our employees' welfare and safety committees have been working efficiently in informing employees' concerns to the management. In 2019, several new initiatives for employees well-being improvements were introduced; for instance, provision of annual medical checkup to be based on age groups: not on job levels, and introduction of flexi-hour for staff in the Head Office to counter Bangkok traffic problems.



LABOUR HUMAN RIGHTS: OUR DIVERSITY ORGANIZATION

We are Multicultural Organization where offers our employees equal opportunity for input and advancement within the company

Our employees are totally full timers, including truck drivers who are a majority in Thailand's work structure. However, in some cases, a nature of work of demands employment condition as contracted based such as bitumen vessel crews, but in general, we hire employees as permanent..

While we are focusing on hiring locals, we are open for multicultural candidates. Immigration laws in each country shall indicate how many employees of other nationality can be hired, or what are the conditions allowed. But in the process of developing our people across subsidiaries, we are set, to start from 2020, a job rotation opportunity program across countries of our locations.

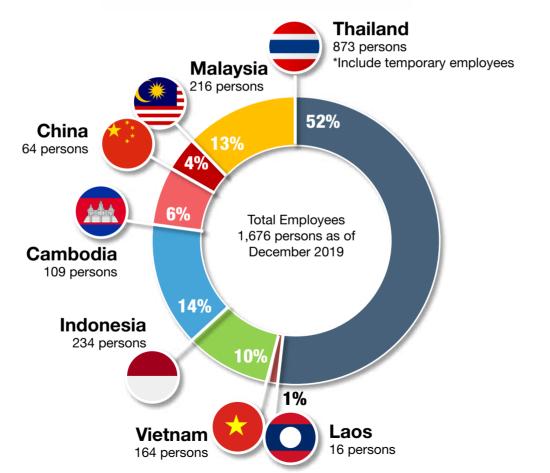
While the pay structure is uniformed in starting rate; and our salary structure is based on internal fairness of job value in each job level, there is some difference in the ratio of basic salary remuneration of women to men in Thailand

An overall ratio of basic salary and remuneration of women to men in 2019 is at 1.19: 1.00. The average figure of female is slightly higher because (1) the number of female employees are much smaller than that of male employees; and (2) female employees are, almost all. in staff or management level, which salary and remuneration is higher than that of operational level. Male employees are mostly in an operational level – at the base structure of pay.

Other variables include individual's performance-based appraisals, and a number of mid-career entries.

Our overall ratio has already excluded the group of truck drivers' data, which all are male, and in operational level; and the group of vessel crews, who are in specific pay structure according to international marine industry standard.





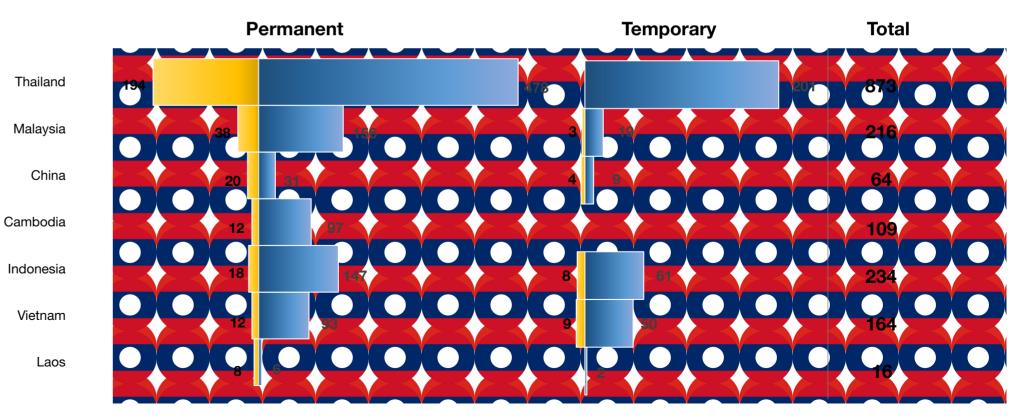
Number of Tipco Asphalt Group Employees by gender by type of employment

By gender, a larger proportion of our male employees are stationed at branch locations where we have logistics activities with physical demand as truck drivers, technical staff, and vessel crews. But at the head office or main offices, female employees are majority. This is due to nature of works.

Our temporary employees mainly are male employees who are sea farers for Marine business and the rests are the truck drivers in overseas subsidiaries.

Anyhow, company opens for many job opportunities and have no bias for gender or nationality.

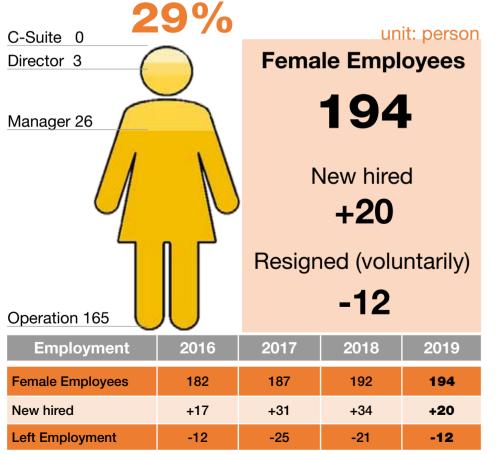


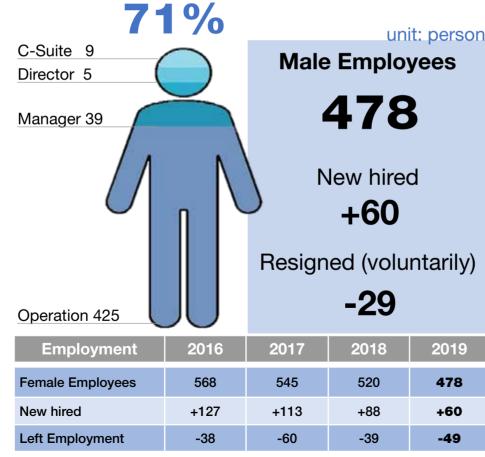


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WORKFORCE DIVERSITY BY GENDER (Data is from Thailand only) 1405-1 1 Clause 6.3.10 and 7.4 I Full-time Employees (2019) 672

Number of Full-time employees by gender and position





EMPLOYMENT DIVERSITY | 405-1 | Clause 6.4.3 |

Data from Thailand Organization only for 2019





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GENDER EQUALITY IN THE WORKFORCE | 405-2 | 401-3 | Clause 6.2, 6.3.7, 6.4.3 and 6.4.6 |

Ratio of basic salary and remuneration of women to men 1405-21



Level





Average ratio of basic salary and remuneration across different levels

female to male 1119:1.00

Employees that returned to work after parental leave | 401-3 |



Engagement	2016	2017	2018	2019
Maternity Leave	11	8	18	20
Return to work	11	8	18	20
Returning rate	100%	100%	100%	100%

unit: person

Compensation | 405-2 |

While our starting rate for new hires who have just graduated is no different between male and female, we find that in overall levels, women's basic salary and remuneration is slightly higher than men's (1.19:1).

This small variation is due to the fact that the number of female employees is smaller and almost totally populated in higher levels than their male counterpart. Other variables include - (1) the performance-based appraisals of individuals (2) the mid-career entries, in which each individual package depends on former achievement.

Compensation	2016	2017	2018	2019
Ratio of basic salary		0.98	0.95	1.54

Engagement | 401-3 |

In our Group, female staff are entitled to 98-day pregnancy leave with pay. At the same time, male staff are also entitled to a new-born care leave as male spouse (to take care of wife and newborn baby) of 3-day period with pay per each delivery. So the parental leave shown in this table represents both female and male staff who are 100% returned to work.



"I'm always perpetually out of my comfort zone and I encourage myself to do new things whenever opportunity comes."

Parichad Tongam: Officer - Sustainable Development, joined company since 2019 and volunteered to be a coordinator for 2019 Sustainability Report.

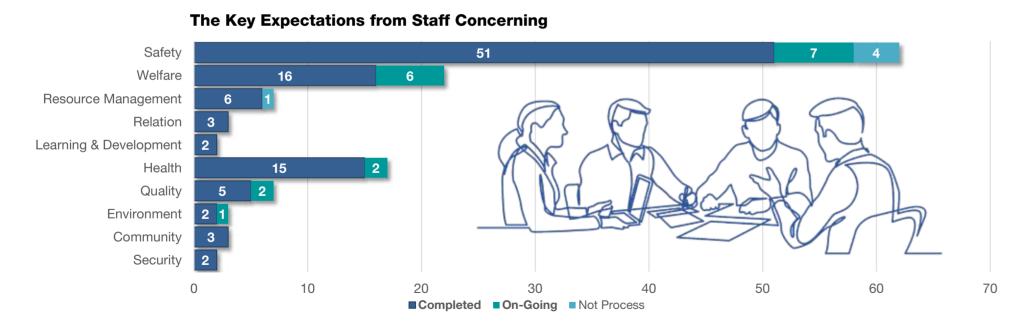


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LABOUR HUMAN RIGHTS: SUPPORT RIGHTS TO EXERCISE FREEDOM OF ASSOCIATION & COLLECTIVE BARGAINING

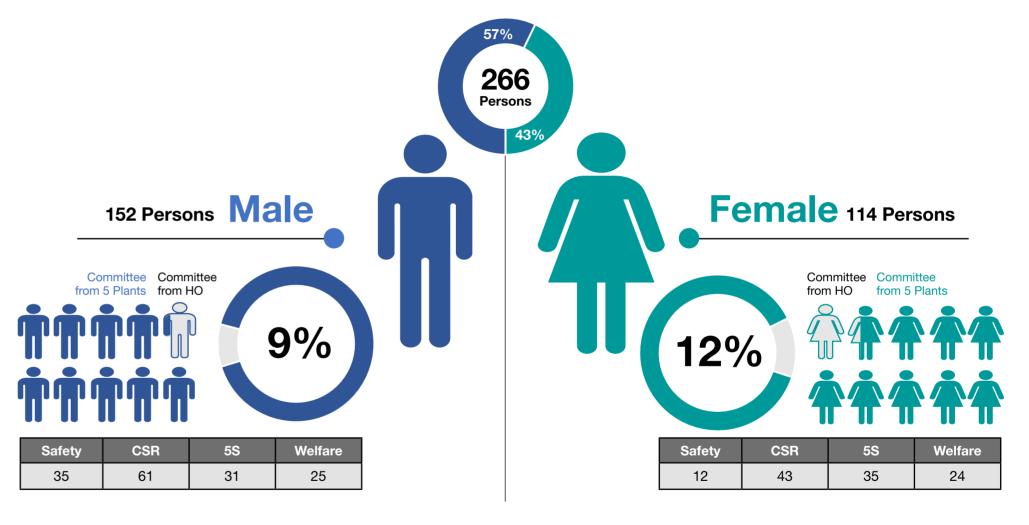
The Group provides opportunities for all staff to assemble and negotiate with the Group on agreements that might impact the benefits to the staff. The Group supports the setup of various committee bodies such as the Welfare committee, Occupational Health & Safety & work environment committee, Social Responsibility Committee, 5-S committee, Thai Labour Standard committee, "Healthy Body, Healthy Mind" committee and Road Traffic Safety Committee. These committees are resulted from staff voting and/or direct appointments in accordance with the criteria pertaining to each committee's body. Committee members comprise representatives of staff across all levels, with key responsibilities to collect feedback from staff and delivered to the management for further consideration and support on resources for improvements and developments to fulfill staff' expectations across various aspects. In 2019, there are total 128 issues, with details as follows:

- 105 issues the Group already implemented action plans in accordance with staff' feedbacks and suggestions
- 18 issues are under ongoing implementation plans
- 5 issues the Group decided not to proceed: as it might create impacts to staff' safety or violate certain laws and regulations



Both committees have a term of 2 years, starting from 1 September 2019 - 31 August 2020.

PROPORTION OF THE STAFF COMMITEES: MALE Vs. FEMALE



Committees Performance:

- Welfare Committee arranges annual recreational events for staff
- Safety Committee Tipco Asphalt Public Company Limited won 4 outstanding Establishment Award, Safety and Occupational Health and environment at workplace category.
- Corporate Social Responsibility Committee arranges CSR activities while providing knowledge training for staff.

CUSTOMER HUMAN RIGHTS

Our customers are well regarded as one of the key stakeholders of TIPCO Asphalt Group. We are fully aware of customer human rights in similar to other related stakeholders. Any issues associated with customers during a business transaction are under the Group's responsibility. The Group has expressed our responsibilities pertaining to customer rights in several ways as follows:

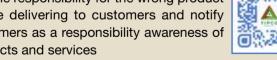
- Customer information and privacy: The Group does not disclose any information of customers, or data of any joint business associated with customer's affiliates, to external entities, both within same industry or other non-related sectors.
- Customer data security: The Group safeguards customers' information kept at the Group in any form such as hard copies or electronic media, in order to ensure no information leakage, either intentional or non-intentional means.
- The Group fully informs our customers regarding protocols pertaining to uses of customer data. This is to ensure that our customers fully understand our transparent business operations while they receive adequate and sufficient data protection, with equitable treatments. A customer complaint channel is available in case the customers are served with unfair treatment.

In order to ensure that customer human rights are respected and treated fairly in accordance with international human rights guideline, the Group implements an enterprise risk management (ERM) to identify and assess customer risks including potential impacts and human rights as well.

Responsible Marketing Communications

The company has set operational guidelines in case of the product quality delivered to the customer does not meet the specified standards, the company is happy to process the return, exchange or compensation for the damage

incurred. The company understands very well the responsibility for the wrong product before delivering to customers and notify customers as a responsibility awareness of products and services



Year 2019: Events that must communicate the impact of the product / service to customers.





Customer Privacy

Personal Data Management which is an important component of business operations. Therefore, the company is strictly security measures, including preventing the use of customer data/information without the consent of the

customer first requiring each related department to use customer data for specific use, such as the purpose of trading goods and providing services to customers.



Year 2019: Events that has issue of misconduct of using customer data







SUPPLIER HUMAN RIGHTS | 412-3 | Clause 6.3.5 and 7.3 |

Development of solution mechanism to prevent human rights issues and conflicts serves as one of the top priority for TIPCO Asphalt Group where we fully commit to take responsibility upon any emerging conflict issues as well as further promotion of human rights toward our business partners, in order to minimize risks associated with the delivery of products and services.

For any new business partners that express interest upon doing businesses with the Group, such partners will be required to conduct a self-assessment which encompasses topics on forced labour employment, work compensation, work hours, fair treatments, discipline and punishment, child and female labour use, rights for employees to negotiate, occupational health and safety, work environment and welfare. These attributes serve as our main partner selection criteria while the Group shall send representative team for supplier onsite visits their premises such as factories and/or sales offices. For those qualified partners that passed all selection criteria shall conduct businesses with us. But prior to conducting a first business transaction, such a qualified partner must submit a letter of intent upon full compliance with labour laws as well as the Group's policy, signed by their authorized directors.

Once the partner has conducted businesses with the Group for more than a year, such a partner must participate in the Group's supplier capability assessment conducted by Procurement Department This protocol is to ensure that our partners still possess great business capability and qualities as set by the Group. Assessment results will assign a partner within 1 of 4 categories: those partners who pass the assessment in group 1 shall receive top priority from us to continue more businesses with.



In 2019, all of the Group's existing suppliers/partners passes the assessments and 100% assigned in 'Group A' category.



ROAD USER, COMMUNITY HUMAN RIGHTS

Contribution to the communities

Community is well regarded one of key stakeholders that TIPCO Asphalt Group focuses upon in our value chain. As a member of community, the Group acknowledges "human rights of community" that each community member has rights to access natural resources while it is our responsibility to ensure national resource use, environment, and bio-diversity are well in-balance and sustainable. This needs to be accomplished along with other aspects such as higher incomes, health care, and public safety. (SDG 11: Sustainable Cities and Communities)

The Group provides supports for various projects and initiatives from local organizations, community leaders, or other business units. We also extend those projects initiated by the Group to the communities; for instance, public safety, health, education, including preservation of local intellects, and culture. Nevertheless, the Group's prime focus has been on those useful initiatives that we can utilize our internal knowledge and expertise for the communities.

Having access to public road network use along with public road safety is very crucial to all community. This could greatly help reducing the chance of accidents caused by poor, worn-out condition of the roads ,that is well regarded as one of the major roots for personal injury and road accidents. Our "patching potholes with TIPCO Premix" project is an example of key initiatives.



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Human Rights of Communities and Children 1412-11 Clause 6.3.7 & 6.8.41

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Children serve as important members of a community. According to definition of Convention on the Rights of the Child and other conventions, children refers to any individual with lower than 18-year of age. These infants, young children, and teenagers are considered highly vulnerable but play crucial role upon succeeding in business operations as well as long-term sustainability.

The Group therefore respects children rights across 4 major areas in accordance with the UNICEF's Children's Rights and Business Principles (CRBP), i.e., Survival, Participation, Protection, and Development. The Group assessed children's involvement upon 3 key areas across our value chains. This includes key processes and activities pertaining to business (workplace), sales and distribution channels (marketplace), and communities nearby our plant facilities (community and environment). This is to promote innovations of infrastructure development while improve social standard of livings and ultimately sustainable development.

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The Group also promotes projects that several community members can co-participate and engage together. These initiatives hence allow children and adult members of community to realize the importance of living together, co-preserving natural resources, local community and member development through various activities. Some of these ideas were proposed by our own staff from local plants. For instance, National Children Day activity that all children and their parents participated upon basic road safety knowledge training, or the "Safe journey to school": patching potholes on road to school project that received tremendous participations from students, teachers as well as community members, and pothole patching project on roads that were worn-out due to normal daily traffic use, to name a few.

As leading company in road construction and maintenance throughout Thailand, the Group always realizes that sustainable business cannot be achieved through not only constant developments but also strong foundations from all sustainable community.



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Human Rights of Communities and Children 1412-11 Clause 6.3.7 & 6.8.41





Road safety for kids

To ensure all children have full access to 'safety road' education, this safety road for kids is a pilot project first launched by the Group's International Business Department. The objective was to provide knowledge and activities for the students at the Bangkrasop School located in the community nearby our Phrapradaeng terminal, Samut Prakarn province. The project later was extended across other plants conducted on National Children Day to ensure larger target groups of children to understand basic safety on road journeys while they can further share these experiences with their family members to enhance quality of life and living together in a sustainable manner.







Safety journey to school



Repairs of small-size potholes on the road surface, without need to wait for the government budget, can be done to help reducing road accidents, in particular upon those routes to school, whether the students will go to school on foot, by cars or motorbikes.





TIPCO Asphalt Group, Nakhon Ratchasima plant, in conjunction with Technical Support unit of Domestic sales department, co-arranged an activity to provide basic knowledge on TIPCO premix products with demonstration of product application for students from Panya Prathip School, Pak Chong district. In this event, students are allowed to apply the product on road surface themselves, hence promoting awareness on their road ownership and cares for the community.

Waste (Garbage) Management



In addition to waste management from normal production process, the Group places emphasis upon waste management to general public. We provide knowledge to local community, in particular the children, the proper ways of waste separation and sorting.

Children with special needs is one of the stakeholders and member of community that require very special treatments and take more time to develop knowledge longer than normal children.

Staff from Phitsanulok plant, TIPCO Asphalt Public Company Limited hosted National Children Day event on waste separation knowledge for children with special needs at Special Education Center.



Bueng Takhreng Running



The Bueng Takhreng in Bang Rakam district, Phitsanulok province, is a large public park area that TIPCO Asphalt Group has sponsored their area development. We saved several trees by plant re-location from major highways under expansion and re-plant them at this site. The Bueng Takhreng has been under development plan to transform into major tourist attraction, providing all facilities for the general public to jogging exercise while enjoying the natural scenery.

Such development requires time and great budgets. Despite rather limited annual budget received each year, the Bang Rakam Municipality President conducts regular fund-raising events such as mini-marathon events to attract the general public and tourists to visit the site.

Children serve as an important stakeholder group of Bueng Takhreng community. Children love to exercise to maintain good health while they participate in local area developments, under the guideline from Municipality President. But children may not be able to afford to participate in the event. The Group, therefore, provide full financial supports for these children to enjoy the event alongside other adult runners. These children will be the ones who need to take great care of this site in the future.





The UN Sustainable Development Goals



SDG 5: Gender Equality

Gender equality, besides being a fundamental human right, is essential to achieve peaceful societies, with full human potential and sustainable development.



SDG 16: Peace, Justice and Strong Institutions

Respecting human rights in this time of crisis, we will build more effective and inclusive solutions for the emergency of today and the recovery for tomorrow.



SDG 17: Partnerships for the goals

Community participation and working with organizations that share our goals are the key principles that guide the Community Partnerships for Human Rights.

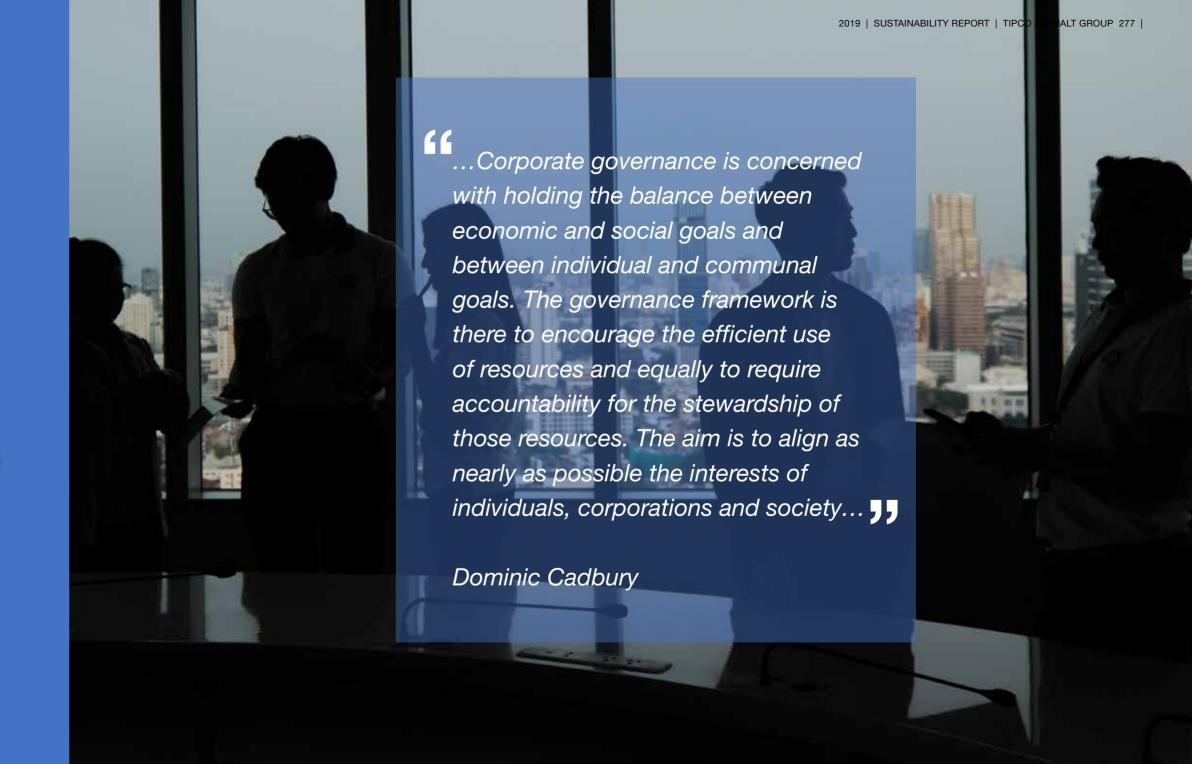


STRIVE

cultivating Ethics is Everyone's Business







Materiality Issue

Report Topic

Impact & Risk

Social Issue

SDGs

Policy

Stakeholder

Objective

Responsible

2019 KPIs

GRI Standards

CULTIVATING ETHICS IS EVERYONE'S BUSINESS

Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)	FY 2019 Performance
Transparency Organization	Zero tolerance for non-compli- ance with prevailing rules and regulations	 Reviewed improvement for CG principles, policies and guidelines to the Board Reviewed and proposed CG code principles 	To get the rating score of Annual General Meeting Checklist (AGM) not less than 95%	Received 97% on the Annual General Meeting Checklist of the Thai Investors Association
	To be par or above average in term of Corporate governance assessments with peers	 Revision of qualification of director Establishment of succession plan for positions of the Chief Executive Officer and Managing Director Resolution of the compensation paid 	Maintain the "5 Stars – Excellence" rating for Corporate Governance Report of Thai Listed Companies 2019 (CGR)	Rated "Excellent or 5 stars" of Corporate Governance Report of Thai Listed Companies 2019 (CGR) by the Thai Institute of Directors Association (IOD)
		 Resolution of the compensation paid to executive directors Revision of remuneration policy for Board of Directors, sub-committees, top executives and employees 	Submit the Sustainability Report to the Stock Exchange of Thailand's (SET) and post in corporate website within May 2019	Received the Stock Exchange of Thailand's (SET) Sustainability Excellence Award 2019 – Rising Star for Thai-listed companies with market capitalization of Baht 10 billion - Baht 30 billion
		 Resolution of policy on holding position in organizations outside the Company Application of CG Code related to the 	To be Qualified in SET THSI Index	Qualified in SET THSI index in 2019
16 PEACE ACTION AND THE GOALS NOTIFIED BY THE GOALS		 suitability for the Company's business Be a part of certified member of CAC Program 	Develop Sustainability Report with high quality and comply with GRI Guidelines and United Nations; Sustainable Development Goals (SDGs)	Received Sustainability Disclosure Award 2019 by Thaipat Institute

Impacts:

G Strong Corporate



of Commerce







- 5 stars for CGR (highest ranking)

#5) Good Corporate Governance Transparent & Against Corruption

#21) Elimination of discrimination /

Number of unmet criteria relating to CG assessments

- Charter of Board of Directors and sub-committees

Internal: Board of Directors, Sub-committees, Employees

- AGM checklist score at 98% out of 100% (above average)

- Zero tolerance for non-compliance with prevailing rules and regulations

- To be par or above average in term of Corporate governance assessment with peers

#22) Not using child labour in all value

Management Responsibility to The Rights of Concerning Stakeholders

ISO Standards

monopolies

chain

GRI 102-17, GRI 102-18,

GRI 102-28, GRI 102-31

- Director qualifications and Nomination

SDG 16. and SDG 17

External: Mass Media.

Corporate Affair team

- CG policy

Cultivating Ethics is Everyone's Business



- No penalty from the Stock Exchange of Thailand, Securities & Exchange Commission, Thailand and Ministry

- Recertification of Thailand's Private Sector Collective action Coalition Against Corruption (CAC) Level 4





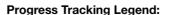
#6) Fair Business Practices

ISO 26000 Core Subject 6.6

#23) Motivation & awareness raising for forced labour

#20) Respect for difference & equality







Meeting interim targets, maintain performance towards meeting 2025 targets



Fall short of interim target for three quarters; review current practices



Missing interim target for more than one consecutive year; review and revise targets (if necessary)

INTEGRATED GOOD CORPORATE GOVERNANCE



Good Corporate Governance Ensures Good Business Conducts

Management Approach

The Board of Directors recognizes the importance of corporate governance in the Company's sustainable growth development, creating shareholder value, and securing trust from all stakeholders, including shareholders, employees, customers, business partners, competitors, and creditors.

