



# A Better Tomorrow

2018 | Sustainable Development Report



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In Thai version, one fifth of content of this report in Thai version had translated by blind translator by using "Delta Read Ring for the blind", a prototype project submitted in Delta Angel Fund for Startup Program 2018.





# SET SUSTAINABILITY AWARDS 2018

Delta Electronics (Thailand) PCL. receives  
Outstanding Sustainability Award  
and Thailand's Sustainability Investment Award  
at SET Sustainability Awards 2018

# Mission

To provide innovative, clean and energy-efficient solutions for better tomorrow

## Corporate Culture

Strive to change, and pursue sustainability

### Innovation

Create new ideas and take them to success effectively.

### Quality

Consistently deliver superior performance and pursue improvement all the time.

### Agility

Identify emerging trends and act quickly to capture new opportunities.

### Teamwork

Fully leverage global value network and collaborate to achieve mutual goals

### Customer Satisfaction

Anticipate customer needs and exceed expectations.



# President's Message



**For** the past 30 years, Delta has thrived on the challenges of discovering innovative solutions for a better tomorrow. In 2018, the world witnessed unprecedented challenges and disruption from geopolitical and trade tensions that affected markets and now pose an urgent global risk to tackling climate change. Global warming has emerged as a dominant issue with immediate and long-lasting impacts on our global communities. Delta stands united in our commitment to sustainability and corporate citizenship inspired by our brand promise: Smarter. Greener. Together.

Delta sets our sustainable development strategy as a roadmap in our drive towards a beneficial and inclusive company with future-proof solutions, responsible business, corporate governance and meaningful action for the environment. Our Sustainable Development Committee regularly reviews CSR activities and its framework to empower everyone at Delta to ramp up value creation and raise the bar in sustainability performance.

In the past year, Delta stepped up efforts in core programs and pioneered new ways to maximize shared values for our communities while fostering a prosperous and healthy society. We held our inaugural Delta Industry Summit as a platform for decision-makers and experts from the government and private sectors to explore and advocate smart city and green solutions for Thailand's future. Delta doubled down on our commitment to human resources development by putting our Industrial Automation Academy trainees through a boot camp to fill competency gaps and force a breakthrough at the international Delta Cup. We also launched the Delta Green Meeting Initiative to get all employees involved in reducing our carbon footprint at company events.

By wholeheartedly embracing the spirit of continual improvement, our teams have helped us win many CSR and sustainability awards in 2018. We would like to thank the following organizations for their recognitions:

1. S&P Dow Jones Indices and RobecoSAM for inclusion into top five companies in the "ITC Electronic Equipment, Instruments & Components" sector
2. The London Stock Exchange Group (LSEG), FTSE Russell for inclusion into FTSE4Good Emerging Index
3. The Ministry of Industry of Thailand for the Prime Minister's Industry Award 2018: Potential Industry and the Corporate Social Responsibility (CSR)
4. Stock Exchange of Thailand for the Outstanding SET Sustainability Award and Thailand Sustainability Investment (THSI) Award
5. Ministry of Energy of Thailand for the Thailand Energy Award 2018
6. Chulalongkorn Business School and the Stock Exchange of Thailand for Thailand's Top Corporate Brand Values Award 2018

7. Stock Exchange of Thailand's for inclusion into the first Thailand Sustainability Index (SETTHSI Index)
8. Thaipat Institute for inclusion into their 2018 ESG 100 Universe
9. The Ministry of Industry of Thailand for the CSR-DIW Continuous Award 2018
10. Thai Institute of Directors Association (IOD) CG Report (CGR) for its "Excellent" CGR Score

We would also like to thank all the government and private organizations who have assessed and given recognitions to Delta in 2018.

Obviously, we recognize that our sustainable development vision can only become a reality through the hard work and passion of everyone at Delta. We appreciate and are proud of employees and stakeholders who are part of our growth story and help us uplift our communities. With everyone's support, we believe we can make an outsized contribution in the fight against global warming through innovative and green solutions. We hope you will join us to create a more livable and connected society that leaves no one behind.

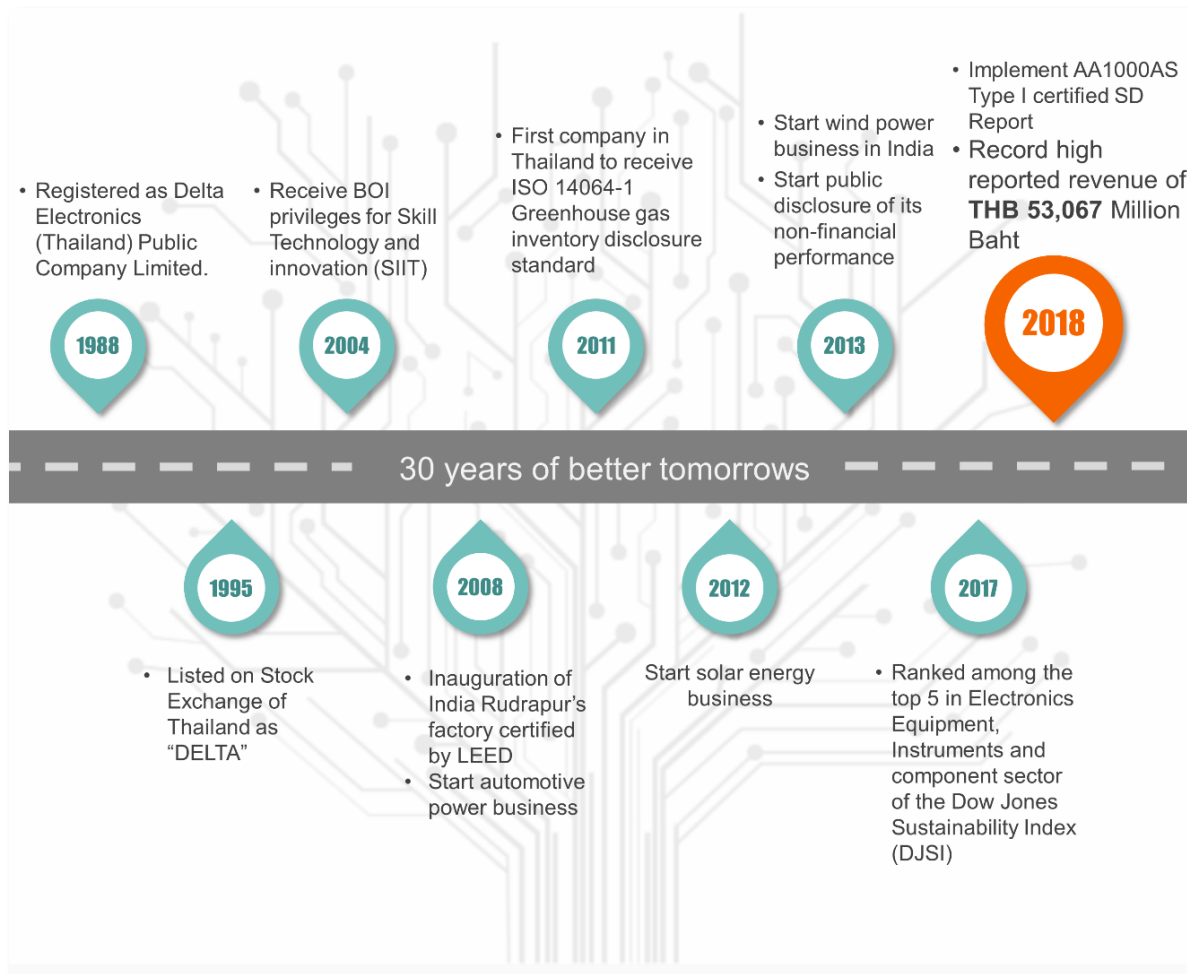
Yours sincerely,

Mr. Dick Hsieh Shen-yen  
President  
and Chairman of  
Sustainable Development Committee  
of Delta Electronics (Thailand) PCL.