In this regard, the Company adhere to Guidelines of the Stock Exchange of Thailand, Corporate Governance Report of Thai Listed Companies, AGM checklist. In addition, the Company has adopted the corporate governance code for listed companies 2017 (CG Code) developed by the Securities and Exchange Commission (SEC)

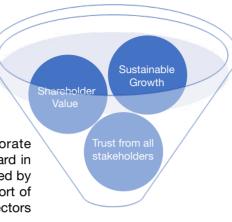
Board Performance | 1102-31 | Clause 6.2.3 and 7.2 |

 Review and propose to the Board improvement for corporate governance (CG) principles, policies and guidelines to the Board in accordance with the Annual General Meeting Checklist prepared by the Thai Investor Association and Corporate Governance Report of Thai Listed Companies 2019 (CGR) by the Thai Institute of Directors Association (IOD).

AGM Checklist: 97% of 100%

CGR Score: 5 stars

- Review and propose to the Board the application of each Principle and Sub-Principle of the Corporate Governance Code for listed companies 2017 (CG Code) related to the suitability for the Company's business.
- Review and monitor on sustainable development matters.
- Received the Stock Exchange of Thailand's (SET) Sustainability Excellence Award 2019 – Rising Star for Thai-listed companies with market capitalization of Baht 10 billion - Baht 30 billion for its outstanding performance in sustainability. In addition, the Company has been qualified in the SET THSI index since 2018
- Received Sustainability Disclosure Award 2019 by Thaipat Institute.







HIGHLIGHTS

Achieved the 5 Stars

Qualified in

Achieved the 5 Stars
of
Corporate Governance
Report (CGR)

SET THSI index

THS

Received The SET
Sustainability
Excellence Award 2019
"Rising Star"
Sustainability Excellence

Received Sustainability
Disclosure Award 2019



Developed and announced the communication process on Whistleblowing Report to all stakeholders

The Board of Directors recognizes the importance of corporate governance in the Company's sustainable growth development, creating shareholder value, and securing trust from all stakeholders, including shareholders, employees, customers, business partners, competitors, and creditors.

In this regard, the Company adhere to Guidelines of the Stock Exchange of Thailand, Corporate Governance Report of Thai Listed Companies, AGM checklist. In addition, the Company has adopted the corporate governance code for listed companies 2017 (CG Code) developed by the Securities and Exchange Commission (SEC).

Structure | 102-18 | Clause 6.2.3 and 7.2 |

The Nomination and Remuneration Committee is appointed by the Company in charge of nominating appropriate persons as members of the Board of Directors in accordance with the Group's policy on Director Qualifications and Nomination.

The Company's Director Qualifications and Nomination Policy is committed to ensure effective management structure taking in to account the benefits to the Company and all stakeholders. The Board of Directors comprises appropriate and diverse range of education, experience beneficial to the Company, without any discrimination of gender, age, ethnicity and nationality.

As of 2019 of the Board of Directors' Structure on page 16-17



Policy on Director Qualifications and Nomination



I 102-18 I

Proportion of independent directors on board



Independent Directors
Out of 15 the Board of
Directors

Proportion of women on board



2 Female Directors

Proportion of independent directors on board/with expertise in core business



10 Non-Executive Directors

3 Out of 10 Non-Executive Directors have expertise in The Company's core business

Board skill assessment

382

The result from board skill assessment

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Evaluation of Board of Directors and sub-committees | 102-28 | Clause 6.2.3 and 7.2 |

The evaluation form designed by the Stock Exchange of Thailand serves as key assessment tool for the Board of Directors of listed companies. The assessment comprises 2 parts: Collective Self-assessment and Individual Self-assessment. The purpose of the self-assessment form is to annually evaluate the performance of the Board of Directors and sub-committees, as a team and for each individual Directors.

Criteria	Collective				Individual					
Officia	Board	EC	AC	N&R	CG	Board	EC	AC	N&R	CG
Structure and qualifications of the board										
2. Roles, duty and responsibilities of the board										
3. The board meetings										
4. Duties of directors										
5. Relationship with Management										
Director's self-improvement and management training										

Evaluation Results (Score 1 through 5) | 1102-28 | Clause 6.2.3 and 7.2 |

	20	18	2019		
	Collective	Individual	Collective	Individual	
Board of Directors (BOD)	3.82	3.86	3.82	3.81	
Executive Committee (EC)	3.70	3.78	3.66	3.76	
Audit Committee (AC)	3.98	4.00	3.95	4.00	
Nomination and Remuneration (N&R)	3.60	3.93	3.85	3.91	
Corporate Governance Committee (CG)	3.55	3.73	3.86	3.78	

Board Performance Development | 102-28 | Clause 6.2.3 and 7.2 |

The Board of Directors setups a policy to ensure continuous knowledge trainings and developments for the directors and executives. The Group encourages and sponsor directors and executives to attend training courses organized by various institutions. In 2019, training details of each director can be summarized as follows:

Name	Position	Course
Mr. Chaiwat Srivalwat	Chief Executive Officer	Global and Corporate Sustainability & ESG: The Next Phase of Growth, The Stock Exchange of Thailand
Mrs. Anne-Marie Machet	Independent Director	Growing Clean Business in a Corrupt Environment, Institute of Directors
Mr. Koh Ban Heng	Independent Director	- SMU-SID Executive Certificate in Directorship program
		- Leaders Insights with Economist Intelligence Unit
		- Grow Beyond Talk 2019

During December 2019, executive directors and some Board of Director members attended the Group's long-term strategy formulation workshop (Vision 2025). This workshop not only allowed Board members to understand and participate upon the Group's long term business directions but also provided mutual grounds for the Group's top managements to brainstorm and crystalize their ideas and experiences into strategic initiatives implemented to achieve new Mission./Vision.

Directors and Executives Training: 2020 and Beyond | 102-28 | Clause 6.2.3 and 7.2 |

The Group constantly encourages directors and executives to attend training courses organized by leading organizations such as the Thai Institute of Directors (IOD), the Securities and Exchange Commission (SEC), and the Stock Exchange of Thailand (SET). These trainings aim to enhance the directors and executives' expertise on several key areas; for instance, corporate strategy, risk management for corporate leader, sustainability management, or certain topics that might impact the Group's business operations such as Cyber security, or digital transformation.

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WHISTLEBLOWING SYSTEM | 102-17 | 205-3 | Clause 7.6.3 |



helping prevent and monitoring

unethical behavior and violation of operational requirements

In order to ensure the organization's work procedure be fully transparent and auditable. TIPCO Asphalt Group establishes a guideline for whistleblowing with clear, specific details on procedures. This provides all staff as well as other external stakeholders with a channel to file complaints or report any doings that are deemed, or suspected to be, non-transparent or any actions that contradict with TIPCO Group's Code of Ethics through this channel. The Group constantly communicates to all staff, external complainers and other related stakeholders while the results are used for further work process improvements. With recommendations from the Stock Exchange of Thailand and the Corporate Governance Committee, this year the Group revises whistleblowing procedures with a focus on clear process details. This revision provides confidence to complainers on transparency and fairness while ensuring full coverage across the whole group.

Confidentiality Ensure that whistleblowers will not be identified by anyone that will threaten **Impartiality Prevention Investigation Committee** Have well-structured compliance: appointed to discourage acts of corruption and makes perpetrators more Compliance **Treatment** Has Senior Manager Internal Audit to Focus on treatment: We have an internal audit committee and guide on suitable trusted team to investigate and solutions deal with accusations.

Multichannel

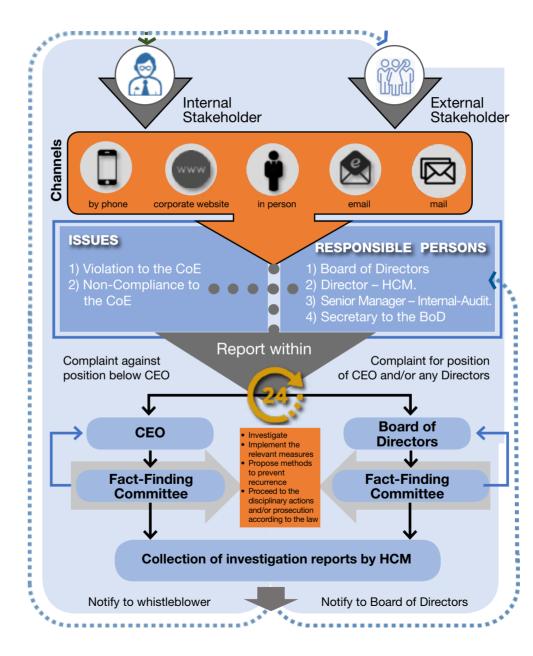
Provide safe channels for all stakeholders; employees, suppliers, customers etc. Provide multinational capabilities with attendants that receive and deal with accusations in more than one language.

Multilingual

Whistleblowing Case 2019

Number of Whistleblowing (Case)		2018	2019
The total number of complaints that have significant information (Case)		6	7
Number of Unethical: Bribery and Corruption (Case)		1	2
Number of Unethical: Other Issues (Case)	16	5	5
Investigation Status	2017	2018	2019
Investigation completed (Case)	16	6	7
In process (Case)	0	0	0

GRIEVANCES AND WHISTLEBLOWING PROCESS



Tipco Asphalt Group expects all personnel and stakeholders to monitor compliance with Tipco Asphalt's corporate governance and code of ethics and encourages all personnel and any stakeholder to raise any questions and concerns they may have regarding these policies



In addition, personnel and any stakeholder as well as external sources can report any misconduct or non-compliance, or send their enquiry to Company Secretary, Internal Audit or Human Resources Department.



In the event they notice (or suspect) a violation of or non-compliance with the Code of Ethics, they may direct their questions or complaints by phone, e-mail or letter to, or personally inform any of the following persons:

- 1. any Company Director
- 2. the Director Human Capital Management
- 3. the Senior Manager Internal Audit
- 4. the Secretary to the Board of Directors

The above persons shall report such matters to the Chief Executive Officer

- -- if the issue is raised against employees under CEO level; or to the Board
- -- if the issue is raised against the CEO and/or any Director, within 24 hours. Tipco Asphalt Group shall conduct investigations to all complaints with due to urgency and confidentiality.



At the soonest, but no later than 14 days, the fact-finding committee shall report the result of investigation to the Chief Executive Officer / or Board of Director. The Human Capital Management Department shall collect the the investigation reports, then notify the whistleblower and the Board of Directors, as well as the responsible persons who received the complaint.



Mail: Secretary of the Board of Directors

25th Floor, Tipco Tower 1, 118/1, Rama 6 Road,

Phayathai, Bangkok 10400 THAILAND Website: www.tipcoasphalt.com

Phone: +662 273 6000 E-mail: Thanapol lao@tipcoasphalt.com



We standby Our 'Zero Tolerance' Principle Against Corruptions | 205-1| 205-2 | Clause 6.6.3 and 7.4 |

The Group places great emphasis on monitoring any potential activities that could lead to corruption. With our Principle of "zero tolerance" against any form of corruption, the Group continuously strives for good corporate- governance practices and therefore establishes an anti-corruption policy with the purpose of preventing corruption activities across the value-chain while maintaining vigilant business operations.

In response to the policy, the Risk Management Committee established a guideline upon corruption risk identification, coupled with regular risk tracking/monitoring systems in place including quarterly reports to the Board of Directors. Corruption risk assessment has been performed by the Risk Management Committee (through Risk Management Office) to constantly identify related risks, corresponding likelihoods/impacts, internal risk controls to mitigate residual risks. These corruption risk assessment, implementation. and monitoring are reviewed on a regular basis and reported to Corporate Governance Committee. Audit Committee, and ultimately the Board of Directors.

Since 10th November 2017, the Group was certified with a membership of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC), hence reaffirming our strong dedication and commitment to the society against corruptions. Since then, we regularly participate in CAC activities associated with anti-corruption prevention.

On the employee aspect, the Group encourages all staff on anti-corruption issues by providing knowledge and creating awareness through a series of staff training and anti-corruption activities. Each newly recruited employee has required to participate in these training prior to starting their works. Meanwhile, staff who have joined the Group for more than 1 year are required to attend training courses to review their understanding of anti-corruption which also includes a review on anti-corruption risks, at least once a year.

The Group regularly sends our staff to attend some anti-corruption training courses/seminars hosted by related authorities such as the Stock Exchanges of Thailand or the Thailand Institute of Directors, to ensure that our staff fully understand the best practices including effective implementation of anti-corruption activities across the Group.

External training course: Corruption Risk and Control by IOD

The Group's RMO unit attended the training course on Corruption Risk & Control (CRC): technical Update hosted by Thai Institute of Directors (IOD) in conjunction with CAC



Training and Campaign Activity Anti-Corruption Day



Anti-Corruption Framework | 205-1| Clause 6.6.3 and 7.4 |

In addition to our membership awarded by Thailand's Private Sector Collective Action Coalition Against Corruption (CAC), in 2019, the Group announced the "No Gift" guideline with clear instructions on what we "CAN DO" and "CANNOT DO". To ensure effective and successful Good Governance and, in particular, Anti-Corruption practices, we focus on structuring and developing internal procedures to ensure the Board of Directors and all employees are fully aware of and strictly follow the practices. We constantly aim to improve the anti-corruption system, strengthen management functions, and protect the rights of everyone in our ecosystem, while moving towards long-term sustainable development.

ANTI-CORRUPTION FRAMEWORK

Preventing corruption and developing an ethical culture





Consistent Enforcement & Deterrence, Transparency



Anti-Corruption policy



Code of ethics



Corruption risk management



Detecting corruption practices & compliance breaches



Responding to corruption conduct & compliance breaches



Education and awareness

Strong Leadership, adequate allocation of resources and sufficient political will strengthen Anti-Corruption culture



Anti-corruption Policy



Code of Ethics Policy



Registered topics on Corruption Risk



Guideline

Certification end date 9 November 2020

. certificate

Date of certification: 10 November 2017

Currently we are on the process of renewal the

The company has been

certified as a member of the

Created awareness Gift Report System

Cr. Jeremy Sandbrook - Chief Executive, Integritas360

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HIGHLIGHTS OF 2019 | Clause 7.6.1 |



The Group is one of 34 award-winning listed companies in the group of SET Sustainability Excellence - Rising Star Sustainability Award category for companies with a market capitalization between Baht 10-30 billion.

The Group also won the 2019 Sustainability Disclosure Award, based on an assessment of operational data disclosure through Tipco Asphalt's Sustainable Development Report that provides a complete and reliable set of sustainability data in accordance with the Global Reporting Initiative (GRI) reporting framework by ThaiPat Institute.



Since 2018, the Group has been nominated to be included in Thailand Sustainability Investment Index (THSI Index). This reflects the Group's continual determination to sustainable developments and adheres to good governance principle while creating shared values in across economic, social and environmental dimensions. In our SD efforts, the Group also integrates risk management, supply chain management and

innovations.

Corporate Governance is about promoting fairness, transparency responsibilities and accountability within the organization.

It should be carried out more through principles rather than rules.

"



Thanapol Laosiripong
Corporate Compliance Manager,
Company Secretary

The UN Sustainable Development Goals



SDG 16: Peace, Justice and Strong Institutions

The Group is directed and controlled by Boards of Directors who responsible for good corporate governance. Our ambition is to ensure fairness to all parties that conduct business with us.



SDG 17: Partnerships for the goals

Our partnerships with CG initiatives such as knowledge & experience sharing with partners, suppliers in our ecosystem to ensure long-term mutual cooperation.

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2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 291 |

CORPORATE TAX MANAGEMENT

Management Approach

We comply with applicable tax laws wherever we operate. We are transparent about our tax payments to governments and strive for an open dialogue with them.

This approach helps us to comply with both the letter and the spirit of the laws. For Tipco Asphalt Group, being transparent is also about showing how developing business provides governments with an opportunity to generate revenues, support economic growth and enhance social development.

Responsible Tax

We aim at scaling up corporate tax transparency and establishing responsible tax behavior within companies as one of the main pillars of corporate social responsibility (CSR). Turning businesses into truly tax responsible companies will help in rebuilding trust and addressing the growing expectations from the stakeholders and policymakers.

Tipco Asphalt Group is committed to acting with transparency, integrity, and the highest ethical standards and will not tolerate anything that compromises this in our "Tax Management". We are transparent on taxation in the Annual Report and by making our tax policy publicly available.

Data from 2018-2019 meant Data during 1 Jan – 31 Dec of each year

STATEMENT OF TAX	Sales & Serv	vice Income	Profit Before Income Tax		Income Tax	
STATEMENT OF TAX	2018*	2019*	2018*	2019*	2018*	2019*
Consolidated Financial Statement	27,631.92	36,892.97	814.76	3,654.73	116.85	234.45
Separate Financial Statement	24,683.03	33,640.72	921.13	2,876.81	393.21	509.00

Sustainable Tax Strategy

It is the right of governments to determine tax policies and tax rates and to draft tax laws accordingly. They do so under strong competition for capital and investment, which is internationally mobile. We use legitimate tax incentives and exemptions designed by governments to promote investment, employment and economic growth. When considering the viability of investments, tax is one of the factors we examine. Income tax is just one part of the overall tax regime considered. We expect to pay tax on our income in the country where activities take place and believe double taxation of the same activity by different jurisdictions should be avoided.

Tipco Asphalt Group supports efficient, predictable and stable tax regimes that incentivize long-term investment. We expect the laws to be applied consistently, creating a level playing field for all.

We realized that "tax" is critical to sustainable development as it has high impact on socio-economic as well as national development. The Company is committed to tax management as well as all the subsidiaries; for tax planning and implementation are in a consistent alignment within the Group.

Our Tax Objectives

- File the appropriate returns in all relevant jurisdictions in accordance with tax laws and regulations regardless of local custom
- Aim to avoid having anything to do with our tax affairs being aired in the public domain
- Constantly seek opportunities under the regulatory framework that could allow us to reap tax-savings benefits: e.g., re-organization
- Optimize transfer-pricing activities for tax savings purposes
- Penalties, including tax related penalties, for late filings of tax returns will not exceed THB 100,000 in any one year (Users/related units and tax team)
- TASCO Group will implement tax planning strategies that will impact positively on our day-to-day business (Potential Risks)
- No new subsidiaries may be set up without tax function input into the structuring/financing
- The cost of any revenue authority investigation/adjustments should not exceed 1% of the tax payable



TIPCO Asphalt fully supports government policy by complying with all tax regulations set forth by the governments across all markets where we operate. Meanwhile, we plan to optimize legal tax benefits under regulation framework by establishing tax structure without tax avoidance.

We also place top priority on business transparency by fully disclosing our information on tax payments and policy in our reports.



Koh Lei Huat CFO - Tipco Asphalt PCL.

Materiality Issue

Report Topic

Impact & Risk

Social Issue

GRI Standards

Execution

CULTIVATING ETHICS IS EVERYONE'S BUSINESS

Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)	FY 2019 Performance
ERM Risk Management	 Complete ERM risk portfolio for the whole Group Quarterly risk reports to include more details on ERM risk profile, more information on internal control implementation and effectiveness 	Operational and Strategic Risks with the BUs.	ESG risks will be included upon ERM exercise extended to cover each foreign subsidiaries	ESG risk exercise was extended to cover some foreign subsidiaries within the Group (JV in Singapore and refinery unit in Malaysia)
8 BEEENT WORK AND ECONOMIC GROWTH AND STRONG MICHIGANIAN MICHIGANIANS AND STRONG MICHIGANIAN MICHIGANIANS AND STRONG M			2.) Issue 4 Quarterly risk reports per year	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□

SDGs SDG 4, SDG 16 and SDG 17 Policy Risk Management Policy (See page. 294) Stakeholder Everyone in Tipco Asphalt Group Ecosystem Internal: Risk Management Officers, External: Shareholder, Business Partner, Community / Society Objective Ensure the Group conduct businesses with greatest transparency to ensure fair treatment of shareholders and all stakeholders Prudent business conduct via risk management and internal controls Establish comprehensive ERM foundation for Tipco Asphalt Group Ensure effective internal control implementation and risk monitoring Responsible RMC ,BU Heads ,risk management office (RMO) Built-in risk Control and Containment Measures from the start Strategy

Extend ERM exercise to JV in Singapore and refinery in Malaysia

Plan, Implement and Monitor Progress of Risk Management Plan

Risk Sharing. Partner with others to share responsibility for the risky activities

#5) Good Corporate Governance Transparent and Anti-Corruption

ISO Standards

Impacts:

Quarterly risk report



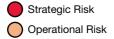


Review and Analyze Risk Priorities

Cultivating Ethics is Everyone's Business

Management Responsibility

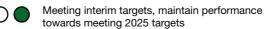
GRI 102-15















Missing interim target for more than one consecutive year; review and revise targets (if necessary)





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INTEGRATED MANAGEMENT AND ENTERPRISE RISK MANAGEMENT (ERM) 1102-15 | Clause 7.4.3 |



risk management excellence alongside our business journey



Management Approach | 103-1 | 103-2 | 103-3 |

The Group's Enterprise Risk Management framework mainly focuses on identifying and assessing the uncertainties associated with its strategic and business objectives. The Enterprise Risk Management practice of the Group follows guideline of *The Committee of Sponsoring Organizations of the Treadway Commission (COSO)-ERM framework* I 102-15 I, which emphasizes upon effective ERM execution through risk governance and culture, linkages with strategy and operational performance, potential opportunities, risk reviews, and regular communication & report. So far, the Group already implemented risk management practices all existing units/entities in Thailand, maritime business, local plants, truck logistics units, refinery facility in Malaysia including a joint venture company in Singapore and would soon enhance the scope to encompass all other offshore subsidiaries and related businesses in which the Group has a significant investment (at least 20% percent of shares with voting rights).

As the core of the Group's ERM, the Risk Management Policy I 102-15 I was formulated in consistent with the Group's business goals, strategies and risk appetite while supporting identification and prioritization of early warning signals of key risks through impact/likelihood assessments, key risk indicators, with corresponding risk mitigation plans and internal controls are implemented and monitored, accompanied by risk reviews on regular basis.

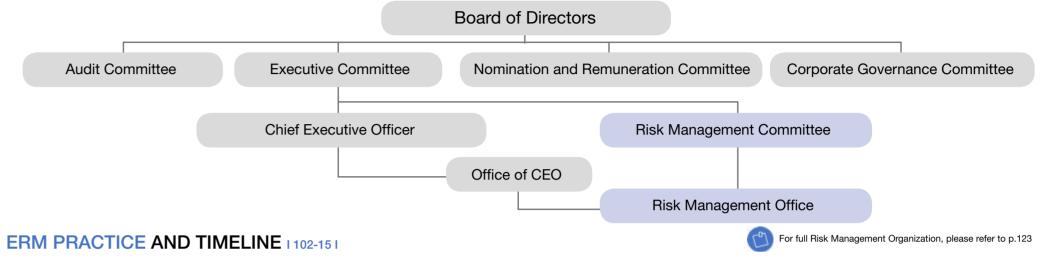
Enterprise risk management structure of the Group was well designed, in compliance with the *Good Corporate Governance* principle and *Risk Management Policy*. Under the direction of the Board of Directors and the Executive Committee (EC), the Risk Management Committee (RMC) was established to ensure that the Group's principal

and substantial risks are identified through consideration of related internal and external disruptive

Since 2015, the Risk Management Office (RMO) was established by RMC to facilitate and exercise adequate oversight of the risk management practices employed by each respective business units. The RMO works proactively with respective Business Unit (BU) leaders and Risk Champions/Risk Officers in order to ensure effective implementation of the risk management progresses and internal controls including risk communications across the Group. The RMO operates within the COSO-ERM framework, conducts regular monitoring and reports the risk findings to the RMC, EC and ultimately, the Board of Directors.



RISK MANAGEMENT ORGANIZATION 1102-15 I Clause 7.4.3 I



In fact, the Group has adopted an ERM exercise since 2012, with primary focus on operational risks associated with key business units. The Vision 2020 long-term strategic plan formulated in 2015 revisited the ERM and placed it as one of the key strategic priorities for the Group.

The Risk Management Office (RMO) is responsible for the ERM project. Workplan was designed into 3 phases focusing on development of ERM foundation, risk registers, control implementation including reports and monitoring.

The ERM foundations not only re-identify and capture risks associated with normal business operations, but also take into consideration risks associated with Vision 2020 strategies, effective control measures, development of key risk indicators (KRI) and more importantly, identification of Top Corporate Risks



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2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 297 |

ENTERPRISE RISK MANAGEMENT (ERM) 1102-15 | Clause 7.4.3 |

RESULTS. PERFORMANCES AND FUTURE PLANS

Overall ERM results for the Group can be seen from the table. The new risk registers were completed by 2018, with identifications of new set of risks/opportunities pertaining to all key units in Thailand, local plants, maritime department, refinery facility in Malaysia and a Joint Venture trading firm in Singapore. With COSO guideline as our standard, RMO has identified more than 3,000 risk items, most of which already have effective and sufficient risk control measures in place (green) while a handful of key risks (red) and top corporate risks are under RMC's strict controls and monitoring.

Strategic risks are also discussed with those units that directly involve and implement such strategic plans. All these risks are identified with their corresponding risk internal control measures, KRI, effectiveness, their impact and likelihood assessment (based on residual risk concept) and additional control measures needed, in particular for those key "red" risk items. The results are regularly updated and presented to RMC via quarterly risk report

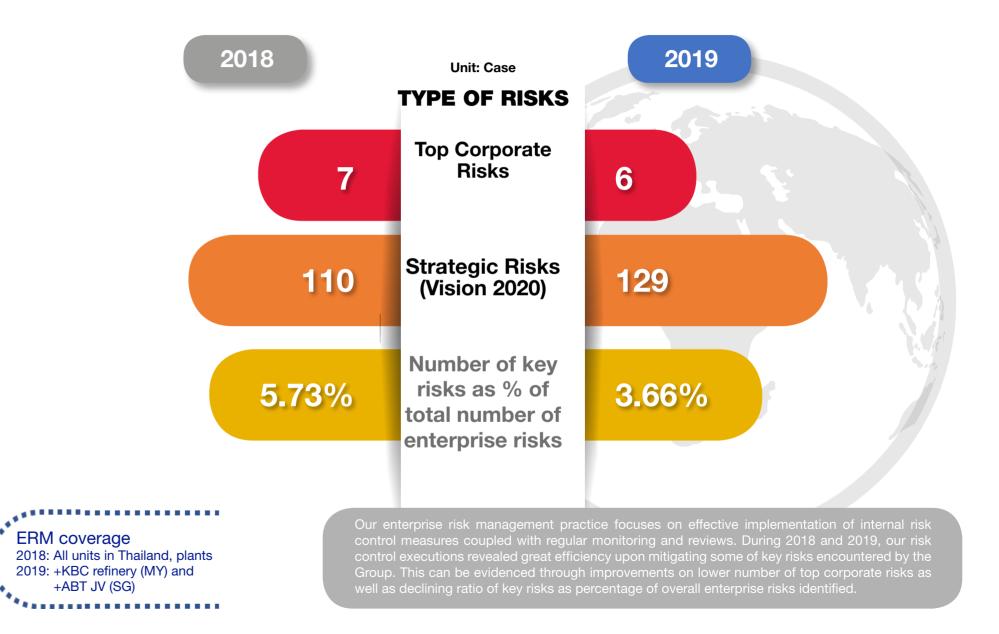


Key objective of ERM exercise is to ensure all key risk are fully captured and identified, with effective and sufficient risk control measures implemented. It is quite evident from the ERM results that despite increasing number of overall risks added to the registers due to more number of unit coverage under ERM exercise, total number of key 'red' risk items tend to decline over time, thanks to the strict and highly effective control measures the Group implemented together with regular risk tracking and monitoring of KRIs.