This is Delta



# This is Delta



Delta Electronics (Thailand) Public Company Limited (referred to Delta as DET or Delta Thailand in the following content) is a manufacturer and exporter of power supplies and electronics equipment and parts, the company was inaugurated on June 16, 1988, with THB 40 million in initial capital. The company was converted to a public limited company on September 23, 1994, and listed on the Stock Exchange of Thailand on July 24, 1995, under the symbol of "DELTA". As of December 31, 2018, the company has THB 1,259,000 in registered capital with THB 1,247,381,614 in paid-up capital at THB 1 par value per share.

Delta is one of the world's leading producers of power supplies and electronic components that include cooling fans, EMI filters and solenoids. Our businesses are now mainly involved in power management solutions. Our current power management product line covers various types of power supplies including power systems for information technology, telecommunications, industrial applications, office automation and medical industries; and power supplies for servers, networking and DC-DC converters and adapters. Presently, we are extending our businesses to cover renewable energies such as solar power, wind power, electric vehicle and hybrid-electric vehicles. However, there was no major change in the company capital structure, operation site and supply chain in 2018. Find our latest capital structure from [Annual Report](#) page 12 while Delta's major shareholder had disclosed at <https://bit.ly/2Mw1key>.

# We supply greener power for ICT devices

Delta leverages our market leading power supply technology to create greener product and solutions that enhance quality, reliability, customer satisfaction and necessary ESG actions for our stakeholders. Since 2010, the company realized its potential to relief global climate change with smarter and greener solutions. Consequently, Delta gradually phased in to solutions business in 2015 with healthy growth in EV, green and energy-efficient solutions which are potential opportunity implied from the company's awareness of Climate Change impact to broad society.

## What is power Supply?

The purpose of a power supply is to supply electric power for a device that we use. There are many varieties of devices and power supply types. Some types are the Linear Power Supply, i.e. Transformer, Non-Linear Power Supply and Switching Power Supply. In short, power supply is a device that supplies electricity to various electrical devices and converts AC voltage to DC voltage to meet the needs of various electrical equipment for DC voltage (voltage goes to the device's capacitors or internal components)

## Why Switching Power Supply?

The main advantages of Switching Power Supply or Switching Mode Power Supply (SMPS) are high efficiency of 80-100%, which means the input is almost as much as the output. It is light, compact, which can be installed in a variety of devices.

## Why Delta?

At Delta, we commit ourselves to the advancement of power and electronics technology to provide "smarter" products and solutions with high efficiency. It help us make a "greener" and more environment-friendly way of life possible. We collaborate with our partners by listening to their needs and accomplishing our mission "together".

Visit <https://goo.gl/todPf6> or drop your queries to our sales managers at [products\\_info@deltathailand.com](mailto:products_info@deltathailand.com) to get more information on our products & solutions.



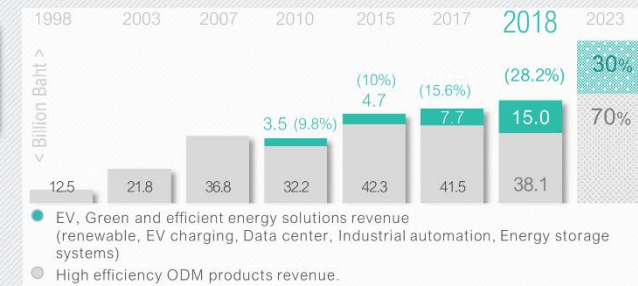
2003

Custom Designed Power supply for telecom power, wind turbine, solar inverter, energy systems, UPS, surveillance and monitoring system, medical devices.

Green and efficient energy solutions  
Electric vehicle-related products

2010

2015



2001

Fan and thermal management

2000

DC-DC Converter, visualization devices.

1999

Standard power supply for desktop, networking and adaptor

1998

Magnetic, EMI Filter, solenoid, valve and components

### Power Electronics

Delta offers a full range of ultra-efficient power suppliers, thermal management and electronic components and system for portable devices, appliances, automotive electronics and medical devices. Products in this group includes

- Merchant and mobile power
- Display and visualization healthcare devices, mobile power supplies, industrial power, medical power
- Component
- Embedded Power
- Fan & Thermal Management
- Automotive electronics
- **Innertek**
- **vivitek**

### Automation

Delta is one of the fastest growing industrial automation solutions innovators in the world. We leverage power and automation technology to develop all-inclusive building automation and controls.

- Industrial Automation
- Equipment control and visualization, network, control, drive and motion, field device
- Building automation
- Building management and control, LED lighting, intelligent surveillance

### Infrastructure

Delta is a world-leading provider of telecom power, uninterruptible power systems, datacenter infrastructure. We also have best-in-class renewable energy solutions and EV charging solutions.

- ICT Infrastructure
- Telecom power systems, networking system, UPS and datacenter infrastructure.
- Energy Infrastructure
- EV charging, energy storage system, renewable energy, high power motor drive

Integrated solutions

# The Brand

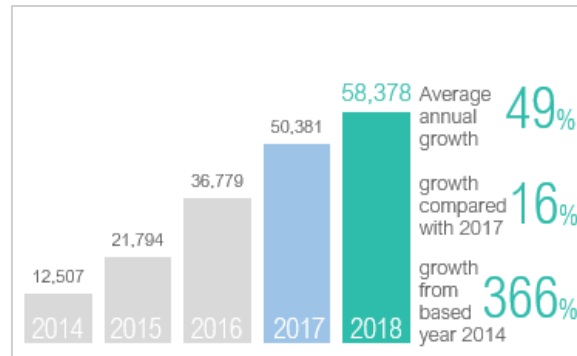
Delta's brand emphasizes innovation and energy conservation and combines robust business development with comprehensive corporate social responsibility. The company seizes on the latest global trends of today's fast-changing industrial landscape and climate change issues by creating ultra-efficient and reliable energy-saving solutions for environmental protection, energy conservation and value-add.

"To provide innovative, clean and energy-efficient solutions for a better tomorrow." is both our corporate mission and our commitment to environmental protection. Delta commits to its brand promise of "Smarter. Greener. Together." in our core value and product development inspiration. Our brand not only embodies what we demand of ourselves, but also is a commitment to our investors, customers, and employees alike. Our strong belief in Delta's brand drives the synergy of leading technology and business partner cooperation in our ongoing creation of ultra-efficient and reliable products and services including power and component products, industrial automation, energy management systems and



consumer electronics products that support a smart and environment-friendly future.

Delta Electronics (Thailand) PCL. partners with our subsidiaries and business associates (collectively known as "Delta" in this section, to increase Delta's global brand value and recognition through Delta brand products and solutions. According to Thailand's top university Chulalongkorn University's 2018 assessment, Delta Thailand's brand corporate value has grown by an impressive 366% from based year 2014.