As for ERM future plans in 2020 and beyond, RMO will further expand ERM exercise and practices to other foreign subsidiaries under the Group. Start with our ABS subsidiary company in Indonesia in 2020, and perhaps followed by other subsidiaries later on, provided that staff on the ground are ready to conduct such exercise.

In addition, a comprehensive risk review will be conducted in 2020. The plan will not only revisit all risk registers across all units but also review the Top Corporate risks and new strategic risks pertaining to upcoming Vision 2025 strategic plan.

ERM: KEY STATISTICS 2018 and 2019



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RISK FACTORS | 102-15 | Clause 7.4.3 |

RISK RELATED TO FINANCE

The Group business activities are exposed to various financial risks, including those related to credit, liquidity, foreign currency, interest rate and oil prices. The Group uses various financial instruments to manage any identified financial risks but does not use financial instruments for trading or speculative purposes.

Credit Risk

Credit policy is regularly reviewed and updated, exposure to credit risk is monitored on an on-going basis. Credit review and evaluations are performed on all customers, while credit approvals are done by credit committees.

Liquidity Risk

The Group operates under unsecured short-term trade and working capital facility arrangements with reputable local and international banks that have combined limits more than sufficient to support higher financing requirements for crude purchase in the event of high crude prices. Hence, liquidity risk of the Group is minimized.

Currency Risk

The Group is exposed to foreign currency risk because of purchases of raw materials and export revenue. This risk is adequately mitigated by the provision of financing and exporting revenue in the same currency. There are also forward contracts booked for known foreign currency debts and expenses which all have maturities of less than six months.

Interest Rate Risk

The Group will consider entering new interest swap when it is exposed to any new long-term loan

RISK RELATED TO OIL PRICE FLUCTUATION

Petroleum products markets have been moving upward in line with crude price. To mitigate price fluctuation risks for both crude oil and finished products at all times, the Group evaluates carefully its hedging strategy for each crude cargo. A four-way collar is used to protect the risk of higher crude costs, while the down –side risk of non- bitumen revenue is protected by selling SWAP.

REFINERY OPERATING ENVIRONMENT

The KBC refinery takes risk management in all its operations with the highest level of seriousness. While the risk management efforts of the company are based upon the core value of 'Prudence' and all unnecessary and excessive risks are completely eschewed, a constant review of the risks is critical.

ASPHALT CEMENT SUPPLY

The Group continues to mitigate supply risks by maintaining good, long-term relationships with all refineries in Asia, a task which is accomplished through regular supply contracts and enquiries. Currently, supply risk is mitigated by the ability to source AC from its own asphalt refinery in Malaysia. Expanding collaborative networks with key partners has also helped to identify new sources of AC supply at competitive prices.

RISK RELATED TO MARITIME BUSINESS

The Group owns, manages and operates eight asphalt tankers. The Group is focused on maintaining a high-quality tonnage through a clear shipping strategy and prudent sales and purchase. The modernized quality tonnage maintained by the Group will suitably support the increased sales, thus reducing the risk exposure associated with capacity constraints.

The Marine Group operates with the mission of zero accidents, zero injuries and zero oil spills. In addition, our Assets are insured by First Class Insurance Companies.

The biggest challenge facing the industry is the shortage of well-trained personnel. The Group continues to make serious efforts in training and developing its shipping personnel in order to face the industry's challenges.



RISK RELATED TO THE DOMESTIC MARKET

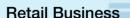
Majority of asphalt demand is largely linked to the government's policy and its budget. Stability of the government has still a significant impact on Thailand asphalt demands.

In the fiscal year 2019, the government allocated 134,946 million Baht for road maintenance and construction. The government budget remained strong in 2019 to support the 5 years plan for strengthening infrastructure and road network.



RISK RELATED TO THE INTERNATIONAL MARKET Wholesale Business

Main risk on crude supply uncertainty has been subsided in general but still presented some irregularity due to operation at load port. In contrary, crude shipping industry has become turmoil in 2019 due to tight availability of crude vessel and drastically increase in freight expenses. Various responses from each refinery towards IMO 2020 caused some uncertainties on supply of asphalt in the region.



Safety of all employees and contractors/third parties remains our top priority. All our retail subsidiary companies in Vietnam, Indonesia, Cambodia, Philippines and Laos have safety policy based on regular audit and continuous improvement. Good practices are shared among all entities and contractors/third parties are audited and have to comply with minimum safety requirements.





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ENTERPRISE RISK MANAGEMENT (ERM) 1102-15 | Clause 7.4.3 |

RISK MANAGEMENT RELATED TO ENVIRONMENT, SOCIAL AND GOVERNANCE (ESG)

The Group realizes the importance of ESG risk management practice to ensure that our businesses can grow in sustainable manner. Amidst rapidly changing global environment coupled with emerging uncertainties, there are several factors that could either positively or adversely impact the Group. Therefore, the Group's proactive risk management has become of the Group's key strategic priority which also encompasses risk managements across several aspects including occupational health, safety, environment, economic, social as well as governance.

Our ERM risk registers also encompasses all these risks associated with environment, social and governance (ESG). They are fully identified and assessed with residual impacts and likelihood along with corresponding risk control measures.





The Group's governance on risk management has focused upon good citizenship and license to operate that are associated with the Group operations and complied with applicable laws, regulations and other requirements: as the Group must fully comply with all related regulations pertaining to safety and environment etc. In addition, Security Safety Health & Environment (SSHE Function) and Sustainable Development Officers (SD Function) are responsible for monitoring new regulations, conducting the evaluation of compliance, managing internal non-compliance found and including periodic reviews, in order to ensure that the Group's business operations are fully comply with latest applicable regulations and requirements, with full awareness on occupational health, safety, environment, economic, and social aspects.

In addition to social and environmental risk management, our company also has focused the operational risk on occupational health and safety (OH&S), road traffic safety (RTS) and environment. Implemented and certified by all plants of Thailand Operations, these risk management practices include identification, assessment and risk management (reduce, monitoring and control) which are compliance with Occupational Health and Safety Management System (ISO45001:2018 standard), Environmental Management System (ISO14001:2015 standard), Road Traffic Safety Management System (ISO39001:2012 standard) in line with the Integrated Management System (IMS) included in the Quality Management System (ISO9001:2015 standard). Major operational risks, for instance, are fire accident, products spillage and road traffic accident of products distribution truck, Control measures are implemented such as installation of CCTV & GPS Tracking System in each asphalt truck units, preventive & autonomous maintenance, defensive driving courses training for all drivers, and distribution route survey prior to each delivery.



Centralized Logistic Center, Phrapradaeng, Thailand

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ENTERPRISE RISK MANAGEMENT (ERM)

Key Initiatives

Raising risk awareness

The Group promotes risk awareness across all units targeting employees and management at all levels to ensure that ERM and risk awareness fully integrates with everyone's work practice. Under "P: Prudence", our risk management principle is also bombarded into the Group's Core values that all staff shall follow while working.

RMO plays a crucial role upon raising risk awareness across the organization through various risk trainings and regular unit visits to discuss and update on ERM issues. In addition, RMO also works closely with designated risk champions/ risk officers pertaining to each unit to ensure that all units stay fully updated and aware of the risk factors upon their work practices.



Corruption risks | 205-1 | Clause 6.6.3 |

The Group strongly commits to our 'zero-tolerance' principle toward any type of corruption activities. Since 2013, the Board of Directors had adopted the Anti-Corruption Policy, with the ultimate aim to prevent corruption across all value-chain activity while maintaining vigilant operations.

RMO compiles corruption risk register to identify related risks, with corresponding likelihood and impacts assessments, and internal controls to mitigate residual risks. Regular tracking/monitoring of these risks will be reported to the Risk Management Committee (RMC), the Corporate Governance Committee (CG) and ultimately, the Board of Directors.



Emerging risks: Information security and Cybersecurity risks | 418-1 | Clause 6.7.7 |

While increasing the digital connectivity of the Group's business process chain create agility but they can also significantly raise cybersecurity risks and threat levels. The Group's IT department develops a Cyber Risk Management Program to identify, assess, and respond to cyber risk. In this regard, CIS Control™ (v7) security framework was applied to this program to ensure that controls have been addressed correctly.

Controls over information security: The Group has shared and stored digital information with many businesses while information technology security policy was developed to ensure that all information technology users within the domain of the group and its networks comply with stringent rules and guidelines. The policy is reviewed on a regular basis by both internal and external audit teams to improve and make the process more efficient and effective.

Controls over unauthorized access to systems: the Group has implemented new protection technology to mitigate all vulnerabilities while creating a continually improved process. It is one of IT's key priorities to restrict, monitor and protect the confidentiality, integrity and availability of the Group's resources and system. All ERP accesses have been revised by our IT Group and Business Process Owner (BPO) to ensure that each role and responsibility is correct as per business functional requirements. The access control was managed by our IT Group under strict Tipco Asphalt's policy and authority.

Controls over operations failure risk: High effective standard in IT service management is now included in IT Group's development plan, which focuses on developments of Incident, Problem and Change Management This new procedure will be applied to the Application Manage Services project (AMS). AMS project will fully support the new Tipco Asphalt's ERP system in daily operation work. Once the ERP system is stabilized, every process will become fully automatic and integrated.

Mr. Chaiwat Srivalwat, the CEO, presenting information security and Cybersecurity emerging risks at the Staff Townhall meeting 2019



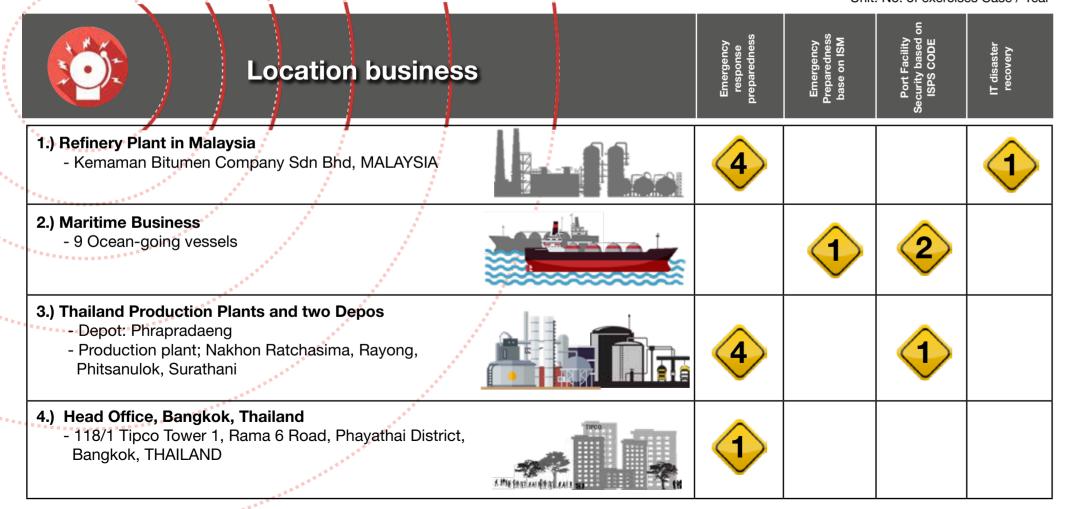
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BUSINESS CONTINUITY MANAGEMENT 1102-15 | Clause 7.5.3 |

The Group gives high priority upon business continuity management (BCM) as we anticipate potential adverse impacts from business interruption that could be caused by both controllable and uncontrollable factors. The Group, therefore, implemented emergency plans across several operational aspects to ensure the Group always standby ready and can continue its business operations amidst uncertainty. These plans are designed to minimize adverse effects while accommodating stakeholders' expectations that the group can continue with its business conducts without any interruption. The Group constantly plans, implements, practices and revises BCM on an annual basis. Top management members and staff participate in the BCM training practice programs to ensure everyone fully understands their corresponding roles and exact protocols to follow in case of emergency. The training program results are very satisfactory.

Unit: No. of exercises Case / Year



Our Enterprise Risk Management (ERM) has become one of the key tools for the Group to ensure our business conducts are carried out with greatest caution while still being able to fully reap benefits from all potential opportunities amidst rapidly-changing, highly disrupted market environment.



Chatwaruth Musigchai Senior Manager - Corporate Strategy and Risk Management

The UN Sustainable Development Goals



SDG 4: Quality education

Risk Management Office (RMO) constantly conduct ERM trainings and visits all key units to ensure their understanding on the concept of ERM while placing risk awareness as their top priority while working.

ERM training in 2018 and 2019: ERM training + visits to all key units in Thailand, refinery in Malaysia and JV in Singapore: 80 persons. This also includes 5 SD officers located in 5 Thai plants who serve as Risk Officers.



SDG 16: Peace, Justice and Strong Institutions

The Group aims to become a leading institution setting example for good corporate governance across all key aspects: treatments of stakeholders, role of BoD, anti-corruption practice and ethics, risk management.



SDG 17: Partnerships for the goals

Since 2017, the Group was awarded with level-4 membership of Thailand's private Sector Collective action Coalition against Corruption (CAC). This reveals our strong intention to serve as leading example of corporate fighting against any form of corruptions.

In 2019, our key progresses on anti-corruption include participations in several CAC's fighting against corruption events and activities as well as development of our corruption risk register, including implementation of internal controls.



growing business with Valuable **Trusted Partners**













Materiality Issue

Report Topic

Impact & Risk

Social Issue

GRI Standards

SDGs

Policy

Stakeholder

Objective

Responsible

Strategy

Execution

GIVING RESPECT AND EARNING RESPECT ON HUMAN RIGHTS

Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)	FY 2019 Performance
Collaboration for Business Growth and Expansion <i>via</i> Digital Platform, based on mutual benefits of maximum	 Expend use to accommodate all transactions type. For instance, expenses. This is to support work procedure of procurement department. Develop data analytics to accommodate decision-making or planning more effectively. Uplift sustainable procurement to international standard 	On-time Delivery for raw material and packaging 86% 2) Quality of raw material and		Not pass [79%] (77% for 1H2019 and 81% for 2H2019) on packaging and insufficient delivery time. Need to discuss with buyer to identify root causes and future improvement.
operational efficiency		Uplift sustainable procurement		packaging >99.5%
			Procure 3 or more items from local shops/producers that are certified with environment or social responsibility standard, or equivalent	Procure 5 items from local shops/producers that are certified with environment or social responsibility standard, or equivalent
8 DECENT WORK AND ECONOMIC GROWTH RETITITIES.			4) Proportion of spending on local in Thailand > 20MB	Proportion of spending on local in Thailand > 20MB

Impacts:

that are crucial for sustainable business developments.

Key business partner/supplier selection process via ESG criteria

Legend

G Strong Corporate





Empower local procurement units at the plant level, for more flexibility and convenience upon the

Enhance business partner potentials through company visits and due diligence on future improvements

#28) Developing Suppliers to be a Reliable Business Partners

Uncertainty of crude supply: Significant risk to business continuity and profitability

Internal: Employees - Logistics, Supplies and Procurement department

3.) Develop strong relationships with other groups within the organization

External: Business Partner, Supplier, and Community, Society and the Environment

2.) Manage the Procurement Process and the Supply Base Efficiently and Effectively

procurement process. This also supports local economic developments.

ISO Standards

#4) Procurement with Local

Suppliers

14) Environmental assessment of

the supply chain

Growing Business with Valuable Trusted Partners

Infrastructure Issues (i.e. Road Condition etc.)

SDG 8, SDG 9, SDG 12, SDG 16, and SDG 17

Sustainable Procurement Policy (TBR-QSR-M-04)

1.) Support Procurement Operational Requirements

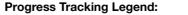
Logistics, Supplies and Procurement department

Win – Win and Walk Hand-in-Hand to Win More

4.) Support organizational Goals, Objectives, and initiatives

GRI 308. GRI 414











Missing interim target for more than one consecutive year; review and revise targets (if necessary)

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MOST EFFICIENT PROCUREMENT ACROSS SUPPLY CHAIN 1 102-9 I Clause 6.6.6 and 7.2 I



Collaborating with strategic partners to optimize supplies network capacity while achieving cost reduction

Management Approach

Effective supply chain management is well regarded as one of the key strategies for sustainable business conduct. TIPCO Asphalt Group has placed top priority on this subject, as supply chain management helps minimizing any risks associated with business disruptions which directly impact the Group's business operations. Meanwhile, it also supports the Group's business capability and future expansion effectively. The Group focuses on implementing innovations upon procurement work processes to improve supply chain management

Supply chain management also serves as a key linkage to the production process by ensuring consistent raw materials and service availability to accommodate the production plan, with the required quality. Risk assessment was conducted on procurement across the value chain; i.e., from raw materials, crudes, asphalts, chemicals up to delivery. In 2019, the Group promoted procurement activities that focused on the environment and social aspects while fully complying with the Group's Business Code of Ethics.

Meanwhile, the Group also emphasizes on enhancing the great relationship with business partners, including all stakeholders across their supply chains (Partner/Supplier Ecosystem) while continual development of knowledge and expertise of all parties to raise work efficiency. Good corporate governance was also implemented with all related parties to ensure the Group's long-term sustainable development. The Board of Directors, therefore, established a policy on sustainable procurement, with an aim to enhance value-added products and services across producers, service providers, distributors, product use, and production and to encourage corporate social responsibility across the value chain of the Group and partners. This can be evidenced through the fact that the Group implements partner selection criteria and ESG risk assessment (Environment, Social, Governance) on price and production costs.

The Group also encourages all staff to realize the significance of sustainable procurement by setting up key performance index pertaining to social and environment. The aim is to create a 'green procurement' practice with a focus on procurement from local sources. This hence will integrate sustainable development into part of the normal work process in value chain management, and create more customers' confidence upon production, product delivery and service with quality and meet high standards, and ultimately promote fair business operating practices with the responsibility to all parties, with long term substantiality.





LOCAL PROCUREMENT | 204-1 | Clause 6.6.6 |

Wealth and income creation for local communities: TIPCO Asphalt Group supports local procurements of products and services from business partners within local areas or nearby our facilities. This is done not only to promote economic diversity among local communities but also strengthen local business partners while empowering warehouse unit on local procurements and purchases in accordance with the Group's rules and work instructions that focus on high quality, fair price, environmentally friendly and supports to economic of local communities.

Unit: Million Baht

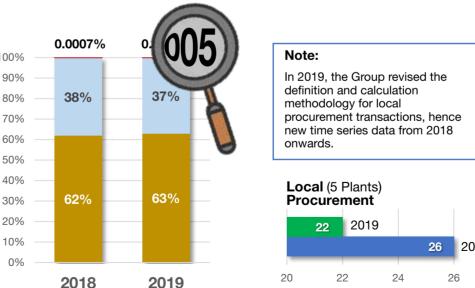
Local procurement	2018	2019
International Procurement	22,507	25,406
Thailand Procurement	13,820	15,013
Local Procurement (5 Plants)	2 6	22
Total Procurement	36,327	40,419

GREEN PROCUREMENT 1306-11 Clause 6.5.21

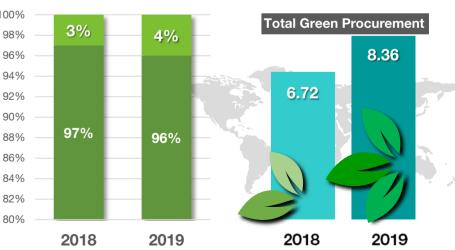
Our supports to local procurement of products and services that are environmentally friendly or certified with environmental standards ensure long-term sustainability upon natural resources while minimizing environmental impacts. The Group integrates this as key selection criteria for procured products and services as well as approved vendor list in our procurement process. In 2019, the Group procured more than 8.36 million baht worth of environmentally friendly products and services.

Unit: Million Baht

Green procurement	2018	2019
Procurement center	6.50	8.00
ocal Procurement	0.22	0.36
otal Green Procurement	6.72	8.36







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CLASS

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MOST EFFICIENT PROCUREMENT ACROSS SUPPLY CHAIN | 102-9 | Clause 6.6.6 and 7.3 |

Supplier management serves as a key element to ensure sustainable business operations while achieving the objectives. All business partners, both existing and new ones, that are distributors of raw materials and packaging must pass the assessment criteria set forth by the procurement department. Such a partner must pass assessment criteria in terms of quality, price, timeliness and delivery including human rights practices, environment and social responsibility. The Group also takes into consideration whether such partner be certified with standards on environment and social aspects, to be in line with the Group's business directions. The Group also provides advice to business partners to develop and enhance their capability for long-term sustainable growth. Our business partner assessment criteria in 2019 are as follows:



canceled

2019		20	18
Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec
33	41	33	29
12	13	13	17
3	2	14	5
0	0	3	4

Unit: Number of supplier

SUPPLIER VISIT | 308-1 | 414-1 | Clause 6.6.6 and 7.3 |

The Group provides follow-up monitoring and advice for business partners to promote their developments across the value chain, with a focus on raising their awareness and implementation of sustainable procurement philosophy while exchanging ideas for mutual benefits associated with social and environments through supplier visits. The Group selects business partners from key criteria on rating score, purchase volumes, procurement risks, with a frequency of such visit of at least once a year, in accordance with plans and work instructions.

Business partner assessment and evaluation include topics on quality, delivery, occupational health and safety, labour practice, human rights, environment and community involvement. In 2019, the Group monitored and coached 20 business partners, with knowledge sharing across various topics such as raw material development, switch to environmentally friendly products, fire-fighting system installation around crude storage and projects with community involvement.

In 2020, the Group plans to expand new channels to accommodate the monitoring and coaching our business partners; for instance, our suppliers can do self-assessment through an online evaluation form. This initiative not only helps create more channels but also allows the Group to access more partners, accordingly.





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to boost the performance of suppliers and drive continued business growth, through education, mentoring, and access to resources.

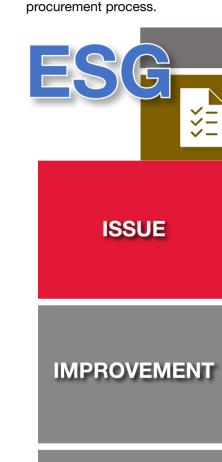
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SOURCING AND PURCHASING PROCESS: ISSUES & OUR FIRST PHASE DEVELOPMENT

In 2019, TIPCO Asphalt Group constantly improved our sourcing & purchasing processes to ensure most effective and timely procurement procedures that we can maximize timesaving with minimal work errors. Such system also helped business transactions with our partners to create confidence and transparency upon each procurement activity.

Tipco Asphalt Group strives for managing supply chain efficiently which help reduce direct impacts from operations and enhance our reputation. Efficient supply chain management allows us to deliver high quality products and services to customers in timely manner. The Group has integrated digital technology and automation system to enhance procurement process.



SOURCING PROCESS



Confirm & Place PO / Confirm **Delivery Schedule**



Goods Received & Payments

PROCUREMENT PROCESS



Receive PR / Forecasting

 Manual request for same items requires monitoring and approval

Procurement Plan / Sourcing

- Negotiation power for big-lot order
- Partners/suppliers assessment through ESG Criteria

. Manual record to confirm acceptance of construction / contract works for payment purpose

• Expense items which do not require procurement process

• Partners / suppliers assessment through ESG Criteria

- **E-procurement** on supplier platform; for instance, Officemate
- Automated PO generation to speed-up
- Conduct ESG supplier audit

- Develop digital platform
- Complex P/O to serve multiple payments transaction, with Committee's approval in the system
- User friendly
- Harness information goods

- Automated P/O for expenses- Purchase Order
- Select the frequently consumed items within specific budget and pre-procurement to use that price as reference until further changes.
- Conduct ESG supplier audit
 - Enhance ESG knowledge and awareness of the Group's procurement personnel and suppliers
 - Analyze data and assess ESG risks in the supply chain, and increase efficiency in data management and reporting system

IMPACT

- Traceability
- Transparency
- Efficiency i.e. reduce buyer's workload, shorter process, reduce monitoring and approval for small value items
- Co-develop sustainable procurement with partners/suppliers

- Traceability and ability to control payments pertaining to contracts
- Transparency
- Efficiency
- Information goods are easily accessible

- Simplify but still gain full control
- Eliminating paperwork and manual effort, and hence cost saving
- Speed-up processes with full security
- Processes are fast, reliable, and accurate

- Co-develop sustainable procurement with partners/ suppliers
- Support suppliers in developing technology and innovation, hence lead to cost saving, increase revenues and minimize environment and social impacts



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SUPPLIER ENGAGEMENT

Supplier Development

TIPCO Asphalt Group commits to develop our business partners to safeguard smooth business operations. Such cooperation also encourages sustainability value co-creation, with key focuses on environment, social and good corporate governance while promoting business ethics and public road safety.

Several initiatives were conducted together with business partners to ensure their understanding and follow our SD practice. For instance, business partner engagement on 'safety' activities: these projects were conducted with an aim to raise our business partners' awareness on occupational safety and health.

The Group invited some of our current raw materials and packaging suppliers to participate upon these activities. In 2019, staff from suppliers attended our basic life-saving (CPR) training program.

Our Supplies and Sustainable Development Departments also co-conducted regular visits to our business partners to assess and evaluate them while exchanging new ideas for further improvements together, hence improving our partners' potentials and growing together in sustainable manner.

In near future, the Group aims to launch innovation plan to digitize supply chain management operation, with data migration to a cloud-based virtual system. This comprehensive, fully-automated system can forecast supplier delivery time, with better overall visibility across all operations and can help optimizing production time and procurement plan.

Our Ambitious Plan 2020 for Supplier Engagement

We plan to setup joint targets with partners/suppliers pertaining to sustainable procurement through seminars in order to co-create knowledge and development toward sustainability. In addition, activities should be conducted to encourage mutual understanding and good relationship with partners/suppliers for long-term businesses.



TIPCO Asphalt Group has placed top priority on sustainability value co-creation with our business partners through several projects to ensure their understanding and follow our SD philosophy. For instance, 'safety' awareness promotion or basic life-saving (CPR) training programs.

In addition, our Supplies and Sustainable Development Department enhances long-term relationship and encourages our partners' engagements through our regular visits to assess and evaluate their potentials and growth together in sustainable manner.

Mr. Thierry Defrene

Chief Operating Officer - International Trading and Business Development, Tipco Asphalt PCL.





We places top priority upon our sourcing and purchasing, with focus on our commitments to business partners, both domestic and international. This also includes maintaining great, mutual relationship with our alliance network. We promote co-business developments together, both in terms of business and social aspects to maximize long-term mutual benefits....

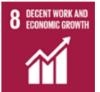
Chitmanee ChiranantaratanaSenior Manager - Procurement and Supply

The UN Sustainable Development Goals



SDG 4: Quality Education

We share information and co-conduct trainings regarding sustainable procurement with our suppliers to ensure we develop and achieve our goals together.



SDG 8: Decent Work and Economic Growth

We align our goals and operations with business partners & suppliers to ensure business developments and mutual growth.



SDG 9: Industry, Innovation and Infrastructure

We implement modern technology to optimize customers' experiences with us. In the highly competitive business environment, we must deliver beyond customers' expectations: perhaps through innovations.



SDG 16: Peace, Justice and Strong Institutions

We stay fully committed to fair operating practices to all related stakeholders. More importantly, we treat them beyond minimum requirements set forth by laws & regulations.



SDG 17: Partnerships for the goals

We closely partner with our suppliers to drive sustainable improvements across value chain. We create good relationships with suppliers to provide a safe working environment, fair worker treatment, and environmental care.













WE MUST BE A GOOD CORPORATE CITIZEN,

- Chaiwat Srivalwat - Since 2010



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OUR FIRST FOOTSTEPS

Mission

A well-recognized leading asphalt focused company in Asia Pacific

Vision

To distribute 2 million tons of asphalt products by 2015 and be the key contributor to the success of all stakeholders while maintaining the highest Corporate Social Responsibility standards at all times

Integrated social responsibility in Vision 2010

2003



Corporate Social Responsibility **Industrial Works**

2008



Participated in the promotion project (CSR-DIW) hosted by the Department of



2009

engagement



Publicly announced the Group's policy on social responsibility and community



Set a target for community volunteer participation at 16 hours/head/year

2011



Applied ISO 26000:2010 (Guidance on Social Responsibility) accredited by MASCI Institute.

2012



Innovation Awards (Economic category, Honorable mention prize) from the **National Innovation** Agency, with our "quick-dry formula, Para Asphalt product"

2013



Joined the ESG-100 list

Won the National

2016



During the past years and in the future, the Group

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shall continue to implement management system with

international standard, to raise our competitiveness,

innovation while co-creating values for both the organization and related stakeholders in sustainable manner.

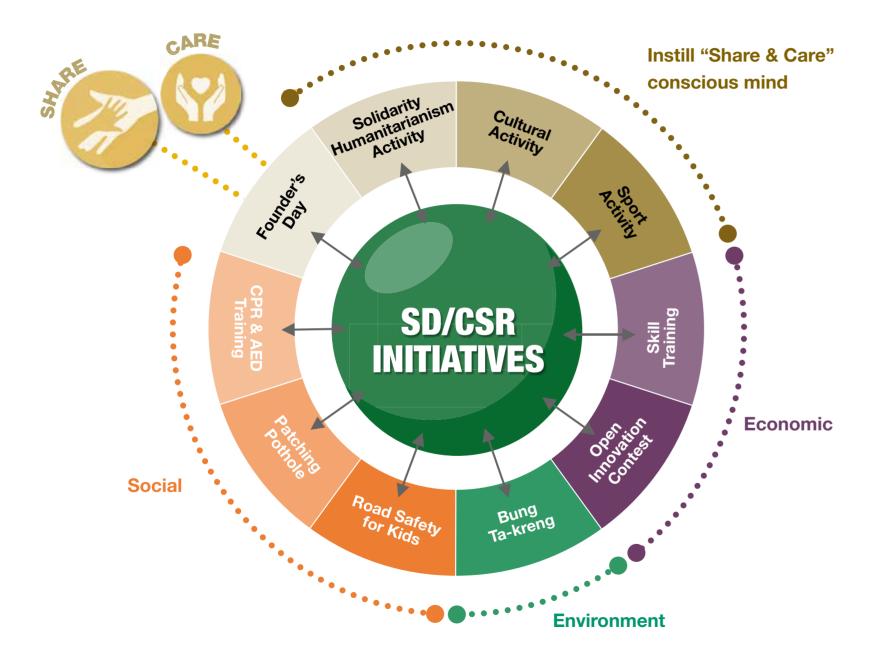
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Chaiyaphong Phongauksorn Consultant & Former SD Senior Manager

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CSR PROJECTS & PARTICIPATION IN CONTINUOUS DEVELOPMENT



Instill "Share & Care" conscious mind

IN THE BEGINNING WE STARTED FROM CORPORATE PHILANTHROPY AND JOINED / SUPPORTED COMMUNITY ACTIVITIES

As a member of the community, TIPCO Asphalt Group started out with corporate charitable events. These allow our top management to come across several aspects that the Group can provide long-term supports to encourage mutual reliance, benefits and developments together in sustainable manner.

The Group adopted self-sufficiency economic philosophy as a guideline for activity participation with related stakeholders in the community. A charitable donation can only be viewed as 'give them fishes' that only accommodate their short-term needs. But 'teach them how to fish' or providing them with development tools will ensure more long-term sustainable results. The group, therefore, focuses more on 'engagement supports' through donation approach; for instance, providing supports for alternative education, informal education, non-formal education (for children of foreign labour), career promotion for female workers in certain areas, to name a few.

In addition, some activities are conducted by our internal staff such as a co-charitable event with Buddhadasa Achieves or, exercise rubber-bands donated to hospitals. These activities hence encourage the 'giving' attitude among our staff.

I believe in a strong foundation of society will serve as a key driving force for national economic developments across all areas. In particular, we implement our true expertise across our value chain activities while we constantly promote activities throughout areas nearby our plant locations. These hence yield tangible results that can be clearly evidenced from better education, occupational health and safety and community incomes.

Chonprakhan Janthareuang

The Headmaster of Community and MoradokMai Homeschool Thailand Artist of the Year 2019, in the category of Performance Arts

"giving' to others is a true beauty and sustainable act"

The Moradok-mai Community School is well regarded as a performance art institution that encourages students to express their ideas, sharpen their art skills while embedding Buddhist philosophy upon self-conscience and shame of sins, through the stage plays. The School also adopts self-sufficient agriculture practices, with all instructors are volunteers while all boarding students stay at the compound with no expenses.

For the past 10 years, the TIPCO Group has been alliance with the Moradok-mai Community School providing supports for the school operations to achieve its objectives and raise self-esteem of those underprivileged students. The Group developed a school compound area into classrooms and residential units that include female/ male dormitories, training center, and technology center. The Group also provides advice for school community management to ensure smooth operations.





er. e-mail: info@raksthai.org
www.raksthai.org
e- FB: Raks Thai Foundation
Tel: 02-2656888

Somchit Sertthin, Director, Former CEO 1986 - Aug. 2019

The Society will gain the most benefits as businesses start to 'give'

The TIPCO Asphalt Group strongly commits to our business philosophy focusing on mutual benefits of both the group as well as the society, with the society must receive the most benefits. 'Giving' is another TIPCO Asphalt Group's core DNA that has long been instilled within the organization through 'lead by example'; i.e., from charitable donations or supports to promote local community lifestyle. But most importantly, 'Giving' was the result of caring mindset and awareness of volunteering spirit embedded in each of our staff.

The sharing mindset must be instilled, from within the organization and further extended to external parties. Meanwhile, we must consider the social and nearby communities whether we could utilize our expertise or assets to create more benefits for them, through new ideas from our staff followed by the actual implementations via volunteering deeds.

No matter how the environment changes, the TIPCO Asphalt Group commits to its 'Giving' policy to ensure long-term benefits for the society as well as the businesses in a sustainable manner.

Promboon Panitchpakdi Board Member, Executive Director Raks Thai Foundation

"we empower people everywhere we work."

Raks Thai Foundation is a Civil Society Organization found to create and fuel Thai society across areas of public health, education promotion, women career promotion, environmental management and preservation including rehabilitation of victims from natural disasters.

With continual supports from TIPCO Asphalt Group, Raks Thai Foundation can efficiently conduct several lives quality enhancement projects across 28 provinces nationwide. This year, the Group sponsored the "The Starry Sound of Music" charity concert event hosted by Raks Thai, with the objective to raise funding for Skill Learning and Development for Foreign Workers' Children Center in Samut Sakorn, Nakhon Srithammarat and Pattanee. The center provides opportunity and readiness for foreign workers' children with no equal access to education.

With TIPCO Asphalt Group's continual supports, Raks Thai Foundation to provide opportunities and fuel for those underprivileged groups while creating a bette society in a sustainable manner.





e-mail: info@raksthai.org www.raksthai.org FB: Raks Thai Foundation Tel: 02-2656888

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 326 | 2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 327 |

INSTILL "SHARE & CARE" CONSCIOUS MIND 1413-11 Clause 6.8 and 7.4 I

Founder's Day; July 25, 2019 (Annual Corporate Event)

"Founder Day" is another important annual event for TIPCO Asphalt Group when all staff volunteer for several social activities, both at the Head Quarter and at plant sites, where our staff participate upon activities with local community members. These activities began as small events and then were further developed into long-term activities that can deliver mutual benefits in sustainable manner."

Phayathai Pirom Garden Renovation

The Phayathai Pirom Garden is a small size public park located near our Head Quarter. It is used primarily as mutual ground for nearby residents, hospital and office staff to exercise. In 2019, the Group hosted our 3rd annual volunteer activity to renovate jogging and bike lanes using our Premix asphalt products.









Activities with School for the Blind, Bangkok

Braille notebook for the blind students.



Rubber Bands Changing Lives, all locations

Blind handicap students at School for the Blind, "Rubber Bands Changing Lives" is another activity that we joined the project of Bangkok, is one of our key stakeholders around Dr. Methee Thamwathana using simple equipment to create elastic bands for Head Quarter. We constantly host volunteer exercise for physical patients, the elderly and the general public. This activity is activities with them; for instance, museum tour not only conducted at the head office but spread to all domestic areas where for knowledge haring in 2018 and 2019 or making factories are located. We delivered 912 pieces of rubber bands to the various hospitals. This project will at least help our staff to get better health from small







un	it:	TH	ΙB

Founder's Day	2017	2018	2019
Donation Fund Raising	2,742,2555	1,532,921	1,655,472



@ Suan Mok, Bangkok

laving full consciousness and conentration while doing things greatly help upon everyone's work and life to be more planned, well thought of while can generate benefits to other underprivileged groups. The Group and Suan Mok, Bangkok co-host everal activities every year with our staff participating in key Buddhism related activities, to learn the meaning of 'giving' through different activity formats. Last year, we hosted an activity on making 'yellow robe' cloth bag and donate to patients.

INSTILL "SHARE & CARE" CONSCIOUS MIND 1413-11 Clause 6.8 and 7.41

Solidarity Humanitarianism Activity

The Group gives high priority on charity event sponsorships and allocates an annual budget for financial donation support. We acknowledge that there are still some groups of stakeholders beyond our reach that require immediate assistances. These supports remind us about our role as both good corporate citizen in the society and sustainable development promoter for equality across different dimensions such as education, public health, women's rights, to name a few.

"Moradokmai" stage performance annual charity

'Home school' approach has gradually grown in popularity, in particular, the Stage Performance Art studies. "Baan Moradokmai" school was found to promote underprivileged youths with passion for stage performance arts but cannot afford tuition fees and costs of living expenses. The school operates in accordance with Buddhist philosophy while students must pat their total dedications upon study and practicing. With its rather limited staff and resources, most of Baan Moradokmai" school performance events are conducted in the form of charity events such as tour rally at schools or 'street performance' for donations throughout the year. Since 2012, the Group has sponsored to the school through managing and arranging the performance events at the Auditorium,

TIPCO Tower.







Supported Moradokmai	2017	2018	2019
Annual Donation (Baht)	1,241,360	1,087,512	1,079,607

Solidarity Humanitarianism Activity

Support "Raks Thai" Event



Raks Thai	2017	2018	2019
Annual Donation (Baht)	85,600	2,473,743	2,302,543

Annual Blood Donation



Accumulation	2017	2018	2019
Blood Donation (cc.)	98,850	67,200	75,800

Cultural Activity

The Group firmly believes in local tradition, culture and religious activities as a way to promote living together in society. Most of our staff and stakeholders practice Buddhism while our management team agrees that these meditation and donation charities will help purify our attitude and become better citizens.

Monthly Meditation Camp with at Ban Boon, Nakorn Rachasima

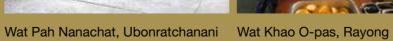


This meditation camp activity is hosted by Reverend Chaya Saro, to practice mediation and alms at the Baan Boon. Pakchong District Nakhonratchasima province. This activity is offered 6 times per year.

VOLUNTEERING COMES FROM HEART AND GROWS IN YOUR SOUL | 413-1 | Clause 6.8 and 7.4 |

Corporate Annual Khatin, Ubonratchatani and Rayong







Sport Activity

Great health, sports and regular exercise are some of the important things our top management has constantly promoted. In addition, the promotion of sports activity highlights our core values 'Teamwork'. This sports event received great participation from the Group's staff in Thailand, foreign subsidiaries and business partners. The event not only promotes "Open minded" core values but also exhibit "equality" across our key stakeholders.

Thailand Cup 2019

Asia-Oceania Cup 2019





Big event - COLAS Team Cup. France



INSTILL "SHARE & CARE" FROM OUR OVERSEAS SUBSIDIARIES

COUNTRY ACTIVITY





"

If an organization uses CSR to 'train' and 'groom' its own internal staff, we shall see beginning of good corporate governance in a company whose staff are good, honest and cares about others including social concerns.

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BEING GOOD CITIZEN

Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)	FY 2019 Performance
Create a Happy Communities, improving Quality of Life for Society	ing Quality CSV initiatives that mainly are in-process activities and support communities' needs, in	 CSR Project Satisfaction 87.2% CSR Volunteering Hours 23,978 hours CSR/CSV Employee volunteering engagement 95% 	1) CSR/CSV Project Satisfaction 85%	1) CSR/CSV Project Satisfaction 89.0% 1.1) Community's CSR/CSV Satisfaction = 92% 1.2) Employee's CSR/CSV satisfaction = 87%
and Building a better society Tipco Asphalt ecosystem) main sustainability strategy	 4) CSR/CSV Projects Cash Contribution 13.3 M.THB 5) CSR/CSV Projects Management Overhead 4.9 M.THB 6) CSR/CSV Projects In-Kind Donation 0.9 M.THB 	2) CSR/CSV Employee Volunteering Engagement 95%	2) CSR/CSV Employee Volunteering Engagement 93.5% (Only in Thailand Operations 671 persons)	
		 7) CSR/CSV Projects Time: Employee Volunteering during paid Working Hours 3.9 M.THB 8) ESG Complaint 1 Case and closed within 24 hours 	3) CSR/CSV Volunteering Hours 10,736 hours/person/year (Assumption: Total employee in Thailand 671 persons and expected each person experience volunteering project 16 hours / person/year)	○ ○ ●3) CSR/CSV Volunteering Hours 15,358 hours/person/year
3 EDOD SEATTS AND WILL SENS			4) ZERO ESG Complaint	4) ZERO ESG Complaint
Progress Tracking Legend:	Meeting interim targets, maintain	performance Fall short	of interim target for three quarters;	Missing interim target for more than one consecuti

towards meeting 2025 targets



Hall short of interim target for three quarters; review current practices



Missing interim target for more than one consecutive year; review and revise targets (if necessary)

#27) Participation and Community Development **Materiality Issue** #33) Increase Social and Economic Participation of Communities Report Topic **Being Good Citizens** Impact & Risk Gain trusts from local communities, Enhance stakeholders' relationships Management Responsibility to the Close-by Operations Communities Social Issue ISO 26000 Core Subject 6.8 GRI 413 ISO Standards **GRI Standards** 7== SDGs SDG 3, SDG 8, SDG 11, and SDG 17 Policy Social Responsibility Policy (TBR-QSR-M-03) Internal: All employees Stakeholder External: Communities close-by plants, CSV Partners, Academic Institutes Objective 1) Improving quality of life for society by uplifting mainly for the good health & safety issues 2) Secure the Social License to Operate and strengthen the trust with all stakeholders 3) Knowledge sharing for community development and creating shared value 4) Creating CSV activity community with business partners for sharing the experience of the CSV activities and expand the projects by joining with partners. Responsible CSR Team with SD Officer from all plants Strategy "Be your good citizens and you can trust and rely on us" Execution Review CSV projects with stakeholders (communities, activities partners, etc.) and improve plan before

Prepare and execute with communities/partners according to plan/budget

Evaluate the successes of CSV projects implementation

Impacts:



proceeding















TIPCO ASPHALT AND COMMUNITY DEVELOPMENT | 413-1 | Clause 7.6.3 |



Improving quality of life & creating safety awareness for community/society

Management Approach

The company has adopted a new method of CSR project management to be consistent with the company's business practices. Thus, the company can constantly utilize its knowledge and expertise upon the successful conduct of various activities and then passed on to the community for further development. The company also provides advice to ensure the greatest benefits. This serves both as a solution to community problems as well as meeting all stakeholders' expectations. Key focuses are on building good relationships while serving as a good member of the community, hence allowing the company to conduct its businesses sustainably. This philosophy can be reflected across project activities, both in areas around the factory's premises and nearby communities, along with business operations that are responsible to the community and society.

The company reviewed CSR plans in the past year, to link CSR activity projects to business through selected activities collaborated with the community and in sync with the community's interest. Projects with high satisfaction assessments will be continued and expanded across other areas. Appropriate adjustments were conducted on those projects that need to be improved by giving the community confidence in the safety and the quality of life of the communities nearby the factory premise.

Scan here for Corporate Social Responsibility



The ESG Complaint Management

Tipco Asphalt Group developed the community feedback mechanisms implemented in our major operations and projects allow us to receive, track and respond to questions and complaints from community members. In Tipco Asphalt Group, our activities increased traffic, resulting in dust pollution and health concerns for the local community. we set up a Plant Sustainability Officer to work closely with a community representatives, who brought the concerns to the attention of leaders in Tipco Asphalt's upstream organization in Thailand.

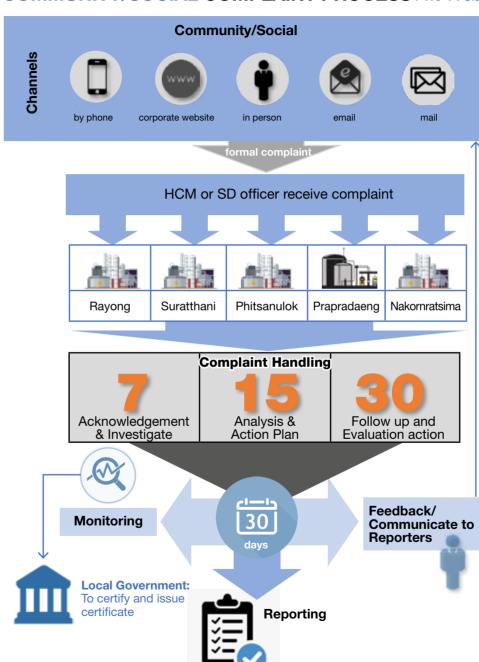
An effective communication with stakeholders is the foundation and the driver for a successful ESG management. The engaging in a dialogue with sincerity and transparency will help promoting for the learning and CSR activities, that will lead to increased sharing of knowledge and wisdom with society. As well the providing of the effective communication channel that stakeholders can easily access and give feedback.





2017	2018	2019
0	1	0

COMMUNITY/SOCIAL COMPLAINT PROCESS | 419-1 | Clause 7.6.3 |





Website: www.tipcoasphalt.com

Step 1 - Receiving complaint

- HCM or SD officer receives complaint and reviews complaint
- Send completed report complaint to plant manager
- Plant manager assigns complaint handlers

Step 2 - Corrective and preventive action process

- Complaint handlers acknowledge and investigate for validity within 7 days
- Root cause analysis and improvement action within 15 days
- Follow up and evaluation action within 30 days

Step 3 - Communication to complainant and close complaint

 Aim to respond within 30 days, and will keep you updated on progress if a longer timeframe is necessary

Step 4 –Monitoring outcome

- Follow up corrective and preventive action outcome by internal auditor of the management systemonce a year
- Monitoring social complaint registered by local authority at least once a year

Step 5 – Reporting

• Top management to improve level of prevention to improve level of prevention

Remark

Mail: Susainability department 25th Floor, Tipco Tower 1, 118/1. Rama 6 Road.

Phayathai, Bangkok 10400 THAILAND

Phone: +662 273 6000 E-mail: sustainability@tipcoasphalt.com

COMMUNITY DEVELOPMENT 1413-1 I Clause 6.8 and 7.4 I

Development Plan for Society/Community in economic, environmental and social perspectives

As per our business conduct with responsibility to social and environment, the Group sets a priority upon community and environment developments, with a clear policy guideline as well as strategic plans formulated for social responsibility. This is fully consistent with sustainable development strategy while the Group focuses on 2 approaches regarding implementation of social responsibility works; i.e., activities as part of the Group's core business processes and other activities that are separated from core businesses.

The Group constantly revises key activities to ensure they are fully integrated into normal work processes. For instance, asphalt product sales and production units co-hosted "Road maintenance for safe journey" event with demonstration of proper road maintenance technique to local communities. The objective was to provide knowledge while repairing local roads to ensure community safety.

Other activities not related to normal work procedures are; for instance, basic first aid and automated external defibrillator (AED) training. The Group considers these lifesaving initiatives as crucial part of public road safety value chain, which serves the Group's social responsibility objective. This will impact directly to the key objective for promoting road safety for our Group, communities and societies.

The below CSR strategy are designed with full alignment with sustainability strategy. We believe, through these practices, we can achieve our sustainability goals: Integrated strategy, and shaping social expectations. We can gain competitive advantage through sustainable business practices

INNOVATION LEADS TO THE FUTURE

In order to respond to rapidly-changing environment and Thailand 4.0 national strategic plan, the Group commits to develop operations with focuses on innovation; i.e., products, services, work processes, and new business ideas. Major objectives are to enhance product efficiency, reduce energy consumption and hence lower environmental impacts, especially future products while maintaining leadership position in the asphalt industry.

LOW ENVIRONMENTAL IMPACT

The Group aims to develop and utilize technology to improve the operations of the Group, across the value chain for high efficiency while minimizing environmental impacts. This includes creating a safe environment for operations on the basis of CSR and good corporate governance guideline

COMMUNITY SAFETY FIRST

The Group emphasizes on raising awareness of community safety; in particular road use safety and accident prevention knowledge for helping others when accident occurs in accordance with international standards. The Group also organizes series of activities for young children and youths on road safety knowledge while they can help further share such knowledge to their family to ensure community road safety and good quality of lives.

INNOVATION ECO-

EFFICIENCY AWARENESS **OPERATIONS**

Innovation Leads to the Future

Low Environmental Impact

Safety First



CSR Framework

Strategy

Co-Creation Innovation

Save the World

Save & Safe

Truck Fleet

Professional

Truck Driver

Application

Training Center

Hazard Warning

Safety for All

Knowledge Sharing

Co-Value Creation

Foster Innovation Culture

- SMART Innovation Competition
- Training the usage & application of **PREMIX**
- Training for Parttime career
- Moradokmai Home School Sponsorship
 - Tipco Open House

Eco-Friendly

- Bueng Takreng for sustainable integrated tourism
- Constructing New **Road. but Forest** still survives

Safety Road for All

- Patching Pothole Road Safety to
- School
- Road Safety for Kids

Post-Crash Care

- CPR Training
- Support CP Group for CPR instructors
- ER equipment

ECONOMIC

ENVIRONMENT

SOCIAL

CSR Core Project 2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 338 |

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 339 |

CSV/CSR PROJECTS & PARTICIPATION IN CONTINUOUS DEVELOPMENTS | 413-1 | Clause 6.8 and 7.4 |

The Group is committed to sharing & caring awareness while instilling knowledge and understanding on how to contribute to society through systematic and standardized CSR activities for sustainable community developments.

In addition, the Group also coaches employees on leadership and aptitude for the work applied outside the company, including decision making through opinion sharing with the community. It is about customer-centric management that employees can learn from these activities that will create mutual benefits for both the community and the Group.

In 2019, the Group identified 6 Iconic Projects implemented in each area, including the headquarter. Each area must conduct the in-depth study of the activities to ensure efficient management of the activities before standardizing them to be repeated across other areas. Subsidiaries or partners can conduct these CSR activities in their own areas and repeated on a regular basis.

Project 1: Nakhon Ratchasima province, "Road Safety for All" (Patching Pothole)

The Project's objective is to enhance road safety for all road users, including various assets as well. Since 2016 the company begins this initiative by fixing road surface/potholes that may cause accidents. The company conducted this activity with the employees in conjunction with other private and local government organizations. Target areas were where the company's office and factory are located. In the year 2019, the Mitr Phol Sugar Public Company Limited joined the company as project partner: the target area was extended to encompass Mitr Phol factory premises.

Project 2: Bangkok, "Road Safety for Kids" (Edutainment for Kids)

The project aims to provide knowledge of safe road use, according to traffic laws

while enhancing road safety experience when traveling with adults or on their own

We also put the knowledge of English relevant to daily life and road safety. We

got good cooperation from many agencies in development of appropriate activity and equipment. The project expectation is that within 3 years, children in schools nearby the factory premise will have the proper knowledge to comply with traffic

rules and be a good road user in the future.





Scan here for Patching Pothole



Scan here for Road Safety for Kids VDO







KEY ISSUES

We respect the community's human rights for working on CSR/CSV initiatives by conducting community engagement meetings with the local community members nearby where we operate. Tipco Asphalt conducts several initiatives aimed at improving local community's standard of livings. As for participation in the community develop-ment, the Group respects of community rights and protecting their interests with full laws compliance. We also encouraged sustainable community development with the following workflow:

Community / Social Development Project that affects the local community

Community leaders / Local Authorities conduct public meeting in the area or dialogue

- 1) Project Clarification with details
- 2) Explanation of potential project impacts
- 3) Benefits to the community

Community members agreed with the social activities and write a MOU by authorized signatories and communicate before proceeding





Project 3: Rayong Province, "Basic Life Saving Project For every life safe" (CPR & AED Training)

The initiative aims to provide basic life-saving training, including information on how to use defibrillators. The project was conducted for the benefit of the general public using the standards recommended by the Life Saving Standards Committee & The Heart Association of Thailand. The Group has made sure that its staff members have completed the Basic Life Saving Instructor Course for the general public (Instructor for Non-HCP) to be able to conduct life-saving teaching courses. This is done with the assistance of medical professionals who fulfill all of the necessary requirements.

In 2019, 26 staff participated in the program, hence resulting in a total of 38 Basic Life Saver instructors with BLS Instructor certification granted by the Life Saving Standards Committee & The Heart Association of Thailand. The Group also conducted this initiative upon nearby communities, as well as those interested individuals and staff' family members around 310 individuals in 2019, hence totaling 406 participants who graduated the program. In addition, the Group co-supported the "Basic Life Saving Training" project initiated by Charoen Pokphand Group (CP) by sending 6 of our own certified instructors to conduct the program in 6 provinces, with a total of 1,080 participants.





Scan here for CPR & AED Training VDO

CSV/CSR PROJECTS & PARTICIPATION IN CONTINUOUS DEVELOPMENT 1413-11 Clause 6.8 and 7.4 I

Project 4: Suratthani Province, "Professional Skills Development **Project in Asphalt Business"** (Support Education)



The project aims to develop skills for technicians or any local individuals who want to gain professional knowledge related to the correct use of asphalts. This was conducted in collaboration with the Department of Rural Roads, Surat Thani Rural Road Office District 11 and the Department of Skill Development, in providing Certificates for those who have met requirements on training and practices to create a career in the community. The project aims to develop skills for technicians or any local individuals who want to gain professional knowledge related to proper asphalt use. The project was conducted in collaboration with the Department of Rural Roads, Highway District 11 and the Department of Skill in providing Certificates for those who have met the requirements on training and practices to create career opportunities in the community. The Group compiled name list of graduated trainees who completed the trainings and sent it to distributors for skilled contractor-customer matching, along with asphalt product offers.