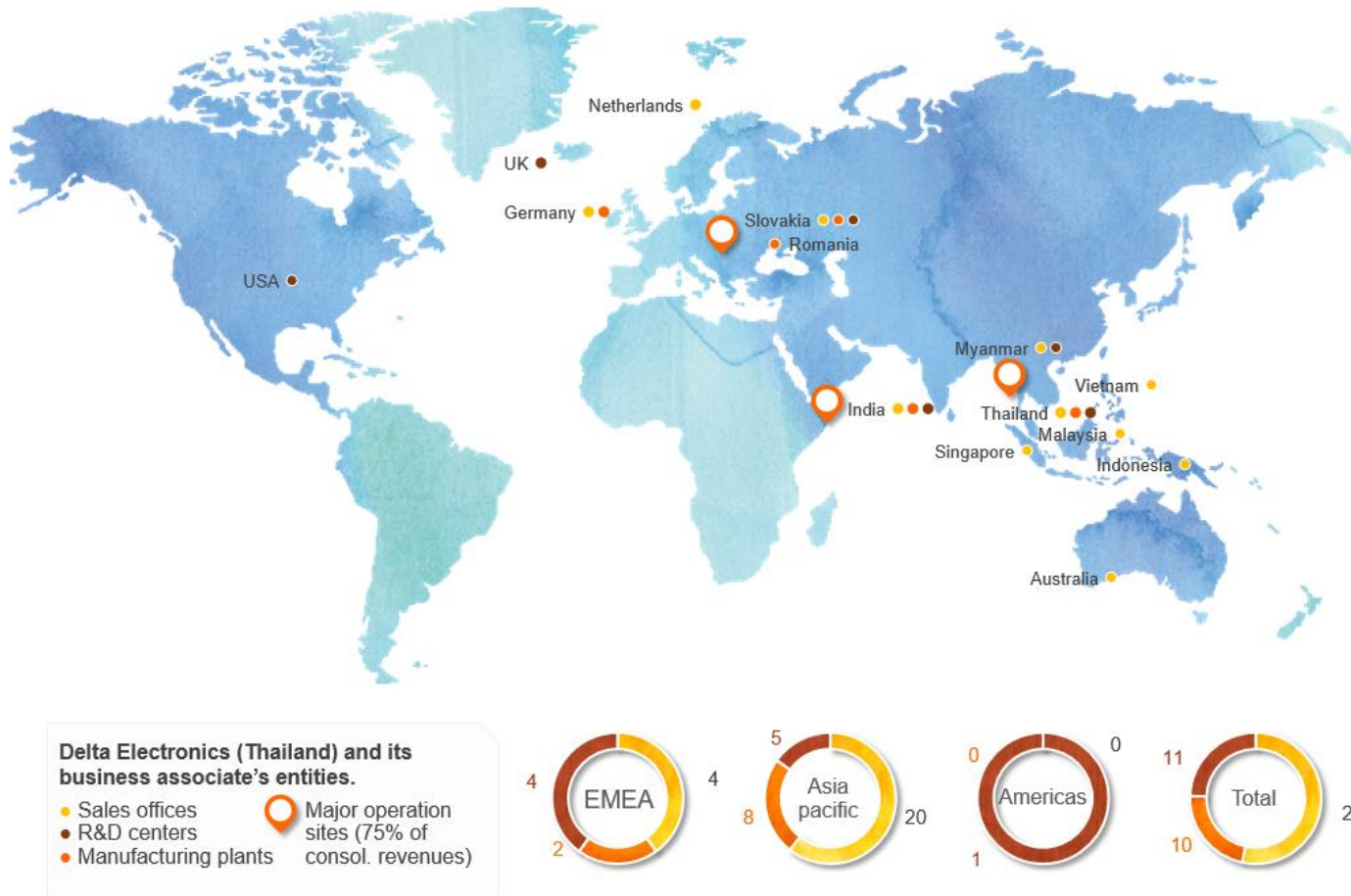
To enhance continuous growth to Delta's brand, the corporate identity begins with the way in which the company projects itself to the world and, in turn, is ultimately determined by the public perception. Considering corporate branding and advertising, this ranges from our stationery, business cards, brochures, print ads and newsletters to corporate apparel, tradeshow displays, and promotional giveaways. They send an important message to our

clients and potential customers. We clearly manifest our value and vision with a consistent image. Solid brand reputation helps to bring more clients, excellent employees, global partners and investors. In short, establishing the "[Corporate Identity System](#)" enhances the vitality of our corporate brand.



Delta showcases renewable energy and EV charging solutions at All Energy Australia 2018