Project 5: Samutprakan Province, "SMART LOGISTIC "- an Open **Innovation Contest** (Collaborative Innovation)

This innovation contest project expands to higher education students. The aim is to bring technology to optimize work efficiency while students nowadays are knowledgeable in computer / technology.

The Group also provides opportunities for educational development and various knowledge. Finally, we also give an opportunity for the participants to join our Group. The topic of the contest is related to our business and is continuous development.





We developed "Professional Skills Development in Asphalt Business" project with key partners, namely the Department of Rural Roads (DOR district 11), Department of Skill Development, Suratthani and our Suratthani plant's CSR



We launced the "Open Innovation" project through collaboration with local academic institute. The Phrapradaeng terminal collaborated with King Mongkut's University of Technology Thonburi (KMUTT) for the "SMART Logistic" topic for innovation contest with students from all universities in the Central region. KMUTT serves as the host for Tipco Asphalt for the innovation contest.



WE IMPROVE COMMUNITY LIFES

CSR/CSV volunteering service and philanthropy are an integral part of our culture. We're committed to giving back to the communities in which we live and work, using our employees' expertise and our company's resources to address unmet needs in our communities, deepen engagement with our colleagues, customers, suppliers and partners to improve their lives.

In 2019, 671 employees in 6 provinces in Thailand with 8,970 people in local communities, took part in our Best of Tipco Asphalt Group volunteer program, contributing more than 15,000 hours of volunteer service.











Project 6: Phitsanulok Province. "Bueng Takhreng Integrated Development" (Community Ecosystem)

With 5 years of continuous developments, this project aims to create an ecosystem while conserving and restoring water sources. The project was designed as an integrated learning and tourism center: this was done jointly with Naresuan University for project master plan. The company has completed key tasks of big tree relocation: that is, to conserve those trees that grew within the path of new public road construction in Phitsanulok and move trees into the marshes. Objective is to preserve/conserve plant species and relocate those large trees for a more sustainable landscape location. Currently, 2,498 trees are planting in the project area, coupled with more than 800,000 different freshwater species of fish and shrimp to create bio-diversity.



Bueng Takhreng VDO

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 343 |

671 EMPLOYEES SPENT OVER 15,000 HOURS ON VOLUNTEERING PROGRAMS | 413-1 | Clause 6.8 and 7.4 |

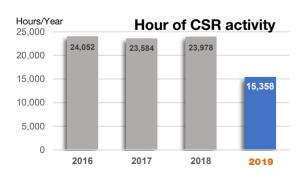
Hours of Voluntary Community Services

During 2019, the company decided to remove hours of volunteer activity from performance evaluation for the entire organization. This is to ensure provision of systematic knowledge and correct understanding about corporate social responsibility that can be conducted continuously while cultivating a sharing culture for mutual benefits in society. Employees will be equipped with full knowledge and understanding that can be further extended to their families and society, hence encouraging more 'sharing' across the society.

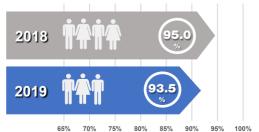
It was found that, after cancellation of the 'CSR hour' rating system, the total volunteer hours that employees spent together with the company and the community has showed a significant of reduction; e.g., the hours recorded were below the company's 3-year average level around 36%. The main reason is that we have more focusing on number of CSR/CSV projects and keep projects that concerning our business. Anyhow, the engagement rate is almost the same 93.5% Vs. 95%, and this is convincing evidence that our employees have participated in volunteer activities in various projects from their own volition, with "FEEL SO GOOD" attitude while doing these. The company will stay fully committed upon continued supports to CSR/CSV initiatives, to ensure long-term sustainable developments.

* Recorded only from Thailand Business

CSR Activity	2016	2017	2018	2019
Hour of CSR Activity from employees (Hour)	24,052	23,584	23,978	15,358
Rate of Activities (Hour/person/year)	33.7	32.6	34.8	22.9
Number of Employees Participation (person)	714	723	689	671
Employee Volunteering Engagement (Report only in Thailand from total 718 persons)			95.0	93.5



Employee Volunteering Engagement



KEY ISSUES

CSR Activities Impact to

• Employees 671 persons
• Communities 8,970 persons
• CSR Partner 22 organizations
• Children K.G. – P.4 11 Schools
• Road Repairing 13 Km.

Patching Pothole / Road Surface Repairing

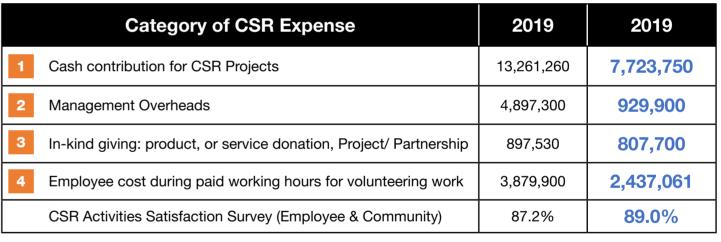
Budget Allocations for the Corporate Social Responsibility Activities

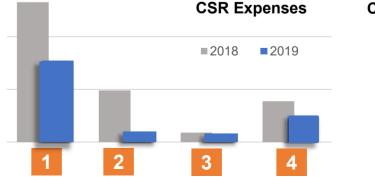
Following the company's recent CSR activities guideline adjustment in 2019, major focus was placed upon key **signature CSR projects** implemented as main activity upon each area that the company operates in while our employees and local communities will serve as co-owners.

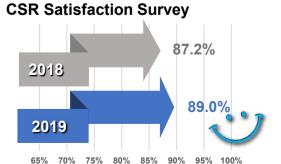
This year the company organized projects in collaboration with partners, stakeholders, in order to expand the activity areas encompassing more social / community developments without incurring significant expenses. This hence allows continuous budget allocations for future projects. Key emphasis was placed upon creating CSR network through collaborate on major activities with clear objectives, including clear benefits to the company and the community, in order to ensure greatest benefits to the society.

From this new approach of the CSR Collaboration, we found we had a better control of the total project expenditures including the paid working hours for volunteers reduced significantly. The learning of CSR Project Management gave us better visibility to make yearly plan and get good feedback from both our employees and CSR partners, proven by the CSR Activities satisfaction score increased to 89%.

Unit: Baht







SUMMARY OF KEY CSR PROJECTS & SUSTAINABLE DEVELOPMENT OBJECTIVES AND IMPACTS | 413-1 | Clause 6.8 and 7.4 |

		Objective	CSR Framework	CSR Project	Economic Impact	Environment & Social Impact	SDGs
AFTER PROCESS ACTIVITY Reducing Loss and Waste Delivering Better Value		Innovation Driven Growth	Co-Creation Innovation Foster Innovation Culture	 Promote industrial innovation contests among local academic institutions Conduct annual innovation contest for the organization, and raise staff awareness of new initiatives and developments toward excellence Collaborate with partners, academics upon products and services developments, at the industrial level 	 Promote the corporate culture that allows staff to initiate new ideas for work improvements which result in cost reductions Continue developments on products and technology Government tax policy provides 300% tax-deductible incentives for innovation developments projects 	 Integrate all related producers, from upstream to downstream chain, to minimize costs while optimizing production time Promote nation's development through innovations focusing on industrial developments Promote students to become 'quality creative thinkers' 	9 MINISTER, MACHANIER AND INFRASTRUCTURE
		Create Shared Value	Co-Creation Innovation Co-Valued Creation	Develop 'Bueng Takhreng' reservoir into a sustainable, eco-tourism attraction Preserve large trees along new rural/highway roads by re-locating them to Bueng Takhreng project. "The trees still survive despite new road construction" "Bueng Takhreng Running" mini-marathon, fund-raising event to finance tree re-locations and project development	Enhance great, mutual relationship with local communities through sharing of knowledge, experience while seeking solutions to problems and developing community toward sustainability	 The community can enjoy the site for recreational and exercise activities The site serves as a sustainable income source for the community 	13 ACTION 15 = 15 = 15 = 15 = 15 = 15 = 15 = 15
	••	Knowledge Development	Co-Creation Innovation Co-Valued Creation	Development of course on integrated asphalt business in conjunction with the Department of Skill Development (road paving etc.) "Tipco Asphalt Open House" project for students to learn about the Group's businesses Participate in "Baan Rian Moradokmai" Homeschool education promotional activity that teaches real life-skills through stage-play performances	 Create a network, knowledge sharing and monitor demand changes Provide knowledge for students for future planning and enhance relationship Participate in national developments and job-creations 	 Students are provided with opportunities to work in line with their preference and skills, hence reducing their chances to switch jobs Increase opportunities upon education Promote alternative educations such as homeschool 	4 QUALITY EDUCATION
		Reduce Waste/ Reduce Cost	Save the World Reduce environmental impacts	Collect the community wastes at Li-Let, Surat Thani Garbage clean-up at 7A Pier, Chao Praya River Support community forests; Nong Pak Jai & Bang Kasob Develop road early-warning system for the Group's drivers through application. Establish training center for hazardous chemical driver (driving license category 4) for service excellence and safe delivery	 Delivery drivers have safety during delivery and reduce chances of accidents Clean 7A pier helps us to have good environment in front of Phrapradeang terminal. Reduce cost on training, promote driving skills upon dangerous terrain, and reduce spill-over asphalt products 	Reduce the chance of product contamination to the environment Promote environmental sustainability Educate local communities on waste management	12 REPRODUCTION AND PRODUCTION AND P
		Reduce road accidents	Safety for All Safe Road for All	 Repair of damaged road surfaces in accordance with safety standards while waiting for government budgets the "Patching Pothole" project Extend "Patching Pothole" project to partners for sustainability Educate students with traffic rules and road safety "Road Safety for Kids" 	 Promote asphalt products including proper product use while creating a good experience Further develop on product and technology Establish network/alliance upon road surface maintenance nationwide Create a mutual relationship with stakeholders 	 Safety and convenience (Better quality of life especially for safety matters) Promote local career development such as road surface repairing Encourage mutual collaboration within the community through participation in the activities while raising the local residences awareness and ownership upon road use and cares 	3 0000 SEALTH 11 DISTANDARY CITES AND STREET AND COMMUNICIPES
	To see	Reduce road accident death rate	Safety for All Maximize Accident Survival Rate	 Provide knowledge/ training on basic life-saving skills (CPR) and technique on removing objects that block respiratory system Support CPR facilitators upon CP Group's training project nationwide Promote construction/procurement of life-saving equipment for emergency rooms for local hospitals nearby the Group's plant locations 	 Prioritize on staff safety Promote volunteer public mindset for staff to provide assistance Create great relationship and confidence with the loca community 	Improve survival rate while waiting for medical assistance when a fatal accident occurs Promote CPR and suffocation treatment for the community, to increase safety	3 GROWN SEATTH THE AND COMMONTHEE THE SEASON OF THE SEASON
	\$	Creat Job / Extra Income	Co-Creation Innovation Knowledge Sharing	In collaboration with the Department of Skill Development, train the local residences and interested parties upon road surface repairs using asphalts including professional construction of speed-bumps	 Sharing of knowledge and proper use to the users directly Create great relationship among participating staffs 	Community is provided with alternative upon their career. They may create new careers which could serve as their additional sources of incomes or extra incomes.	5 GENDER 8 GENERALITY CONVENCE GROWTH

COMMUNITY SATISFACTION SURVEY RESULTS

OVERALL COMMUNITY RATION SURVEY RATION SURVE

Each year, Tipco Asphalt staff volunteer in corporate CSV/CSR activities, together with our customers (CRM activities), partners, local government and local communities. At the end of each activity, we asked participants to complete our CSV/CSR Activity Satisfaction Survey.

The surveys were conducted on our 6 signature CSV/CSR projects and the survey data provided us with an insight on local community perspective on our business performance including where we should focus our efforts to make improvements to meet changing community expectations.

We utilize IT application & program to collect, track data and analyze the activity.

COMMUNITY SATISFACTION SURVEY RATED ON 6 SIGNATURE CSV/CSR PROJECTS 1413-1 I Clause 6.8 and 7.4 I

Activity	Continuous Project	Satisfaction	n Rate & Con	nments
·*	PatchingPothole Started 2017 ~ 3 Years	92.6	ana A	Mr.Worrawat Sriyook: CSR Partnership Vice President Corporate Sustainability, Mitr Phol Group Patching Pothole project is one of the joint activities Mitr Phol group has with Tipco Asphalt. Mitr Phol can utilize information and techniques learnt from this activity to communities nearby Mitr Phol and local authorities.
	Road Safety for Kids Project Started 2019	97.2 %		Ms.Pornthip Chubua: Community Head Superintendent of Wat Bangkrasob School, Samutprakarn Tipco Asphalt Group has long conducted joint activities with the children every year. But since 2019, they combined teaching English and road safety knowledge together. This very useful knowledge in daily life while they created road safety awareness for the children who liked the activities very much.
The state of the s	CPR Training Started 2017 ~ 3 Years	95.7 %	a Go	Pol. Maj. Gen. Dr. Sophon Krisanarangsan: CPR Instructor Thai Resuscitation Council With my 2 years of helping social activities, I am very impressed with the strong determination of TIPCO Group. The project manager is dedicated and committed to disseminate knowledge and practice for helping communities on Basic life-saving. At present, the company is ready to disseminate knowledge with complete training equipment.
	SMART People Started 2018 ~ 2 Years	78.5 %		Mr. Nussin Timsin: Project Manager Sustainable Development Officer (SDO), Tipco Asphalt PCL (Surat Thani) This project was commenced since Q3-2019 as career training for asphalt workers to generate additional incomes. The program needs to be liaised with government agencies as well as coordinated among the company units. We need to provide knowledge to meet the needs of communities/societies through our capabilities.
	SMART Logistic Started 2018 ~ 2 Years	82.2 %		Mr. Pipat Dansongsrikun: Project Manager Senior section head, Tipco Asphalt PCL (Phrapradaeng, Samutprakarn) In line with the Group's corporate strategy on innovation, this project will be conducted in collaboration with academic institutions, focusing on students. There will be an innovation contest selecting topics that benefit both the organization and the community. For instance, our Phrapradeang terminal, we launch a "Smart Logistic Project" that could help with lower energy consumption while shortening production time.
	Bueng TaKhreng Started 2013 ~ 6 years	87.1 %		Mr.Viboon Tangkasemviboon: Community Head Chief Executive of the Bang Rakham new Subdistrict Municipality, Phitsanulok, For more than 5 years, the Bang Rakam Muangmai municipality has cooperated with the Tipco Asphalt Group to develop Bueng Takhreng in Phitsanulok province into the area for recreational activities and natural learning resources. We also launched the "Annual Mini Marathon event" to raise funds for the sustainable development of Bueng Takreng.



The more we give, the happier we feel.

We aim to demonstrate, with our actions, how we responsible for community/society with sustainability as a core value. Many people think that volunteer activities are boring and waste their time, thus our team try hard to give a better understanding and create CSV/CSR activities that give significant impact to communities as well as give the proud and pride with happiness for all volunteers.

Volunteering brings happiness and fulfillment to your life





Punsiri Suttienkul Branding and CSR Director

The UN Sustainable Development Goals



SDG 3: Good Health and Well-Being

Our CSV/CSR Initiatives on health & safety like; CPR Training, Patching Pothole, Blood Donation and Sport Activities contribute to the goal.



SDG 4: Quality Education

Our CSV/CSR Initiatives on career training for communities and employee training / development activities contribute to this goal.



SDG 9: Industry, Innovation and Infrastructure

Our CSV/CSR Initiatives for open, closed and collaboration innovation activities which company has strong ambition to promote innovation for employees and communities/societies.



SDG 11: Sustainability Cities and Communities

Our CSV/CSR Initiatives like Safety Road for Kids, Patching Pothole and Safety Truck Driving course contribute to the goal.



SDG 13: Climate action

Our CSV/CSR Initiatives on Bung Ta-Kreng – the Sustainable integrated tourism project, our change behavior of plastic consumption in daily office life contribute to the goal.



SDG 17: Partnerships for the goals

Our CSV/CSR Initiatives has been supporting / expanding from CSR business partners to make our 6 icon projects sustainable which contribute to the goal.

VALUE FOR THE FUTURE









the **long-term development on people**; internal & external stakeholders for **embedding sustainability into organizational practices** and decisions, engaging, collaborating and advocating for transformational change. Align organizational purpose, strategy and business models with system-level change.

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HUMAN CAPITAL MANAGEMENT ORGANIZATION

"if you take care of your employees, they will take care of your customers". - Richard Branson -

Management Approach

Employee Centric Mindset for Employee Retention

capital management gears all employee to accommodate such centric approach. This is based on a notion that there is a relationship between employee attitudes and customer satisfaction, which is related to sales and profitability.

and work-related activities

We aim to work for an employee-centric concept to make employees enjoy working in the company and be proud of the work they do. Furthermore, we expect they will proud to tell others where they work because their company culture is employee centric. Our plan is also to make employees enjoy a greater work-life balance and

talented job-seekers and experience higher employee retention.











As our business model shifts toward customer-centric, human

Therefore, employees can strongly contribute to an organization's success by adapting the customer-centric concept upon their works

Tipco Asphalt Group has established its human capital management system with a focus on talent developments. The objective is to grow talented staff to become future leaders with international mindset and highly-mobile to work across different cultures and locations.

create working environment that support their creativity ideas.

Finally, we move towards employee-centric culture appeal to

Recruitment

Employee-centric recruitment

Hiring the right people in the first place is essential to maintaining a base of satisfied | We establish tailored learning and employees. Selecting potential candidates development programs for talents by include a good match with corporate core designing coursework which includes values. Our talents at entry level are those project assignments. This is on top of management trainees, and at mid-careers standard learning and development are those new in 'critical positions" identified | program, which facilitate employee from a succession plan.

Making employee-centric selection decisions can result in increased motivation, lower turnover, and the creation of a rewarding culture for both the new hire and their co-workers.

Training

Employee-centric learning and development

development in line with corporate direction. This addresses specific competencies' gaps, in order to create a more positive experience

Performance Evaluation

Employee-centric performance evaluation

and supports his/her subordinate.

In each step, the subordinate is also allowed appraisal. This starts from self-rating, before discussion with the immediate supervisor, and a consent from upper-level supervisor

Compensation

Employee-centric compensation

Our compensation is based on performance Our performance management system of individual, including contribution involves employee engagement across all to the department and organizational steps; i.e., since planning, monitoring and achievement. As the focus group - the appraising. Along each step, the supervisor | talent employees, is considered the Group | shall provide clear expectation, feedbacks has include special consideration to strengths of our staff. effort, potential and achievement of special assignment and roles given.

to express own opinion, in particular the Acknowledging performance and desired work behaviors in employees are the keys. It inspires them to continually strive for excellence while promoting positivity in organizational culture.

Career Development

Employee-centric succession planning | Employee-centric Retention

Our succession planning takes into account needs from both organization and supervisors, and in critical positions employees. We would like to create a external coach, to take care of their needs. balance of career and personal growth, in both technical expertise and psychological

This is why each successor is supported with individual development plan, in order to understand an employee's readiness of success in future positions and what they can do to develop into those future roles.

Retention

To retain our talent employees, we assign

Nonetheless, the supervisor is a key person to regularly communicate with the talent employees of their career growth and

Apart from direct monitoring with the talent employees, we also use our exit interview information to verify specific condition that will help us on the retention.

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2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 355 |

VALUE FOR THE FUTURE: WHAT DOES IT MEAN TO ORGANIZATION? | 401-1 | 402-1 | 404-1 | Clause 6.4.3, 6.4.4 and 6.4.7 |

Management Approach

TIPCO Group places top priority on retaining talented employees. To accommodate our business expansion across different countries, it is vital to promote international mindsets to ensure our staff can comfortably work in cross-cultural environments while still achieving mutual alignment.

Talented employees include the management trainees and high potential employees. They are engaged to individual development program (IDP) and specially designed development topics on top of their current positions' requirements.

We apply We apply a simple 70/20/10 concept to develop talented employee; i.e., 70% self-learning through job assignments, 20% through coaching and 10% through classroom trainings. We would like to facilitate them to make the most out of 70% self learnings.

2019 Performance

- Maintain low turnover Rate at 9.66% against market / industry
- Higher Training Hours in functional & managerial training: Average 30.63 hours/person/year above target of 24 hours/person/year. A total record for all category training is 50.7

Value Our Employees

With a growing number of retired aging workforce, we need on average 2 years to prepare new replacement. This is a reason our top management emphasizes on growing people fast to promote the talents to become future leaders.

We aim to groom our staff with a growth mindset, motivate them to constantly improve skills and learn new knowledge to cope with rapidly changing business environments.

e Short-term Strategic Goals

2020 Goals

- Attract talented people and establish a happy and friendly workplace.
- Grow SMART people

Mid-term Strategic Goals

2025 Goals

 Create an ecosystem of Well-being at Work & Work-Life Balance Integration

Long-term Strategic Goals

2030 and beyond Goals

 Employee-Centric for the "value for the future" to accelerate business growth sustainably and constantly

HCM TAKES THE LEAD FOR DRIVING TO TIPCO ASPHALT GROUP TOWARD THE FUTURE

The future of **ENTERPRISE**

The future of **WORKPLACE**

The future of SMART WORK



Drive innovation & agility through workforce development

Our Innovation Award project was launched in 2019-2020. Activity shift from projects to a booth camp as development program for nurturing innovation.



Curate an inclusive workforce with nontraditional talents

We are alert of new, nontraditional talents that our people would need to acquire in order to cope with rapid changes in society and technology.



Advance the **workplace** to enable workforce collaboration

We renovated the Head Office with new physical space exclusive designated for meetings and group discussions. In addition, with introduction of cloud-based work systems such as Microsoft Office 365 or other applications, we are now able to collaborate simultaneously with other units across different locations.



Expand the enterprise with a partnership ecosystem

Our innovation project has been created and conducted with supports from external partners such as the Mitr Phol Group, the Thailand Productivity Institute, and Naresuan University.



Orchestrate the workforce experience to invigorate teaming and productivity

Our staff who participated in innovation projects have shared their learnings from different locations since 2019-2020. The booth camp learning in 2020 is aim to foster cross-functional collaboration.



Leap to a fit-for-purpose HCM Operating Model to suit the enterprise

Despite the current decentralized operating model, we begin to implement a centralized model for standardization across the whole Group. This is to ensure mutual understanding and internal fairness.



Sense the community & shift toward becoming a social enterprise

We contribute to the society and communities through public road safety initiatives. For instance, Patching potholes: a collaboration between our CSR partner, local communities and local authorities.



Forecast future capabilities and enable contentious learning

We understand a nature of our convention asphalt industry and thrive to explore new opportunities that expose us to new learning and challenges.



Re-imagine the work across the enterprise & in HCM with digitalization & automation enterprise

Our systems and services in human capital management are geared towards employee experience through online infrastructure platform.

Source: Deloitte analysis



promoting ecosystem of Well-being at Work & Work-Life Balance











Materiality Issue

Report Topic

Impact & Risk

Social Issue

SDGs

Policy

Stakeholder

Objective

Responsible

Strategy

Execution

GRI Standards

WELL-BEING AT WORK & WORK-LIFE BALANCE

Future Value 2030	2025 Target	2018 Performance	2019 Target (interim)	FY 2019 Performance
Enroll Employee Centric Across the Group's	"EMPLOYEE CENTRIC" Improvement on the selected employee effectiveness drivers/ topics	Employee Effectiveness survey Result: Identifying top and bottom three drivers for further action Employee Engagement 68% Employee Enablement 69%	Designing action plans to fill gaps in the bottom three drivers: 1. Pay & Benefits: Propose remuneration policy to the Nomination and Remuneration Board 2. Development Opportunities:	Didn't do the employee engagement survey in 2019 The Next Employee Effectiveness survey will be conducted in 2021
Apply to all subsidiaries within Tipco Asphalt Group	Promote collaboration and communication to support standardization of human capital management practices across the Group		Prepare career management framework in the Group 3. Work Structure and Process: Prepare to do focus group/mini survey about the new enterprise resource planning program	Three action plans are implemented as set: Remuneration policy Job Competency Profile Organization Redesign
3 GOOD HEALTH 5 WARRY PARKETS AND WELL-BEING		 Initiatives Implemented Paid leave for the purpose of marriage Paid leave for the purpose of organizing funeral for family member Paid parental leave for male Health Check-up program customized by age (not by job level) Interest free emergency loan Low interest loan for employee 	 Flexi working hour in Head Office New Workplace design for better physical environment: ✓ Meeting rooms' floor ✓ Staff canteen and free coffee corner by automatic coffee machine ✓ Collaboration working area 	○○● Initiatives are implemented as planned
AND WELL-BEING STORME INC.		Employee turnover rate 10%	Employee turnover rate < 10%	○○ ■ Employee turnover rate 9.66%
		Employee return to work after parental leave 100%	Employee return to work after parental leave 100%	○ ○ ● Employee return to work after parental leave 100%

Design the programs for lift-up employee satisfaction, build up staff to be person who are happy and healthy

Action plans to improve work environment according to the selected employee effectiveness drivers/topics

#15) Human Management and Retaining Employees

ISO Standards

#16) Good Relations Between

Sustainable pool of manpower, happy work place

Well-being at Work & Work-Life Balance

SDG 5, SDG 8, SDG 9, SDG 10, and SDG 17

Responsibility to Employees

Thai Labour Standard Policy

in both body and mind.

Human Resource Management

GRI 401, GRI 402, GRI 405,

GRI 407

Employees and Supervisors

Internal: All Employees & Management, Board of Directors

External: Authorities; Department of Labour etc.

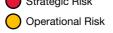
To develop and implement the Well-Being initiatives





Impacts:



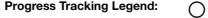


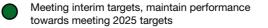


2) Compensation, Welfare and Employee

Satisfaction

ISO 26000: clause 6.4.3, 6.4.4, 6.4.5







Fall short of interim target for three quarters; review current practices



Missing interim target for more than one consecutive year; review and revise targets (if necessary)

HAPPY EMPLOYEES: THE CORE OF A SUCCESSFUL BUSINESS | 402-1 | 407-1 | Clause 6.4.5 |



winning hearts & minds of employees through living happy workplace in order to have better business success.

'EMPLOYEE CENTRIC'

Management Approach

Our vision in terms of human capital management is to see our people advance in their professions and career as well as be contented in personal life. Along with our business expansion in the region, we want to business in the Asia-pacific region. We want to create a work environment that brings mutual understanding, collaboration, and joy.

Our first task of mutual understanding started since 2018 with an aim to standardize our human capital management main systems across countries in our group. This includes job grade structure, employee data, and performance management, called the One-Group-One-System project. The alignment of basic systems paves ways to a mutual understanding as the Group would set direction and apply management and development tools for our people.

Starting in Thailand in 2018, we implemented a new software program for HCM systems in Thailand, at our head office and all plants. We extend the same platform to Malaysia, Indonesia, and Cambodia in 2019. Our offices in China and Laos are scheduled to implement a similar software program in 2020, while those in Vietnam, which is using other different software, shall find a way to integrate. Since we are able to operate with similar database structure, every country office shall be easily understanding to collaborate in our Group-wide programs.

One of the target group-wide program that we aim to develop in 2020 is the training module, in which employees can include their career and development aspiration on the database. This input is valuable information that we can reflect on our development opportunities based on employees' need and desire.





an here for Thai bour standard

Happy Employee

leads for

Good Productivity

HAPPY
EMPLOYEE
DELIVERS
GREAT
SERVICES

Employee Engagement | 402-1 | 407-1 | Clause 6.4.5 |

Our success depends on our people performing at their best: In order to achieve this, they need to be motivated, connected, and valued. To ensure that our employees are fully engaged with their works, we create a culture that emphasizes personal responsibility, diversity, and innovation.

Our latest biannual employee engagement survey was conducted in late 2017/to early 2018. We achieved a remarkable participation rate (92 percent) with overall engagement scores 68 percent, a slight below our target at 75%. Nevertheless, such a result was well in line with the same industry average of 68% (Our 2015 scores were 71%).

Our survey, commissioned to Korn Ferry Hay Group, aimed to capture information in two groups of drivers to effectiveness: Employee Engagement and Employee Enablement. The result on Employee Enablement stood at 70%, above the same industry average at 69%. Deeper analysis indicated that significant changes to our Enterprise Resources Planning system caused some discomfort to our employees who were the main system users, hence explaining such low survey scores.

We highlighted 3 high impact issues from the 2017/2018 survey with improvement plans: Pay & Benefits and Development Opportunities, and Work Structure and Process.

Our remuneration policy has been set to a specific Reward Positioning, a clear benchmark target industries and percentile range. We are now having a pay structure that is adjusted to be more competitive with the relevant market.

Completion of job competency profile has established a development model for career advancement.

Our next survey, which shall be conducted in 2021, will capture employees' opinions in these selected issues, together with some other issues such as the Work Structure & Process after the ERP implementation has been settled in place.

We expect to apply an internal survey tool, that is more agile to conduct than the biannual survey of an external consultant, and is designed to be more specific to our Group's situational needs at a time.

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 362 |

CREATING WORKPLACE OF THE FUTURE: HAPPY WORKPLACE FOR WORK-LIFESTYLE BALANCE



creating happy workplace environment

From Employee Retention

Towards Forward To Employee Centricity

In order to accomplish our customer centric business approach, Tipco Asphalt Group realizes that we also need to focus on our human capital management and development. Highly engaged and proud employees would deliver best results, which ultimately lead to maximizing customers' satisfaction.

Despite our constantly growing business expansions across Asia Pacific region, we have encountered several key challenges such as different multi-cultural environments and language barriers. We need to ensure Human Capital Management information must be of same standard across all subsidiaries. Our One-Group-One-System can make sure that our performance management, and people development across countries are comparable and providing fair access to all eligibility. By 2020, we aim to launch job rotation program for qualified staff at the Head Office in Thailand and international subsidiaries, with similar job criteria that are comparable and exchangeable.

We need to attract and retain new generations of employees while we encourage our experienced employees to learn new knowledge and skills. We constantly assess and review the needs of our employees.

Focusing on each staff's needs, HCM training and development modules will be implemented to accommodate such needs while program designs will be set to ensure good match to job competency profile.

As for competitive compensation and welfare package, prior benchmark on revenue size was replaced with specific relevant sector approach. In early 2019 market study, we found compensation gap in the middle staff level which we plan to bridge such gap through salary structure increase toward mid-point by January 2020. This reflects all performers' salary increase calculation according to the performance-based rewarding concept.



What is Our Winning Aspiration?

"Grooming people fast – to promote talents to be future leaders"

Our Situation about talents:

- Due to our establishments across
 Asia-Pacific, our staff should
 possess "international mindset"
 in order to work and collaborate
 effectively.
- A number of retiring employees are working in key functions.
 On average, it takes at least 2 years to prepare younger generation of employees for replacement.

New Generation Joining TIPCO Asphalt The latest in Dec. 2019, Khun Pairuch Tangusolertnapa works at Finance & Accounting and eager to learn everday!

Serving People in Changes of Communication Technology

In 2018, HCM introduced new online, cloud-based software program system. The launch was conducted at Thailand's Head office as pilot and further extended to plants and truck fleet drivers.

This new technology allows our staff to update and check their information with great convenience.

The application will be extended to mobile platform in 2020 while our employees can check their payroll, file a leave request, or request time entry from anywhere.

20 1 9 PERCENTAGE OF EMPLOYEE by Age Range by Year of Service

> 50 Years	13.62%	27.76%	10 Years Up
40-50 Years	30.35%		
		25.83%	5-10 Years
30-40 Years	36.80%		
		15.53%	3-5 Years
		9.22%	1-3 Years
< 30Years	19.24%		
		4%	4-12 Months
			0-4 Months

Avg. 8.26 Service Years



Staff with Longest Service Year

Miss Auchcha Ruttrakulthip is one of our earliest employees and she has worked with the Group for over 50 years.

She currently serves as the Corporate Finance Director and still enjoys working everyday!

Experience Sharing to younger generation:

Our internal trainers are transferring Technical Asphalt Knowledge in three modules in 2019.

We would like to ensure that our employees are well-versed about our asphalt products within their area of responsibility.



Asphalt Refinery

Application & Trouble shooting

Products



Other three modules scheduled to be held in 2020 – 2021 include: Raw Materials, Lab Testing, Production & Manufacturing



We would like to see our staff agile in today's rapidly changing business environment. In order to successfully adopt oneself to accommodate such rapid changes, he/she needs a strong emotional quotient (EQ), appetite for learning new knowledge and techniques for improvement, and positive mindset toward happiness and success.



Udomporn Punpatch Director - Human Capital Management

The UN Sustainable Development Goals



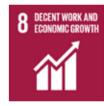
SDG 3: Good Health and Well-Being

Our employees' health are taken care of through health insurance and group-based life insurance policies. We also provide annual medical checkup program and cater to requests suggested by committees of employee representatives.



SDG 5: Gender Equality

We respect and value employees with no discrimination on genders. Every process of human capital management and development is based on merit.



SDG 8: Decent Work and Economic Growth

Our Group operates with an aim for full-time and productive employment. We constantly provide and encourage our staff to learn new technologies. Our compensation package structure is designed to be competitive and in line with the market.





growing **SMART People**









GROWING SMART PEOPLE

_		2018 Performance	2019 Target (interim)	FY 2019 Performance
by developing and offering an array of innovative and diverse programs in support of	mployee Promotion	Employee Promotion Result : 2.83%	Employee promotion 3.0%	○○ • Employee Promotion Result : 3.1%
	ternal Promotion: promoting ithin the Organization	High potential staff promotion to Management Level Result: 25%	High potential staff promotion to management level 25%	OOD High potential staff promotion to Management Level Result: 27%
Tal Fo	aining hours per employee arget > 24 hours or Functional and Managerial aining only	Training hours per employee Result : 23.6 hours	Training hours per employee 24 hours/ person/year	Training hours per employee Result: 30.63 hours/person/year (Functional and Managerial Training only)
	uccession Planning arget 100 %	Succession Planning Result 80.0%	Succession Planning 100%	OOO Succession Planning Result 91.3%
	uild-Up pool of talents in the ganization	Retention rate of High potential staff Result: 92%	Retention rate of High potential staff Result: 100%	Retention rate of High potential staff Result: 73%

Progress Tracking Legend:

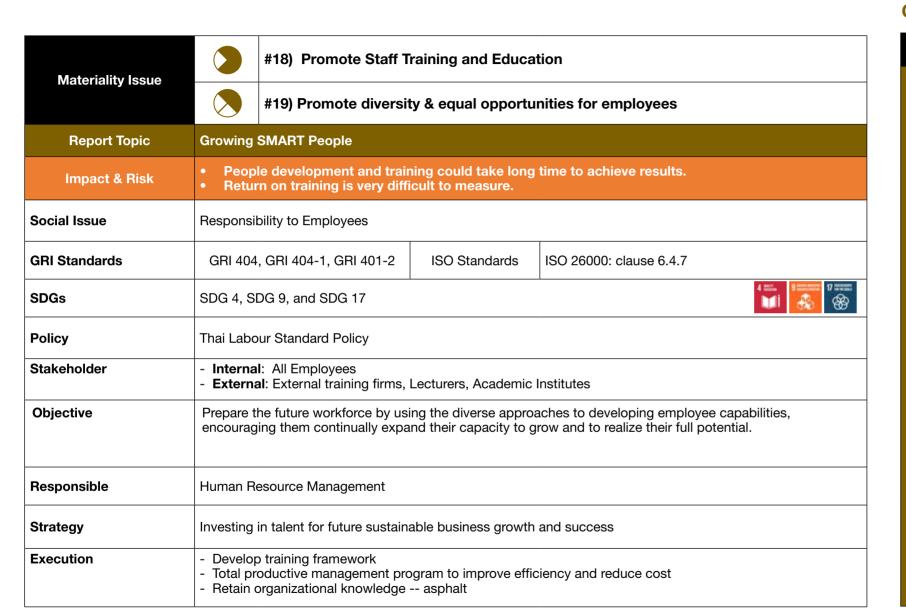




Fall short of interim target for three quarters; review current practices



Missing interim target for more than one consecutive year; review and revise targets (if necessary)

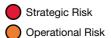


Impacts:















2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 370 |

GROWING SMART PEOPLE | 404-1 | Clause 6.4.7 |



driving TIPCO ASPHALT 4.0 through the promotion and development of employees

Management Approach

Our learning and development strategy aims to provide solutions to business needs while helping Tipco Asphalt as a leading, innovative company. Core Values; T I P C O, are our basic foundation that build up growth mindset and skills for our people.

From management workshop in 2018*, four Business Drivers were identified as our Group's business objectives. They include:

- Penetrate and Grow Global Business
- Create Competitiveness through Business Alliances
- Enhance Organizational Talents
- Promote efficient and innovative culture

From these business drivers, we identified the "Success Profiles" or sets of competencies for our senior management. This part has also been set as objectives for succession planning in key management positions.

The competencies comprises of four elements; namely, knowledge, skill attributes, attributes and experience.

For standard people development, we cascaded business drivers into two categories of training; namely, Functional skill and Leadership, and named it the "Development Framework".

Functional skills category involved competencies each job function need while Leadership category comprises 5 topics; i.e., Core values; Basic skills of language and computer literacy; Thinking, Leading and Communication skills.

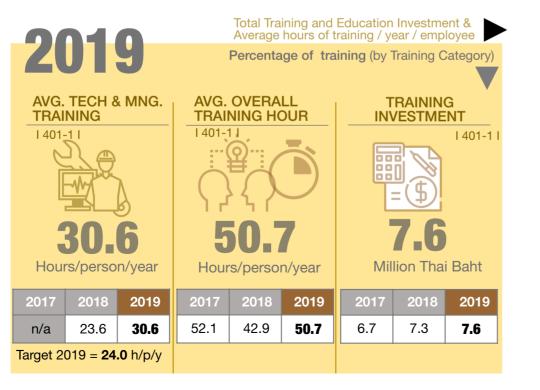
*The Management workshop in 2018 was conducted by Development Dimensions International (DDI) -- an international human resources and leadership development consultancy

Training and Education | 404-1 | Clause 6.4.7 |

We deliver best employee experience across all locations where we operate.

Our standard training encompasses a wide range of programs for our employees to build functional and leadership skills, as well as other compliance/regulatory and environment knowledge. In 2019, over 50 hours of training were conducted in Thailand, benefiting more than 500 employees.

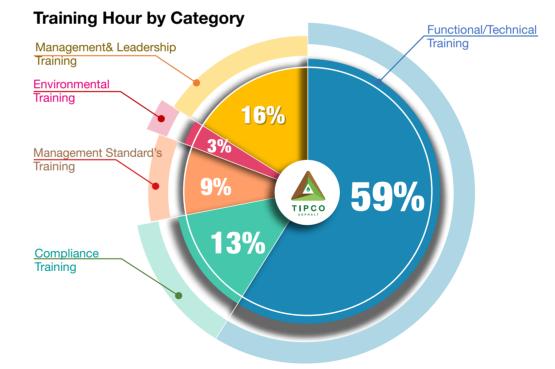
Key performance indicators focus on technical and management training. In 2019, average of 30.63 hours of training / year / employee was achieved, a remarkable result as compared to 24 hours of training / year / employee target.



Our measurement | 404-1 | 404-2 | Clause 6.4.7

Prior to 2017, a common 24 hours of training / year / employee target was set and greatly achieved over the years. But from internal review and analysis, we found that a majority of such training hours might not reflect an improvement of our people's skills and knowledge upon their works because a majority of training courses were set as compulsory by the management systems (ISO standards), or legally required by the authorities.

Since 2017, Our target setup was switched to functional/ technical training and management/leadership training as they should serve as more proper indicator of work skills and knowledge development.



Our training records are monitored and discussed in monthly management meeting, with focus on 5 training categories:

Functional / Technical Training

Management & Leadership Training

Compliance Training

Management Standard's Training

Environment Training

Functional / Technical Training -

Defined corresponding to employee's work responsibilities in his/her function. For instance, an International Taxation course for Finance and Accounting department, or an Interviewing Skill for recruitment officer.

Management & Leadership Training -

Defined according to job levels and roles. It ranges from individual contributor who takes full responsibility for individual task, to supervisor who supervise subordinates to perform, and to managers/directors who are driving the unit/department/business units performances.

Compliance Training -

Defined according to prevailing legal or regulatory requirements to ensure full compliance; for instance, training on workplace safety, Anti-Corruption, Code of Ethics for new employees.

Management Standard's Training -

Defined by management standard system requirements to the assigned roles such as internal system auditors

Environment Training -

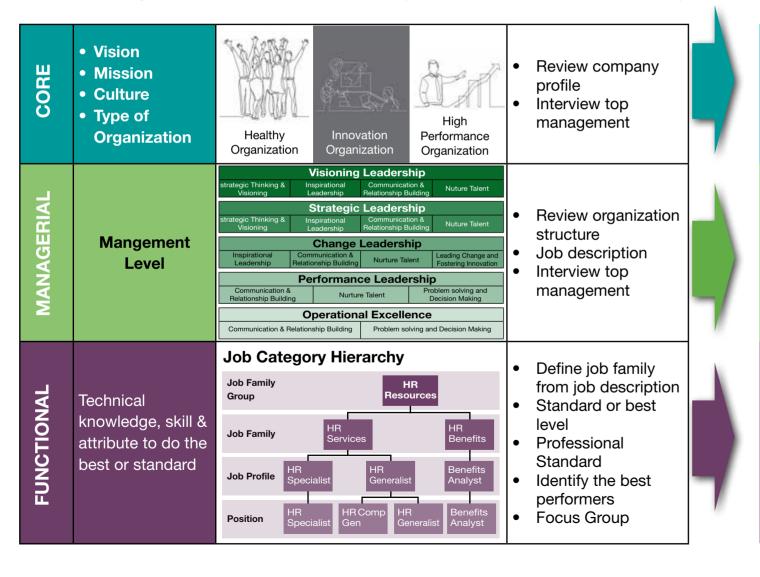
Defined by the Stock Exchange of Thailand's requirement for listed companies with training topics associated with environment preservation and protection

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Competency-based Human Capital Management and Development 1404-21 Clause 6.4.71

Tipco Asphalt Group has developed the Job Competency Profile as a guideline, from which supervisors and employees can together apply to communicate and formulate a development plan. This is to ensure that our people are properly groomed to convey the message of "Innovative Solutions Partner" and also given opportunities for their career advancement.

It comprises 3 categories: 1) Core Competency – derived from core values and applies to all staff across all job family and job levels; 2) Managerial Competency – based on job levels and managerial position; and 3) Functional Competency – superior qualities to excel in each job family.

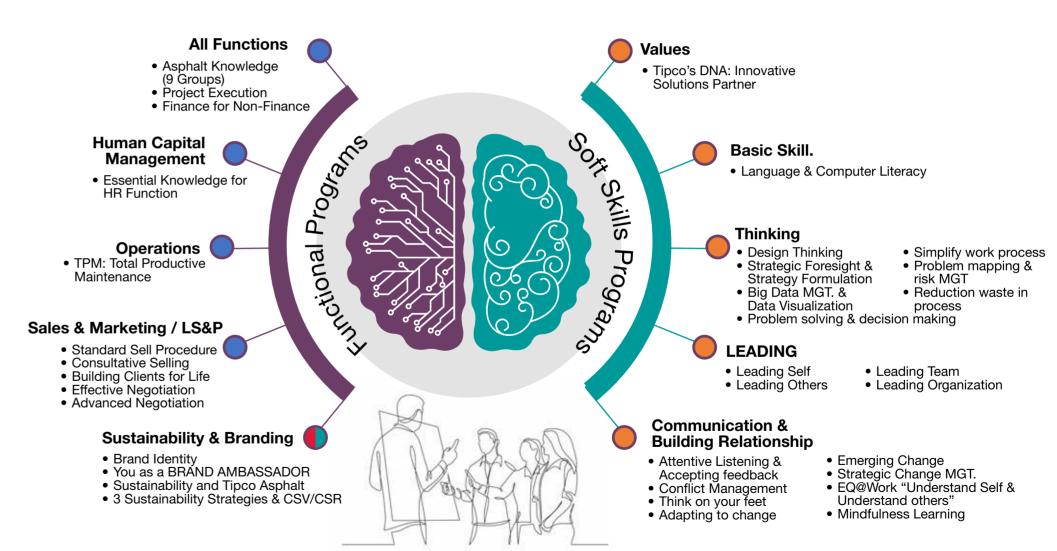


 Recruitment & Selection Culture Development Performance Appraisal Potential Assessment Training & Development Recruitment & Selection Performance Appraisal Potential Assessment Training Roadmap Individual Development Plan (IDP) Recruitment & Selection Performance Appraisal Training & Development On-the-Job Training Job Rotation Compensation & Benefit

Development Framework 1404-21 Clause 6.4.71

Our Development Framework is a set of curriculum focusing on Functional/Technical training and Managerial & Leadership training categories. New initiative in this field include the Total Productive Maintenance Program, which is aimed at the supervisory plus operation levels in plants.

In the management & leadership training, the program for talent group, or New Wave, is initiated with specially designed workshops -- focusing on skills for the Future Workforce with a purpose to build future global citizenship In addition to career growth.



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PROMOTE CONTINUOUS DEVELOPMENT OF SKILLS AND POTENTIALS

TPM: Total Productive Maintenance

TPM: Total Productive Maintenance has an objective to build the profitable business structure by improving man and machine management.

Man: We develop employees to support Factory Automation with following targets for each group:

Operator -- to have ability to do autonomous maintenance

Maintenance Engineer -- to have ability to do the maintenance (Mechatronics)

Production Engineer -- Have machines' advance knowledge; design Maintenance Preventive

Machine: We improve current machine systems to increase operational excellence

There are 3 Phases of the TPM Implementation Plan.

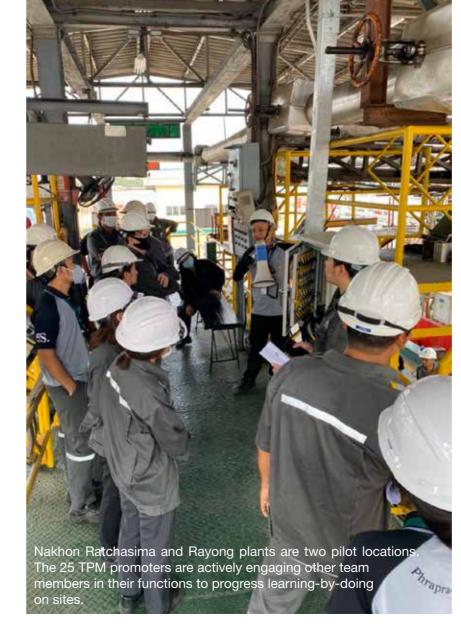
Phase 1: The measurement cycle, which assesses the present effectiveness of the equipment and provides a baseline for the measurement of future improvement;

Phase 2: The condition cycle, which establishes the present condition of the equipment and identifies the areas for improvement and future asset care. This cycle covers assessing the current situation of equipment through observations and audits.

Phase 3: The problem prevention cycle, which moves equipment effectiveness forward along the road to world-class performance. This is most important cycle of TPM implementation and covers establishing a root cause analysis system to continuously work on identification and prevention of all the causes resulting in loss of equipment efficiency.









TPM Project Scope

Process	Targets
Autonomous Maintenance	Prevent machine's deterioration Maintain machine's efficiency Improve machine's efficiency Cooperation between production and maintenance teams
Focused Improvement	Project-based cooperation across functions Maximum productivity Why-why Analysis P-M Analysis
Planned Maintenance	Improve maintenance technology and skills Specific skills, e.g., calibration check up

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PROMOTE CONTINUOUS DEVELOPMENT OF SKILLS AND POTENTIALS | 404-2 | Clause 6.4.7 |

New Wave Program

Our New Wave Program in 2019 started from nomination in the second half of 2018 as a development program for high potential employees. Self-nomination as well as nomination by department head were allowing eligibility from supervisor to middle management levels. With good performance records, and English proficiency (based on TOEIC scores), the New Wave Program members received intensive development program based on each individual development planning.

New Wave Program also aims to widen employees' exposure to various business functions in different perspective than each own line of command. Ultimately, successful graduates from the program have an opportunity to fast tract career development.







Strategic Simulation Workshop



Asphalt Knowledge for the Future

This project spans from 2018-2020 period with an aim to set up standard curriculum about our asphalt products. To begin, we analyze our target audience in order to design curriculum content properly. We identify our employees into nine groups, based on roles and responsibilities.

Outlines of curriculum for all groups were approved by the management since 2018, but development of curriculum and learning materials as well as instruction guide are scheduled into the three years span. The Human Capital Management Department is in charge of development process, in cooperation with other departments that are subject mater experts in each topics such as the Research and Development, the Operations, and the Technical Teams.

In 2019, we have launched training modules for Truck drivers, Plant's skilled workers, and R&D (with QC) employees.



Target Group / Start of training	2018	2019	2020
New employees			→
Truck drivers			\rightarrow
Plant's skilled workers			\rightarrow
Non-sales staff			\rightarrow
Production staff			\checkmark
Sales and Marketing staff			\rightarrow
Technical Support staff			\rightarrow
R&D (+QC) staff			—
Management and Executives			\checkmark

BENEFITS FOR THE EMPLOYEES AND THE ORGANIZATION

Asphalt Knowledge for the Future: Transferring organization knowledge

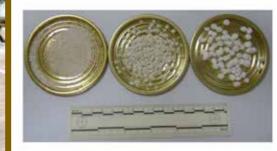
While the asphalt knowledge for the future is defined by audience group, the subject matter experts join to draft standard curriculum. This standard curriculum ensures that asphalt products knowledge in our Group be fully transferred from experienced staff to other generations. There are six modules defined under this curriculum:

No.	Module
1	Products
2	Application & Troubleshooting
3	Lab Testing
4	Raw Materials
5	Bitumen Refinery
6	Production & Manufacturing









Our aim is to create a sustainable learning system across our Group, that next generations or new employees can learn and build up more knowledge. Systems and tools we introduced such as the Total Productive Maintenance or Organizational Knowledge Management are not only collecting knowledge, but also creating skills of learning for staff



Priyapa WiwitsiriSenior Manager - HCM Business
Partner. HCM

"

Our staff need to be agile to survive in rapidly-changing business environment. We must be able to design our parts in the future, that come with so many possibilities.

"



Orawee Junbang
Senior Manager - HCM Business
Partner, HCM

The UN Sustainable Development Goals



SDG 4: Quality education

We provide continuous skill training according to requirements corresponding to roles and responsibilities. Also included are additional skills for productivity improvement and language skills.

Throughout the report, we used "We strive for..." because of achieving the corporate goal you couldn't do it alone, you need the entire organization; every business unit, every employee to work in the same direction and have

TIPCO ASPHALT



delivering innovative solutions for sustainable living of all societies.

with sustainability fully integrated in our Mission and Vision, we, as one big family of 2,000 Tipco Asphalt Group employees, are working together to ensure our home achieve long-term sustainability with great cares upon social and environment aspects.





Development towards sustainable organization requires contributions from everyone.

I will lead and provide all supports needed to ensure we all achieve the sustainable targets.



All staff dedicate
themselves to
sustainable
development together

J

We choose right and safe journey for organizational development towards sustainability

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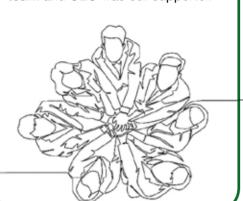
Sustainability Report 2019/20

First submitted in 2018, we started from few people and knowledge was in a very small group of employees.





2019/2020: We had few more committed employees joined the team and CEO was our supporter.



COVID 2019 period: Our team grew faster than the virus and all of them gave the data, supported each others and understood what we were doing.



-But We did it!-

We learned and completed report from weekly meeting. We cared, shared & worked together understandingly.



2019/2020 Edition: We worked as huge family and sustainable development has been embedded in our hearts & souls. Finally we did it and we spread the SD/CSV knowledge & experiences



We expected we give readers a happy journey through our sustainability report, hope for better understand and join us for our CSR/CSV activities in 2020 to make a better world.



the Sustainability Report 2019/2020

Our Challenges:

- Make the whole group have the understanding of the group's sustainability direction and put the individual support initiatives in their performance management. We need to embed sustainability into our corporate culture.
- Finding a balance between local priorities and generating benefits on a Group level.
- Meeting the needs and expectations of all three partnering organizations Local Authorities, Local Communities and Tipco Asphalt.

2019/2020 EDITION

Thank your for your contributions to this sustainability report: Pol. Maj. Gen. Dr.Sophon Krisanarangsan-Advisor of ThaiCPR, Anantachai Yoonprathom- SBDi, Supakorn Ekachaiphiboon – SET, Worrawat Sriyook-MITR PHOL Group, Pipat Apiraktanakorn- KIDKID, Kamol Borrisuttanakul -TPBI and Patai Porapakham

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- All executives and individuals who kindly provide testimonials and information contents for the report,
- Our CSV/CSR Project Managers and Sustainable Development officers at all TIPCO Asphalt plants who consistently support our activities throughout the year,
- All plant Managers, Human Capital Management & Sustainable Development, Procurement, Corporate Governance, Risk Management and other sales teams,
- And more importantly, our sincere appreciations toward all TIPCO Asphalt staff who provide strong work dedications for the Group and have their photos published in this report.
- Thank you to "One Line Man" graphic in the Shutterstock that inspired us from one line connecting each others and make an incredible story telling.

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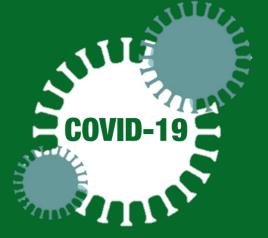
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CRISIS

OPPORTUNITY



SUSTAINABILITY REPORT 2019

How we can sustain our business in 2020?

Follow us for Sustainability Report 2020

GLOSSARY:

ABBREVIATION IN SUSTAINABILITY REPORT 2019

ABS	PT Asphalt Bangun Sarana	BLS	Basic Life Saver
ABT	Asia Bitumen Trading Pte. Ltd.	BoD	Board of Director
AASHTO	American Association of State Highway and	ВРО	Business Process Owner
AASITIO	Transportation Officials	BU	Business Unit
AC	Asphalt Cement	CAC	Collective Action Coalition Against Corruption
AC	Audit Committee	СВ	Cutback
ADCO	Asphalt Distribution Co.,Ltd.	CCTV	Closed Circuit Television System
ADR	European Agreement concerning	CEO	Chief Executive Officer
	International	CG	Corporate Governance Committee
AE	Asphalt Emulsion	CGR	Corporate Governance Report
AED	Automated External Defibrillator	CoE	Code of Ethic
AGM	Annual General Meeting	Corp.	Corporation
AMS	Application Manage Services project	CPR	Cardiopulmonary Resuscitation
Ave.	Average	CRBP	Children's Rights and Business Principles
ВА	Borneo Asphalt Sdn Bhd	CRC	Corruption Risk & Control
BCM	Business Continuity Management	CRM	Customer Relationship Management

ABBREVIATION IN SUSTAINABILITY REPORT 2019

CRS-2	Cationic Asphalt Emulsion Rapid Setting	
CSR	Corporate Social Responsibility	
CSS-1	Cationic Asphalt Emulsion Slow Setting	
CSS-1h	Cationic Asphalt Emulsion Slow Setting	
CST	the Colas Campus for Science and Techniques	
CSV	Creating Shared Value	
DCEO	Deputy Chief Executive Officer	
DMK	Domestic Sale and Marketing	
DRR	Department of Rural Roads	
DWT	Dead Weight Tonnage	
EAP	Emulsified Asphalt Prime	
EC	Executive Committee	
EQ	Emotional Quotient	
ER	Emergency Room	
ERM	Enterprise Risk Management	

RP	Enterprise Resource Planning
SG	Environment, Society and Governance
R	Frequency Rate
ìJ	Gigajoule
HG	Green House Gas
iPS	Global Positioning System
iRI	Global Reporting Initiative
ICM	Human Capital Management
ICP	Health Care Provider
Ю	Head Office
IR	Human Resource
3	International Business Department
OP .	Individual Development Program
_C	Interlaboratory Comparison
MO	International Maritime Organization
MS	Integrated Management System

ABBREVIATION IN SUSTAINABILITY REPORT 2019

INES	French National Solar Energy Institute
IT	Information Technology
JP	Joint Primer
JS	Joint Sealer
JSA	Job Safety Analysis
KBC	Kamaman Bitumen Company SDN.BHD
KPI	Key Performance Indicator
KYT	Kiken Yoshi Training
LS&P	Logistics, Supplies and Procurement
LSFO	Low Sulfur Fuel Oil
LTI	Lost Time Injury
LTIFR	Lost Time Injury Frequency Rate
LTISR	Lost Time Injury Severity Rate
MASCI	Management System Certification Institute
MC-70	Cutback Asphalt

MOU	Memorandum of Understanding
ЛΤ	Million Tons
N&R	Nomination and Remuneration
NGO	Non Governmental Organizations
NPD	New Product & Service Development and Design Committee
DHS	Occupational Health and Safety
OKM	Organization Knowledge Management
Org.	Organization
OTM	Oracle Transportation Management module
PMA	Polymer Modified Asphalt
PPE	Personal Protective Equipment
PT	Proficiency Testing
QC	Quality Control
QMS	Quality Management System
QTC	QTC Energy Public Company Limited

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ABBREVIATION IN SUSTAINABILITY REPORT 2019

R&D	Research and Development
RC	Risk Champion
RMC	Risk Management Committee
RO	Risk Officer
RTS	Road Traffic Safety Management System
SAFR	Severe Accident Frequency Rate
SBDI	Sustainable Business Development Institute
SBR	Sequencing Batch Reactor
SD	Sustainability Development
SDGs	Sustainable Development Goals
SEC	the Securities and Exchange Commission
SSHE	Safety, Security, Health and Environment
TAC	Tipco Asphalt Cambodia Co.,LTD.
TLS	Thai Labor Standard System
TOSH	Thailand Institute of Occupational Safety and Health (Public Organization)

TPM	Total Productive Management
TRC	Thai Resuscitation Council
ULA	Ultra Low Ammonia Asphalt
UNICEF	United Nations Children's Fund
UI/UX	User Interface/User Experience

APPENDICES:

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TABLE 1:

INNOVATION LEADER

		Disclosure			Perfo	rmance		GRI	ISO		Page No.	
Index Co	de	Description	Unit	2016	2017	2018	2019	Standards	26000	SDGs	or URL	Note (s)
					INNOVATION L	EADER FOR PRO	SPERITY ECON	ОМІС				
						INNOVATION						
Innovation Management	G7.1C	Innovation management: policy and practices	have	•	•	•	•	-	6.6.5, 6.5.2, 6.8.6, 6.6.7	SDG 9	130	
	G7.2C	Innovation management: initiatives and benefits	have	•	•	•	•	-	6.6.5, 6.5.2, 6.8.6, 6.6.7	SDG 9	128-129	
	G7.20	Explanation of eco-friendly innovations (including process, product/business model innovation)	have	•	•	•	•	-	6.6.5, 6.5.2, 6.8.6, 6.6.7	SDG 9	135	
	G7.3C	Innovation management: targets	have	•	•	•	•	-	6.6.5, 6.5.2, 6.8.6, 6.6.7	SDG 9	128-131	
	G7.30	Quantifiable benefits from innovation management (e.g., reduced cost from process innovation, sales from eco-friendly innovations)	have	•	•	•	•	-	6.6.5, 6.5.2, 6.8.6, 6.6.7	SDG 9	136-161	

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TABLE 1:

ECO-EFFICIENCY OPERATION

	Index Code	Disclosure			Perfor	mance		GRI	ISO		Page No.		
	Index Co	de	Description	Unit	2016	2017	2018	2019	Standards	26000	SDGs	or URL	Note (s)
					ECC	EFFICIENCY O	PERATIONS FO	R BETTER EN	VIRONMENT				
							EMISSION	S					
E	Linissions	E1.1C	Emissions: Policy and Practices	have		•	•	•	GRI 305	6.5.5	SDG 13	172	
	Management	E1.10	Reference to emissions management-related principles, standards or guidelines	have		•	•	•	GRI 305	6.5.5	SDG 13	172-175	
		E1.2C	Reduction of GHG emissions: initiatives	have		•	•	•	GRI 305	6.5.5	SDG 13	171-172	
		E1.3C	Reduction of GHG emissions: targets	have		•	•	•	GRI 305	6.5.5	SDG 13	171-172	
		E1.4C	Gross direct (Scope 1) GHG emissions and Gross energy indirect (Scope 2) GHG emissions	tCO2e	22,914	21,942	20,415	17,814	GRI 305-1 GRI 305-2	6.5.5	SDG 13	171-172	Revised data of 2016 - 2018 due to data collection improvement.
		E1.40	GHG emissions intensity ratio – gross direct (Scope 1) GHG emissions per production unit	tCO2e/ production unit	0.039	0.040	0.041	0.038	GRI 305-4	6.5.5	SDG 13	171-172	Revised data of 2016 - 2018 due to data collection improvement.
							ENERGY						
E	2 Energy	E2.1C	Energy: policy and practices	have	•	•	•	•	GRI 302	6.5.4	SDG 7	171-174	
	Management	E2.10	Reference to energy management related principles, standards or guidelines	have	•	•	•	•	GRI 302	6.5.4	SDG 7	171-174	
		E2.2C	Reduction of energy and/or fuel consumption: initiatives	have	•	•	•	•	GRI 302	6.5.4	SDG 7	171-174	
		E2.3C	Reduction of energy and/or fuel consumption: targets	have	•	•	•	•	GRI 302	6.5.4	SDG 7	171-174	
		E2.4C	Total energy and/or fuel consumption	Giga Joule GJ	284,321	270,880	251,387	210,975	GRI 302-1	6.5.4	SDG 7	171-174	Revised data of 2016 - 2018 due to data collection improvement.
		E2.40	Total energy and/or fuel consumption from renewable sources	K.Watt- Hour	n/a	n/a	n/a	n/a	GRI 302-1	6.5.4	SDG 7	171-174	B20 Fuel oil in hot oil boiler
		E2.40	Total energy and/or fuel comsumption from renewable sources (by type)	Giga Joule GJ				8,749		-	334.		
		E2.50	Energy intensity ratio: total energy consumption per production unit	GJ / pro' unit	0.489	0.497	0.509	0.452	GRI 302-3	6.5.4	SDG 7	171-174	Revised data of 2016 - 2018 due to data collection improvement.

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TABLE 1:

ECO-EFFICIENCY OPERATION

			Disclosure			Perfor	mance		GRI	ISO		Page No.	
	Index Cod	de	Description	Unit	2016	2017	2018	2019	Standards	26000	SDGs	or URL	Note (s)
					ECC	D-EFFICIENCY O	PERATIONS FO	OR BETTER EN	VIRONMENT				
							EMISSION	IS		ı			
E3	Water	E3.1C	Water: policy and practices	have	•	•	•	•	GRI 303	6.5.4	SDG 6	182-183	
	Management	E3.10	Reference to water management-related principles, standards or guidelines	have	•	•	•	•	GRI 303	6.5.4	SDG 6	182-183	
		E3.2C	Reduction of water consumption: initiatives	have	•	•	•	•	GRI 303	6.5.4	SDG 6	181-187	
		E3.3C	Reduction of water consumption: targets	have	•	•	•	•	GRI 303	6.5.4	SDG 6	181-187	
		E3.4C	Total water consumption	Mega Litre	107.71	89.02	51.58	54.92	GRI 303-5	6.5.4	SDG 6	181-187	
		E3.40	Total volume of treated and reused water	Mega Litre	9.71	9.68	8.18	4.25		6.5.4	SDG 6	181-183	Revised data of 2016 - 2018 due to data collection improvement.
		E3.50	Water intensity ratio: such as total water consumption per sales or production unit	Mega Litre / production unit				n/a		6.5.4	SDG 6		
						EFFLUE	NTS,WASTE an	d POLLUTION					
E4	Effluents,	E4.1C	Effluents, waste and pollution: policy and practices	have	•	•	•	•	GRI 306	6.5.3	SDG 12	182-183	
	Waste and Pollution Management	E4.10	Reference to waste and pollution management-related principles, standards or guidelines	have	•	•	•	•	GRI 306	6.5.3	SDG 12	182-183	
		E4.2C	Reduction of effluents, waste and pollution: initiatives	have	•	•	•	•	GRI 306	6.5.3	SDG 12	180-183	
		E4.3C	Reduction of effluents, waste and pollution: targets	have	•	•	•	•	GRI 306	6.5.3	SDG 12	180-183	
		E4.4C	Total volume of effluents, waste and pollution (by type), e.g., hazardous/non-hazardous waste and recyclable/ non-recyclabl waste	Ton	388	367	431	405	GRI 306-1	6.5.3	SDG 12	181-183	Revised data of 2016 - 2018 due to data collection improvement.
		E4.40	Total volume of reused effluents and waste	Ton	340	313	384	370	GRI 306-1	6.5.3	SDG 12	181-183	Revised data of 2016 - 2018 due to data collection improvement.

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TABLE 1:

SAFETY AWARENESS

		Disclosure			Perfor	mance		GRI	ISO		Page No.	
Index Co	de	Description	Unit	2016	2017	2018	2019	Standards	26000	SDGs	or URL	Note (s)
					SAFETY AW	VARENESS FOR	SAFETY SOCIE	ΤΥ				
					OCCUF	PATIONAL HEAL	TH & SAFETY					
Safety, occupational	S5.1C	Safety, occupational health and working environment: initiatives	have	•	•	•	•	GRI 403	6.4.6	SDG 3	194-195	
health & working	\$5.10	Occupational health and safety practices for suppliers	have	•	•	•	•	GRI 403	6.4.6	SDG 3	200-201	
	S5.2C	Safety, occupational health and working environment: targets	have	•	•	•	•	GRI 403	6.4.6	SDG 3	194-195	
	S5.3C	Type and rate of incidents of occupational diseases, work-ralated	Time	0	0	0	0	GRI 403-10	6.4.6	SDG 3	195-197	
		Type and rate of incidents of injury, related fatalities	Time	0	0	1	1	GRI 403-9	6.4.6	SDG 3	198	
	S5.3O	Lost time Injuries Frequency Rate (LTIFR) base 1,000,000 hrs worked	Cases	4.51	1.59	0.00	0.84	GRI 403-9	6.4.6	SDG 3	198	
	S5.3O	Lost time Injuries Severity Rate (LTISR) base 1,000,000 hrs worked	Day	92.49	20.73	0.00	1.69	GRI 403-9	6.4.6	SDG 3	198	

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TABLE 1:

GOOD CORPORATE GOVERNANCE

			Disclosure			Perfor	mance		GRI	ISO		Page No.	
	Index Cod	de	Description	Unit	2016	2017	2018	2019	Standards	26000	SDGs	or URL	Note (s)
					GOOD COI	RPORATE GOVE			SS FOUNDAT	ION			
						GOOD	CORPORATE G	OVERNANCE					
(Board Performance	G1.1C	Actual performance of board and committee in driving corporate sustainability	have	•	•	•	•	GRI 102-31	6.2	SDG 16	280-281	
(Board composition	G2.1C	Board composition: proportion of independent directors on board	%	47%	47%	47%	47%	GRI 102-18	6.2	-	280-281	
	and diversity	G2.2C	Board composition: proportion of non-executive directors on board	%	67%	67%	67%	67%	GRI 102-18	6.2	-	280-281	
		G2.2O	Proportion of non-executive directors with expertise in the company's core business	%	30%	30%	30%	30%	GRI 102-18	6.2	-	280-281	
		G2.3C	Board diversity of gender: proportion of women on board	person or %	7%	7%	7%	7%	GRI 102-18	6.2	-	280-281	
		G2.4C	Board diversity of expertise: board skill assessment	have	•	•	•	•	GRI 102-18	6.2	_	282-283	
(33 Board	G3.1C	Board assessment criteria	have	•	•	•	•	GRI 102-28	6.2	-	282-283	
	Assessment	G3.10	Board assessment results	Avg. Score from total of 4.00	3.89	3.91	3.86	3.86	GRI 102-28	6.2	-	282	
		G3.20	Board performance development	have	•	•	•	•	GRI 102-28	6.2	-	283	
(G4 Code of conduct	G4.1C	Code of conduct training and education	have	•	•	•	•	GRI 102-17	6.2	-	286-287	
	and compliance	G4.10	Code of conduct: due diligence	have	•	•	•	•	GRI 102-17	7.3.1		286-287	
						E	G RISK MANA	GEMENT					
(65 ESG Risk	G5.1C	ESG risk management: policy and practices	have	•	•	•	•	GRI 102-15	7.4.3	SDG 1-17	294	
	Management	G5.10	Reference to risk management related principles, standards or guidelines	have	•	•	•	•	GRI 102-15	7.4.3	SDG 1-17	294	COSO ERM
		G5.2C	Current and emerging ESG risk assessment: impact and likelihood	have	•	•	•	•	GRI 102-15	7.4.3	SDG 1-17	296-303	
		G5.3C	Frequency of testing of an emergency plan, a crisis management plan, or a business continuity plan	time	2	1	1	1	GRI 102-15	7.7.1 6.5.2 6.5.3 6.4.6	SDG 1-17	304	

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TABLE 1:

GOOD CORPORATE GOVERNANCE

			Disclosure			Perfor	mance		GRI	ISO		Page No.	
	Index Cod	de	Description	Unit	2016	2017	2018	2019	Standards	26000	SDGs	or URL	Note (s)
					GOOD COF	RPORATE GOVE			SS FOUNDAT	TION			
					ı	ı	SUPPLY CH	AIN					
G6	Supply Chain Management	G6.1C	Supply chain management (including ESG issues): policy and practices	have	•	•	•	•	GRI 308 GRI 414	6.6.6	SDG 12 SDG 16	306-317	
		G6.2C	Supply chain management: initiatives	have	•	•	•	•	GRI 308 GRI 414	6.6.6	SDG 12 SDG 16	308-309	
		G6.3C	Supply chain management: targets	have	•	•	•	•	GRI 308 GRI 414	6.6.6	SDG 12 SDG 16	308-309	
		G6.3O	Proportion of new suppliers that were screened using ESG criteria	%			0%	1%	GRI 308-1 GRI 414-1	6.6.6	SDG 12 SDG 16	312-313	
		G6.4C	A list of ESG criteria used to screen new suppliers	have	•	•	•	•	GRI 308 GRI414	6.6.6	SDG 12 SDG 16	312-313	
						HUMAI	N RIGHTS & LAE	OUR RIGHTS					
S1	Human rights and labor rights	\$1.1C	Human rights and labor rights, policy and practices, highlighting: - Employment - Compensation - Training and education - Safety, occupational health and working environment - Engagement	have	•	•	•	•	GRI 412	6.3.3	SDG 8	250-251	
		S1.10	Reference to labor rights-related principles, standards or guidelines	have	•	•	•	•	GRI 412	6.3.3	SDG 8	250-253	
		S1.20	Human rights and labor rights of company's labor: due diligence	have	•	•	•	•	GRI 412	6.3.3	SDG 8	252	
		S1.3O	Human rights and labor rights of suppliers' labor: due diligence	have	•	•	•	•	GRI 412	6.3.3	SDG 8	266-267	

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TABLE 1:

GOOD CORPORATE GOVERNANCE

	Index Code	Disclosure			Perform	nance		GRI	ISO		Page No.		
	Index Cod	de	Description	Unit	2016	2017	2018	2019	Standards	26000	SDGs	or URL	Note (s)
					GOOD COF	RPORATE GOVER			SS FOUNDAT	ION			
						RESPO	NSIBILITY TO	CUSTOMERS			I		
;	Customer Satisfaction	S7.1C	Customer satisfaction improvement: initiatives	have	•	•	•	•	GRI 102-43	6.7.6	-	218-219	
	Satisfaction	S7.1O	Channel to manage complaints about customer services	have	•	•	•	•	GRI 102-43	6.7.6	-	228-229	
		S7.2C	Customer satisfaction improvement: targets	have	•	•	•	•	GRI 102-43	6.7.6	-	222-227	
		\$7.3C	Customer satisfaction survey results - Domestic Customer - International Business Customer	%	84% 86% 82%	86% 87% 85%	85% 87% 82%	87% 86% 88%	GRI 102-43 GRI 102-44	6.7.6 6.7.6	-	222-227	
		\$7.30	Total number of incidents or complaints about customer service, with explanation of the management approach of incidents/ complaints	Cases in Domestic International	12 9	3 7	7 12	7 13	GRI 102-43 GRI 417-2 GRI 417-3	6.7.6 6.7.3		228-229	
;	Responsible marketing communications	S8.1C	Policy and practices of responsible marketing communications on product and service information	have	•	•	•	•	GRI 417	6.7.3	SDG 3	228-235	
,	S9 Protection of	S9.1C	Protection of customer privacy policy and practices	have	•	•	•	•	GRI 418	6.7.7	SDG 16	264-265	
	customer privacy	S9.1O	Reference to customer privacy related principles, standards or guidelines	have	•	•	•	•	GRI 418	6.7.7	SDG 16	264-265	
						COM	IMUNITY DEVE	LOPMENT					
:	S10 Human rights	S10.1C	Community development: policy and practices	have	•	•	•	•	GRI 413	6.8.2	SDG 8	334	
	and labor rights	S10.2C	Community development: initiatives	have	•	•	•	•	GRI 413	6.8.2	SDG 8	332-333	
		S10.2O	Investment in local communitydevelopment programs	hour	21,281	21,406	23,978	15,358	GRI 413	6.8.2	SDG 8		- in 2019 we started to screen the CSR projects that related to our
			- Cash contribution for CSR Projects	Total	15.2	15.3	22.9	11.90					business that we can use our expertise to develop project for the
			- Management Overheads	Mil.Bht			13.26	7.72					best for communities and continuing projects for sustainability.
			- In-kind giving: product, or service				4.90	0.93				342-343	- Also company joined the CSR projects with other companies
			- Employee cost during paid working hours				0.90	0.81					drove the expenses down - Just started to do CSR project survey in 2018
							3.88	2.44	-				- dust started to do corr project survey in 2010
			CSR Satisfaction Survey	%			87.2%	89.0%					
		S10.3C	Community development: targets	have	•	•	•	•	GRI 413	6.8.2	SDG 8	344-345	
		S10.3O	Outcome and impact from investment in local community development programs						GRI 413	6.8.2	SDG 8	344-345	
		S10.4O	Community engagement survey results	%	N/A	N/A	95%	97%	GRI 413	5.3	SDG 8	346-347	
		S10.5O	Total number of incidents or complaints concerning environmental impact or breaches of human rights in the community	case	1	0	1	0	GRI 413	7.6.3	SDG 8	335	

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TABLE 1:

VALUE FOR THE FUTURE

	Index Code	Disclosure			Perfor	mance		GRI	ISO		Page No.		
	Index Cod	de	Description	Unit	2016	2017	2018	2019	Standards	26000	SDGs	or URL	Note (s)
				VALUE FOR	R THE FUTURE	BY TRANSFOR	MING OUR PEC	PLE TO BE REA	ADY FOR THE	GLOBAL CHA	ANGES		
							EMPLOYME	NT					
S2	Employment	S2.1C	Total number of full-time and part-time employees (by gender, age group and position)	person	750	732	712	672	GRI 401 GRI 405-1	6.4.3	SDG 5 SDG10	256-259	- As of Board of Directors Meeting Report
		\$2.10	Total number of employees with disabilities, indigenous peoples, or ethnic minorities	person	1	1	1	1	GRI 401 GRI 405-1	6.4.3	SDG 5 SDG10	259	- Currently, there are 1 disadvantaged employee working in the domestic marketing department
S3	Compensation	S3.1C	Ratio of basic salary and remuneration of women to men	%			0.95 : 1	1.19:1	GRI 405-2	6.3.7, 6.3.10, 6.4.3, 6.4.4	SDG 5	260	
						TR	AINING AND ED	UCATION					
S4] "] "	S4.1C	Employee training and education: initiatives	have	•	•	•	•	GRI 404-2	6.4.7	SDG 4	368-369	- Training Plan is categorized by two target groups:
	Education	S4.10	Total investment in employee training and education	Mil. BHT	6.74	7.26	5.99	7.60	GRI 404	6.4.7	SDG 4	378-378	 Executives, according the Success Profile and Management and staffs, according to Job Competency Profiles
		S4.2C	Employee training and education: targets	have	•	•	•	•	GRI 404	6.4.7	SDG 4	368-371	and the Group's direction
		S4.20	Benefits from employee training and education for the employees and/or the organization	have	•	•	•	•	GRI 404	6.4.7	SDG 4	370-378	
		S4.3C	Average hours of training per year per employee	hour/person/year	39.1	52.12	42.87	50.74	GRI 404-1	6.4.7	SDG 4	370-371	
S6	Employee Engagement	S6.1C	Employee engagement: initiatives	have	•	•	•	•	GRI 402 GRI 407	6.4.3, 6.4.4	SDG 8	358-364	
		S6.2C	Employee engagement: targets	have	•	•	•	•	GRI 402 GRI 407	6.4.3, 6.4.4	SDG 8	359	
		S6.3C	Employee engagement survey results	Score	71%	n/a	68%	n/a	GRI 402	6.4.3, 6.4.4	SDG 8	359-361	- The next survey round will be in year 2020
			Employee enablement survey result	or %	71%	n/a	69%	n/a	GRIv 407			000 001	
		S6.4C	Employee turnover rate	%	7.7%	15.0%	10.0%	9.66%	GRI 401-1	6.4.3	SDG 8	359	- Measured only permanent employees
		S6.5C	Total number of employees that returned to work after parental leave	%	100%	100%	100%	100%	GRI 401-3	6.4.4	SDG 8	260	
		S6.6C	Measures to support rights to exercise freedom of association and collective bargaining	have	•	•	•	•	GRI 402 GRI 407	6.4.5	SDG 8	262-263	- The company allows employees / group of employees to negotiate with company.

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TABLE 2:

INNOVATION LEADER

CDI	O			SD Perfe	ormance		SET report		ISO	Page No.	
GRI	Operation	Unit	2016	2017	2018	2019	Guideline	SDGs	2600	or URL	Note (s)
			INI	NOVATION LEADE	R for PROSPERI	TY ECONOMIC: C	GRI 300				
GRI 201	Economic Performance										
GRI 201-1	Direct Economic Value Generated							SDG 1-17	-		
	Total Assets	M.THB	19,503	19,513	24,253	25,262					http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
	Total Revenue	M.THB	24,392	28,982	27,963	37,626				4	http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
								SDG 1-17			
	Salary, wages and employees' benefits	M.THB	1,539	1,205	1,090	1,108			-		http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
	Operating Expenses	M.THB	20,500	25,949	26,979	33,767			-		http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
	Payment to Providers of Capital							SDG 1-17			
	Tax Payment to governments	M.THB	655	371	234	509			6.8.7		http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
	Interest Payments	M.THB	107	96	153	165					http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
	Dividend/share	THB	0.9	1.2	0.3	1.5*				4	*Include the roposed final divedend of Baht 1.1 per shares, which is subjected to approval at 2020 AGM.
	Consolidated Income Statement							SDG 1-17			
	Net Profit	M.THB	3,110	2,537	564	3,123				4	http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
	EBITDA	м.тнв	4,728	4,514	2,457	3,953				4	http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
	Income Distribution to Stakeholders							SDG 1-17			
	Funding for CSR Project Contributions	M.THB	15.17	15.30	13.26	7.72					http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
	Management Overheads	M.THB	n/a	n/a	4.90	0.93					http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
	Employee Volunteering during Paid Working Hours	M.THB	n/a	n/a	3.88	2.44					http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
	In-kind Giving: Product or Service Donation, Projects/Partnership	M.THB	n/a	n/a	0.90	0.81					http://www.tipcoasphalt.com/upload/AnnualReportE2019.pdf
GRI 308	Supply Chain Management										
GRI 103	Management Approach					•	G6.1C G6.2C G6.3C G6.4C	SDG 12 SDG 16	7.4.2	310	
GRI 204-1	Local products and services Purchasing	M.THB	n/a	n/a	13,820	15,013	G6.1C	SDG 12 SDG 16	6.6.6	311	In 2019, the Group revised the definition and calculation methodology for local procurement transactions, hence new time series data from 2018 onwards.
	Proportion of Purchasing Local Products and Services	%	n/a	n/a	38	37	G6.3O	SDG 12 SDG 16	6.6.6	311	
GRI 308-1/GRI 414-		M.THB	n/a	n/a	36,327	4	G6.4C	SDG 12	6.6.6	312-313	
	New Suppliers / Key partners that were screened using ESG criteria	%	n/a	n/a	0			SDG 16			

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TABLE 2:

ECO-EFFICIENCY OPERATION

GRI	Operation	Unit		SD Perf	ormance		SET report	200	100 000	Page No.	
GRI	Operation	Onit	2016	2017	2018	2019	Guideline	SDGs	ISO 2600	or URL	Note (s)
			ECO-EFFI	CIENCY OPERAT	IONS FOR BETTE	R ENVIRONMEN	T: GRI 300				
GRI 302	Energy										
GRI 103	Management Approach					•	E2.4C E2.1O E2.2C E2.3C			172-174	
GRI 302-1	Energy consumption within organization	G.Joules (GJ)	284,321	270,880	251,387	210,975	E2.4C	SDG 7	6.5.4	171-174	Revised data of 2016 - 2018 due to data collection improvement.
GRI 302-3	Energy intensity	G.Joules (GJ) /Production Ton	0.489	0.497	0.509	0.452	E2.5O	SDG 7	6.5.4	171-174	Revised data of 2016 - 2018 due to data collection improvement.
GRI 303	Water and Effluents										
GRI 103	Management Approach					•	E3.1C E3.1O E3.2C E3.3C	SDG 6	7.4.2	182-183	
GRI 303-3	Recycled and reused water	Mega Litres	9.71	9.68	8.18	4.25	E3.40	SDG 6	6.5.4	181-183	Revised data of 2016 - 2018 due to data collection improvement.
GRI 303-3	Water withdrawal	Mega Litres	107.71	89.02	51.58	54.92	E3.4C	SDG 6	6.5.4	181-183	Revised data of 2016 - 2018 due to data collection improvement.
GRI 305	Emissions										
GRI 103	Management Aproach					•	E1.1C E1.1O E1.2C E1.3C			172	
GRI 305-1 GRI 305-2	Direct (Scope 1) GHG emissions and Energy indirect (Scope 2) GHG emissions	Ton of CO ₂ e	22,914	21,942	20,415	17,814	E1.4C	SDG 13	6.5.5	171-172	Revised data of 2016 - 2018 due to data collection improvement.
GRI 305-4	GHG emissions intensity (Scope 1 & 2)	Ton of CO ₂ e / production	0.03941	0.04028	0.04131	0.03818	E1.40	SDG 13	6.5.5	171-172	Revised data of 2016 - 2018 due to data collection improvement.
GRI 306	Effluents and Waste										
GRI 103	Management Approach					•	E4.1C E4.1O E4.2C E4.3C			182-183	
GRI 306-2	Total weight of waste (hazardous / non-hazardous waste) from all method	Ton	388	367	431	405	E4.4C	SDG 12	6.5.3	181-183	Revised data of 2016 - 2018 due to data collection improvement.
	Total weight of waste to landfill (hazardous / non-hazardous waste)	Ton	40	54	47	35	E4.4C	SDG 12	6.5.3	181-183	
	Total weight of reused and recycled waste	Ton	384	313	384	370	E4.40	SDG 12		181-183	Revised data of 2016 - 2018 due to data collection improvement.
GRI 306-3	Significant Spills	Ton	0	0	0	0	E4.4C	SDG 12	6.5.3	181	

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TABLE 2:

SAFETY AWARENESS

GRI	Operation	SAFETY AWARENESS FOR SAFETY SOCIE				SET report	SDGs	ISO 2600	Page No.	Note (s)	
GRI	Орегацоп	Onit	2016	2017/2560	2018/2561	2019/2562	Guideline	SDGS	150 2600	or URL	Note (s)
			S	AFETY AWARENE	SS FOR SAFETY	SOCIETY: GRI 40	00				
			SAF	E SOCIETY - OCC	UPATIONAL HEAL	TH & SAFETY: GRI	403				
GRI 403-4	Health and Safety Framework and Training										
	Coverage of health and safety management framework	person	750	732	712	672			6.4.6	196-211	
	Coverage of OHS health risks/prevention training	person	n/a	n/a	n/a	n/a			6.4.6	196-211	
	Coverage of special training and/or measures to foster employees' health and well-being	person	n/a	n/a	n/a	120			6.4.6	196-211	
GRI 403	Occupational, Health and Safety										
GRI 103	Management Approach					•	\$5.1C \$5.10 \$5.2C	SDG 3	7.4.2	196	
GRI 403-9	Employee's High-Consequence work-related injury rate						S5.3C	SDG 3	6.4.6		
	Lost time Injuries Frequency Rate (LTIFR) base 1,000,000 hrs worked	Cases	4.51	1.59	0	0.84				194-198	
	Lost time Injuries Severity Rate (LTISR) base 1,000,000 hrs worked	Day	92.49	20.73	0.00	1.69				194-198	
	Fatalities Employee						S5.3C	SDG 3	6.4.6		
	- Male - Female	person person	0	0	1 0	1 0				194-195	
	Contractor - Male - Female	person person	0	0	0	0 0			6.4.6	194-195	
	Death from work-related illnesses - Male - Female	person person	0	0	0	0 0			6.4.6	194-195	
	Death from work-related accidents - Male - Female	person person	0 0	0 0	1 0	1 0			6.4.6	194-195	

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TABLE 2:

SAFETY AWARENESS

				SD Perfe	ormance		SET report			Page No.	
GRI	Operation	Unit	2016	2017/2560	2018/2561	2019/2562	Guideline	SDGs	ISO 2600	or URL	Note (s)
			SA	AFETY AWARENE	SS FOR SAFETY	SOCIETY: GRI 40	0				
			SAF	E SOCIETY - OCCL	JPATIONAL HEAL	TH & SAFETY: GRI	403				
GRI 403-9	Employee Injury Rate						S5.3C	S5.3C	6.4.6		
	Injured employees (no workday lost) - Male	204000		0	0	0				194-198	
	- Male - Female	person	0	0	0 0	0					
	- remaie	person	0	U	U	U					
	Injured employees (with workday lost)								6.4.6		
	- Male	person	0	1	0	1				194-198	
	- Female	person	0	0	0	0					
	Employees Severe injuries resulting in disabilities								6.4.6		
	- Male	person	0	0	0	0				194-198	
	- Female	person	0	0	0	0					
	Injury Severity rate						S5.3C	S5.3C	6.4.6		
	Total lost days	Day	0	0	0	2				194-198	
	- Male	person	0	0	0	1				194-190	
	- Female	person	0	0	0	0					
GRI 403-10	Work-related ill health						S5.3C	S5.3C	6.4.6		
	Sick Leave	_	_	,						104 100	
	Average sick days per employee	Day	n/a	n/a	2.85	3.22				194-198	
	Tipco Asphalt Group Total Number of Sick Days	Day	n/a	n/a	2,030	2,167					
	Absentee Rate	Day	n/a	n/a	12,949	14,680	S5.3C	S5.3C	6.4.6		
	- Male	Day	n/a	n/a	9,760	12,280				194-198	
	- Female	Day	n/a	n/a	3,189	2,400					
	Occupational disease rate		0	0	0	0			6.4.6		
	- Male	%	0	0	0	0				194-198	
	- Female	%	0	0	0	0					

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TABLE 2:

GOOD CORPORATE GOVERNANCE

				SD Perf	formance		SET report			Page No.	
GRI	Operation	Unit	2016	2017	2018	2019	Guideline	SDGs	ISO 2600	or URL	Note (s)
			GOOD CORPORA	TE GOVERNANC	E FOR STRONG	BUSINESS FOUN	DATION: GRI 10	0			
			GOOD COI	RPORATE GOVE	RNANCE - GENE	RAL DISCLOSURI	E: GRI 102			,	
GRI 102	General Disclosures										
GRI 102-15	Key Economic, Environment and social Impacts, risks, and opportunities	have	•	•	•	•	G5.1C G5.1O G5.2C G5.3C	SDG 1-17	7.4.3	98-106	
GRI 102-17	Mechanisms for advice and concerns about ethics	have	•	•	•	•	G4.1C G4.10	SDG 1-17	4.4	287	
GRI 102-18	Governance Structure	have	•	•	•	•	G2.1C G2.2C G2.2O G2.3C G2.4C	SDG 1-17	6.2	281	
GRI 102-28	Evaluating the highest governance body's performance	have	•	•	•	•	G3.1C G3.1O G3.2O	SDG 1-17	6.2	282-283	
GRI 102-31	Frequency of the highest governance body's review of economic, environmental and social topics and their impacts, risks and opportunities	have	•	•	•	•	G1.1C	SDG 16	7.4.3	281-283	
GRI 102-43	Approach to stakeholder engagement	have	•	•	•	•	\$7.1C \$7.10 \$7.2C \$7.3C		5.3	280	
GRI 102-44	Key Topics and concerns raised	have	•	•	•	•	S7.1C	SDG 7	7.4.2	98-105	
			GOOD CORPO	RATE GOVERNA	NCE - HUMAN R	IGHTS ASSESSM	IENT: GRI 412				
GRI 412	Human Rights Assessment										
GRI 103	Management Approach					•	\$1.1C \$1.10 \$1.20 \$1.30	SDG 8	7.4.2	250-251	

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 420 |

TABLE 2:

GOOD CORPORATE GOVERNANCE

	Operation			SET report			Page No.					
GRI	Operation	Unit	2016	2017	2018	2019	Guideline	SDGs	ISO 2600	or URL	Note (s)	
			GOOD CO	RPORATE GOVER	RNANCE - LOCAL	COMMUNITIES:	GRI 413					
GRI 413	Local Communities											
GRI 103	Management Approach					•	S10.1C	SDG 8	7.4.2	334		
GRI 413-1	Operations with local community engagement, impact assessment and development programs		•	•	•	•	S.10.2C S10.2O S10.3C S10.3O S10.4O	SDB 8	5.3	344-345		
GRI 413-2	Operations with significant actual and potential negative impacts on local communities		•	•	•	•	S10.5O	SDG 8	6.8.2, 7.6.3	344-345		
GOOD CORPORATE GOVERNANCE - MAKETING AND LABELING: GRI 417												
GRI 417	Marketing and Labeling											
GRI 103	Management Approach					•	S8.1C	SDG 12	7.4.2	220-221		
GRI 102-43	Customer Satisfaction Rate	%	84%	86%	85%	87%	S7.3C	SDG 12	6.7.6			
	- Cutomer Satisfaction Rate: Domestic	%	86%	87%	87%	86%				222-227		
	- Cutomer Satisfaction Rate: International	%	82%	85%	82%	88%						
GRI 417-2	Incidents of non-compliance concerning product and service information/labeling	Case	0	0	0	0	S7.3O	SDG 12	6.7.6, 6.7.3	228-229	No Incidents case	
GRI 417-3	Incidents of non-compliance concerning marketing communications	Case	0	0	0	0	S7.3O	SDG 12	6.7.6, 6.7.3	228-229	No Incidents case	
			GOOD CO	RPORATE GOVE	RNANCE - CUST	OMER PRIVACY:	GRI 418					
GRI 418	Customer Privacy											
GRI 103	Management Approach					•	S9.1C S9.1O	SDG 16	7.4.2	264-265		
GRI 418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Time of complaint	0	0	0	0	\$7.30	SDG 16	6.7.7	264-265		

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 423 |

TABLE 2:

VALUE FOR THE FUTURE

GRI	Operation	Unit				SET report	SDGs	ISO 2600	Page No.	Note (s)	
			2016	2017	2018	2019	Guideline			or URL	Note (3)
	V	ALUE FOR THE	FUTURE BY T	RANSFORMING (OUR PEOPLE TO	BE READY FOR	THE GLOBAL (CHANGES: GRI	400		
			THE	MOST VALUABL	E RESOURCE - E	MPLOYMENT: G	RI 401				
GRI 401	Employment										
	Management Approach					•	\$1.1C \$1.10 \$1.20	SDG 8	7.4.2	352	
	Total number of employees	person					S2.1C	SDG 5, SDG 10	6.4.3		
	Male	person	568	545	520	478				258-259	
	Female	person	182	187	192	194				258-259	
	Total	person	750	732	712	672				258-259	
	Employees with disabilities	person					S2.1O	SDG 5, SDG 10	6.4.3		
	Male	person	1	1	1	1				258-259	
	Female	person	0	0	0	0				258-259	
	Total	person	1	1	1	1				258-259	
	Total number of employees by level	person					S2.1C	SDG5, SDG 10	6.4.3		
	Board of Directors / Supervisory Board	person	15	15	15	15					
	- Male	person	13	13	13	1:	3			258-259	
	- Female	person	2	2	2	:	2				
	Director Level up (Level E & C)	person	5	5	9	9					
	- Male	person	5	5	9	!	9			258-259	
	- Female	person	0	0	0		0				
	Director Level (Level B)	person	10	12	8	8					
	- Male	person	7	9	5	!	5			258-259	
	- Female	person	3	3	3		3				
	Manager Level (Level M1-4)	person	64	63	60	65					
	- Male	person	42		38					258-259	
	- Female	person	22	20	22	20	6				

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TABLE 2:

VALUE FOR THE FUTURE

.				SD Performance						Page No.	
GRI	Operation	Unit	2016	2017	2018	2019	SET report Guideline	SDGs	ISO 2600	or URL	Note (s)
	Operation Level (Level O1 - P4)	person	671	652	635	591					
	- Male	person	514	488	468	420	6			258-259	
	- Female	person	157	164	167	16	5			256-259	
	Permanent employees	person	744	715	696	670					
	- Male	person	562	536	507					258-259	
	- Female	person	182	179	189	194	4				
	Temporary employees	person	6	17	9	2					
	- Male	person	6	9	7	:	2			258-259	
	- Female	person	0	8	2		0			250-259	
	Total number of employees by region	person	750	732	712	672	S2.1C	SDG5, SDG 10	6.4.3		
	- Head Quarter, Bangkok	person	224	232	214	219					
	- Phitsanulok Plant	person	98	92	87	82					
	- Nakhon Ratchasima Plant	person	146	141	147	143				256-258	* Managed Rayong truck fleet by moving PDR fleet to part-
	- Rayong Plant	person	128	128	120	105					ners
	- Phapradaeng Plant	person	69	71	71	55					
	- Surat Thani Plant	person	85	68	73	68					*Operated Phapradaeng truck fleet via partners
	Total number of employees by employment type	person					S2.1C	SDG5, SDG 10	6.4.3		
	Permanent employees	person	744	688	696	670					
	- In Head Office	person	224	203	212	219	9			256-258	
	- In Other Locations	person	520	485	484	45	1				
	Temporary employees	person	6	17	16	2					
	- In Head Office	person	0	2	2		0			256-258	
	- In Other Locations	person	6	15	14	:	2			250 250	
	Permanent employees	person	744	688	696	670					
	- Male	person	562	536	507	470	6			256-258	
	- Female	person	182	179	189	194	4			200 200	

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 426 |

TABLE 2:

VALUE FOR THE FUTURE

GRI	Operation			formance		SET report			Page No.		
GRI	Operation	Unit	2016	2017	2018	2019	Guideline	SDGs	ISO 2600	or URL	Note (s)
	Temporary employees	person	6	17	16	2					
	- Male	person	6	9	13	2	2			256-258	
	- Female	person	0	8	3	С)				
	Total number of employees by Employment Type	person					S2.1C	SDG5, SDG 10	6.4.3		
	Full Time Employee	person	750	732	712	672					
	- Male	person	568	545	520					256-258	
	- Female	person	182	187	192	194	1				
	Part-Time Employee	person	0	0	0	0					
	- Male	person	0	0	0	C	O			256-258	
	- Female	person	0	0	0	C)				
	Total Employees by Age						S2.1C	SDG 5, SDG 10	6.4.3		
	< 30 Years	person	107	109	98	104					
	- Male	person	65	70	60	66	6			256-258	
	- Female	person	42	39	38	38	3				
	30 - 50 Years	person	503	472	453	407					
	- Male	person	389	357	331	286				256-258	
	- Female	person	114	115	122	121					
	> 50 Years	person	140	151	161	161					
	- Male	person	114	118	129					256-258	
	- Female	person	26	33	32	35	5				
	Percentage Employees by age						S2.1C	SDG 5, SDG 10	6.4.3		
	< 30 Years	person	14%	15%	14%	15%					
	- Male	person	61%	64%	61%					256-258	
	- Female	person	39%	36%	39%	37%					
	30 - 50 Years	person	67%	64%	64%	61%					
	- Male	person	77%	76%	73%					256-258	
	- Female	person	23%	24%	27%	30%					

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TABLE 2:

VALUE FOR THE FUTURE

GRI	Operation	Unit	SD Performance					000	100 000	Page No.	
GRI	Operation	Onit	2016	2017	2018	2019	Guideline	SDGs	ISO 2600	or URL	Note (s)
	> 50 Years	person	19%	21%	23%	24%					
	- Male	person	81%	78%	80%					256-258	
	- Female	person	19%	22%	20%	22%					
	Employee Engagement										
	Employee satisfaction rate (Thailand)	0/	740/+	,	222/	,					
	Target of employee satisfaction rate	%	71%*	n/a		n/a			6.4.3, 6.4.4	358-361	Plan to do employee survey in 2020
	Tipco Asphalt Group (Include Malaysia)	% %	80%* 72%*	n/a					, , ,		, , , , , , , , , , , , , , , , , , , ,
	Employees participating in employee	%	93%*	n/a n/a		n/a n/a					
	satisfaction survey	70	93%	ri/a	92%	TI/a					
GRI 401-1	New Employee hires and turnover									358-359	
	Recruitment						S6.4C	SDG 8	6.4.3		
	Average recruitment cost for all full time employees	Recruit expense	n/a	n/a	n/a	n/a					
		/ No. emloyee									
	New hire	person	144	144	122	80				362-363	
	New hire rate	%	19%	20%	17%	12%				362-363	
	By Gender	person	127	113	88	60					
	Male	%	88%	7%	72%	75%	S6.4C	SDG 8	6.4.3	362-363	
	Female	person	17	31	34	20					
		%	12%	22%	28%	25%				362-363	
	By Age	person	43	55	49	40					
	< 30 years	%	30%	38%	40%	50%	S6.4C	SDG 8	6.4.3	362-363	
	30 - 50 years	person	91	75	65	37					
		%	63%	52%	53%	46%				362-363	
	>50 years	person	10	14	8	3					
		%	7%	10%	7%	4%				362-363	
										ı	

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TABLE 2:

VALUE FOR THE FUTURE

GRI	Operation	Unit		formance		SET report			Page No.		
GNI	Operation	Onit	2016	2017	2018	2019	Guideline	SDGs	ISO 2600	or URL	Note (s)
	Voluntary turnover										
	Voluntary employee turnover rate	person	52	99	65	61	S6.4C	SDG 8	6.4.3	368-369	
		%	8%	15%	10%	10%					
	Voluntary employee turnover rate	person	33	54	52	45				368-369	
	(Exclude Truck Driver)	%	7%	12%	11%	10%				355 355	
	Voluntary employee turnover rate	person	19	45	13	16					
	(only Truck Driver)	%	9%	22%	7%	10%				368-369	
	Turnover (Permanent)	person	88	144	80	107	S6.4C	SDG 8	6.4.3		
	Employee Turnover	%	13%	22%	12%	17%				368-369	
	Employee Turnover Rate										
	"Employee Turnover Rate	person	50	84	60	60					
	(Exclude Truck Driver)"	%	11%	18%	13%	13%					
	"Employee Turnover Rate									368-369	
	(Exclude Truck Driver)"										
	Employee Turnover (Only Truck Driver)	person	38	60	20	49					
	Employee Turnover Rate (Only Truck Driver)	%	18%	30%	11%	32%				368-369	
	By Gender	person	38	59	39	29	S6.4C	SDG 8	6.4.3		
	Male	%	76%	70%	65%	67%				368-369	
	Female	person	12	25	21	12					
		%	24%	30%	35%	28%				368-369	
	By Age	person	17	24	18	19				000 000	
	< 30 years	%	34%	29%	30%	44%				368-369	
	30 - 50 years	person	25	49	38	19	S6.4C	SDG 8	6.4.3		
		%	50%	58%	63%	44%				368-369	
	>50 years	person	8	11	4	3				000 000	
		%	16%	13%	7%	7%				368-369	

2019 | SUSTAINABILITY REPORT | TIPCO ASPHALT GROUP 432 |

TABLE 2:

VALUE FOR THE FUTURE

GRI	Operation	Unit		SD Per	formance		SET report	CDC-	100 0000	Page No.	N-1- (-)
GRI	Operation	Onit	2016	2017	2018	2019	Guideline	SDGs	ISO 2600	or URL	Note (s)
	By Level (Exclude Truck Driver)	person	0	0	0	0	S6.4C	SDG 8	6.4.3	368-369	
	Director Level up (Level E & C)	%	0%	0%	0%	0%				308-309	
	Director Level (Level B)	person	1	1	0	0				368-369	
		%	2%	1%	82%	0%				300-309	
	Manager Level (Level M1-4)	person	4	11	11	0				368-369	
		%	8%		18%					000 000	
	Operation Level (Level O1 - P4)	person %	45 90%	72 86%	49 82%	41 100%				368-369	
GRI 401-3	Parental Leave	70	90%	80%	62 70	100%					
GRI 401-3							S6.5C	SDG 8	6.4.4	260-261	
	Number of employees taking parental leave	person	11	8	18	20				260-261	
	Number of employees returning to work after parental leave who are still	person	11	8	18	20				000 004	
	employed for the 12 months									260-261	
	Employees returned to work after parental leave (retention rate)	%	100%	100%	100%	100%				260-261	
			THE	MOST VALUABL	E RESOURCE - E	MPLOYMENT: GF	RI 402				
GRI 402	Labour / Management Relations										
GRI 103	Management Approach					S1.1C	SDG 8	7.4.2			
						\$1.10					
						S1.2O				254-255	
						S6.1C S6.2C					
GRI 402-1	Minimum notices periods regarding operational changes	Day	30	30	30	30.20	S6.6C	SDG 8	6.4.3		
GNI 402-1	withinfull houses periods regarding operational changes	Day						300 0	0.4.3	352-355	
			THE MOST	VALUABLE RES	OURCE - TRAINII	NG and EDUCATION	ON: GRI 404				
GRI 404	Training and Education										
GRI 103	Management Approach						S4.1C	SDG 4			
						•	S4.1O			370-371	
							S4.2C				

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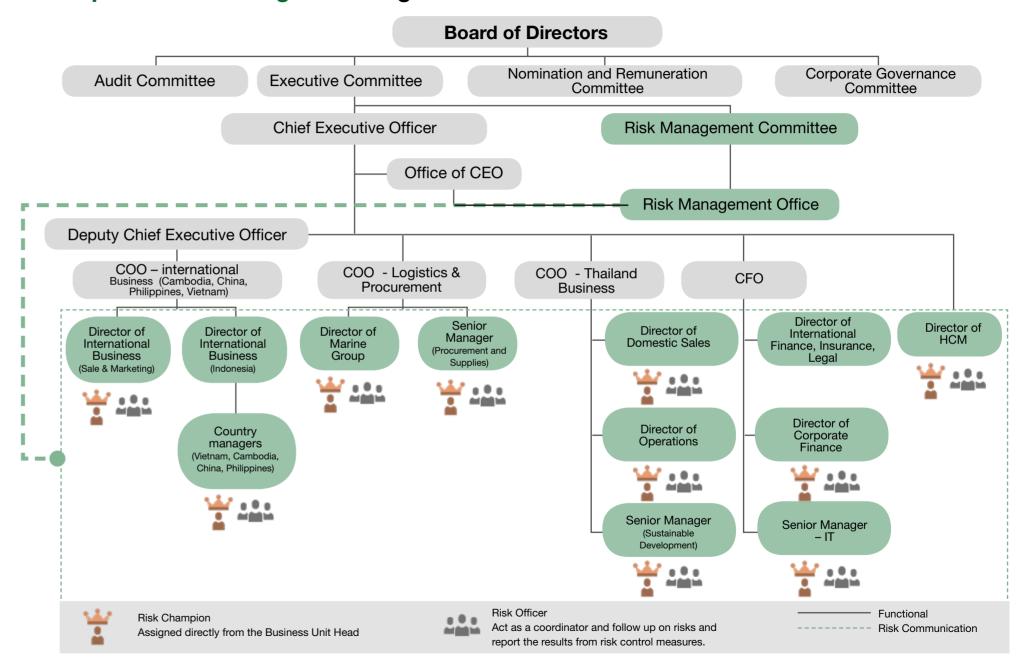
TABLE 2:

VALUE FOR THE FUTURE

GRI	Operation	1114		SD Perf	ormance		SET report			Page No.	
GRI	Operation	Unit	2016	2017	2018	2019	Guideline	SDGs	ISO 2600	or URL	Note (s)
GRI 404-1	Average hours per FTE on training and development	hour / person/	39.1	52.1	42.87	50.74	S4.3C	SDG 4	6.4.7		
	- Male	hour/person/yr.	36.31	42.22	43.19	53.87				370-371	
	- Female	hour/person/yr.	47.82	65.90	41.35	42.93					
	Employee Development By Level	hour / person	83.59	78.47	66.8	80.74	S4.3C	SDG 4	6.4.7		
	- Executive Level	hour / person	30.94	27.85	24.96	26.54				370-371	
	- Staff Level	hour / person	52.65	50.62	41.84	54.2					
GRI 404-2	Programs for upgrading employee skill and transition assistance programs	program					S4.1C	SDG 4	6.4.7		
							\$4.20	050.		370-373	
GRI 404-3	Individual Performance Appraisal						S4.2O	SDG 4	6.4.7		
	Systematic use of agreed measurable targets by line superior	%	100%	100%	100%	100%				370-373	
	(% of all employees)										
GRI 405	Diversity and Equal Opportunity										
GRI 103	Management Approach						S1.1C	SDG 5	7.4.2		
						•	S1.10	SDG 10		256-261	
							S1.2O				
GRI 405-1	Gender Diversity						S2.1C	SDG 5	6.3.7, 6.3.10, 6.4.3,		
	Women in top leadership positions	person	0	0	0	0	S2.10	SDG 10	6.4.4	256-261	
	(C-Suite level up to Managing Director level)	%	0%	0%	0%	0%					
	Women in director positions and above	person	3	3	3	3					
	(Director level to C-Suite Level)	%	30.00%	25.00%	37.50%	37.50%				256-261	
	Women in management positions	person	22	20	22	26				050 004	
	(Manager level up to Director level)	%	34.38%	31.75%	36.67%	40.00%				256-261	
	Women in workforce	person	157	164	167	165					
		%	23.40%	25.15%	26.30%	27.73%				256-261	
GRI 405-2	Ratio of Basic Salary and Remuneration of Women to Men	Ratio			0.95 : 1.00	1.19 : 1.00	S3.1C	SDG 5	6.3.7, 6.3.10, 6.4.3,		Male salary = 1.00
	Avg. Basic salary and remuneration of men							SDG 10	6.4.4	256-261	
	Avg. Basic salary and remuneration of women									-	
	, trg. Sacio salary and formation of women										

New Organization:

Enterprise Risk Management Organization





Cover photo

Wattway: the world's first solar photovoltaic road surfacing solution in France developed by our strategic partner: Colas Group since 2015.

Source: www.colas.com



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Innovative Solutions Partner



Annual Report 2019

External Evaluation

Main ESG



2010:the Group applied ISO26000 as guideline for integrating social responsibility into the organization

Management System Related

MASCI

ClassNK

2012 : the Group was certified with ISO 39001, for Head Office and 5 plants in Thailand

The Group was also certified with ISO 9001 : 2015, ISO 14001 : 2015, and ISO 45001: 2018 for Head Office and 5 plants in Thailand

ISO 9001 QMS03015/619 ISO 14001 EMS03006/109 ISO 45001 OHSMS18015/015