# Global Presence



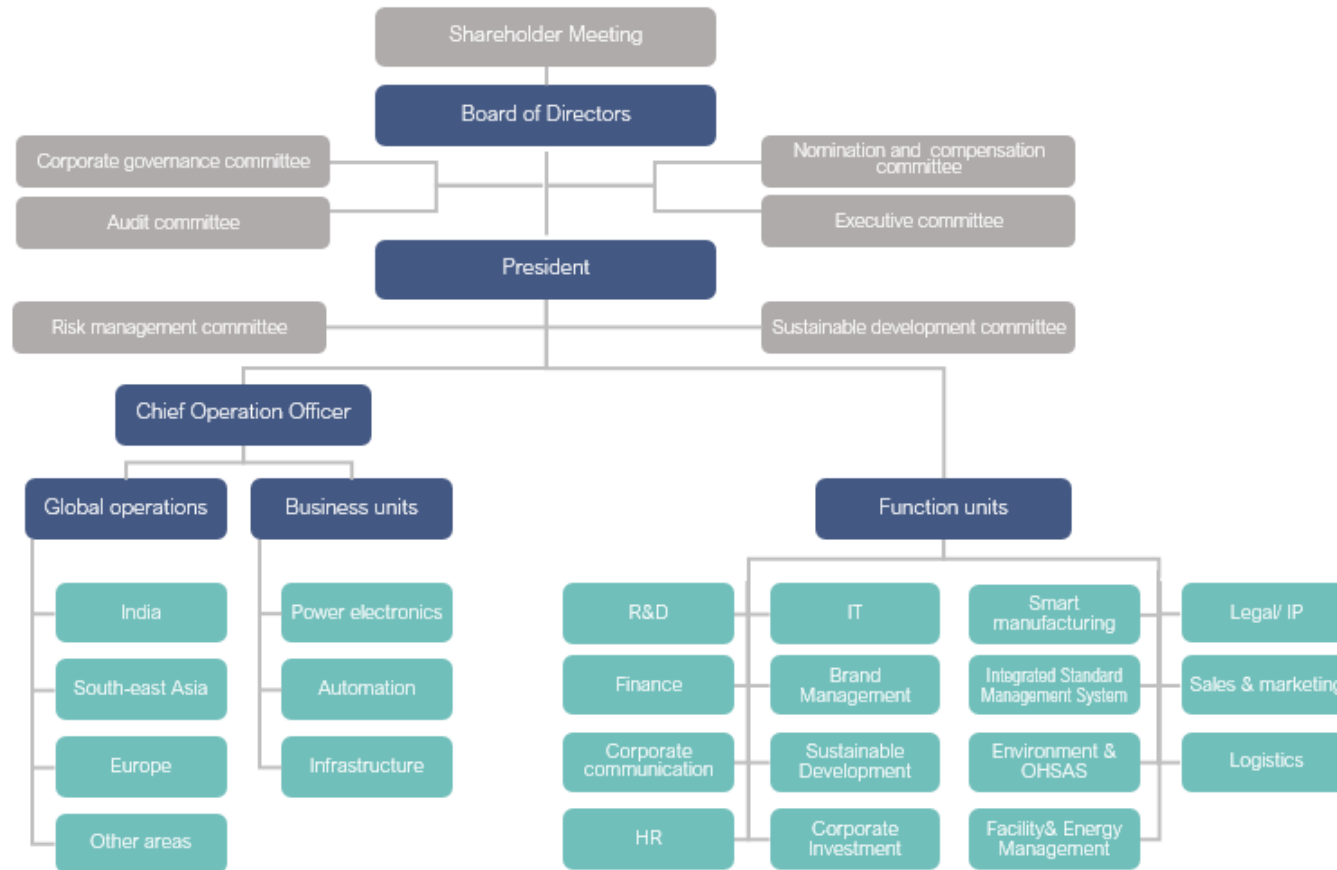
Please find [http://www.deltathailand.com/about\\_global.php](http://www.deltathailand.com/about_global.php) for more information on our operation site.

Our worldwide network of sales and technical support teams are located in Asia, USA and Europe. These teams are backed by centrally located design-engineering centers that diagnose problems during the design and production stages.

Delta has been using SAP R/3 system to facilitate and enhance its linkages with customers and suppliers all over the world. As a strategic partner to the world's technology leaders, Delta has made firm commitment to provide leading-edge product/system solutions at a reasonable cost, less environmental footprint and with the highest quality. Delta's commitment goes well beyond designing, building and shipping products/systems. We support our products and our customers worldwide long after their orders are fulfilled.

Since 2014, Delta is undergoing a gradual but successful business model transition from being mainly an ODM supplier to a key solution provider in Southeast Asia and Australia regions. As a result, the retention of top 20 ODM customers who are still the main revenue contributors are kept consistently above 80% for three years in row. This is also an indication on the gradual and fruitful transition from over dependence on ODM businesses to solution and system integration businesses.

# Delta Electronics (Thailand) Organization Structure

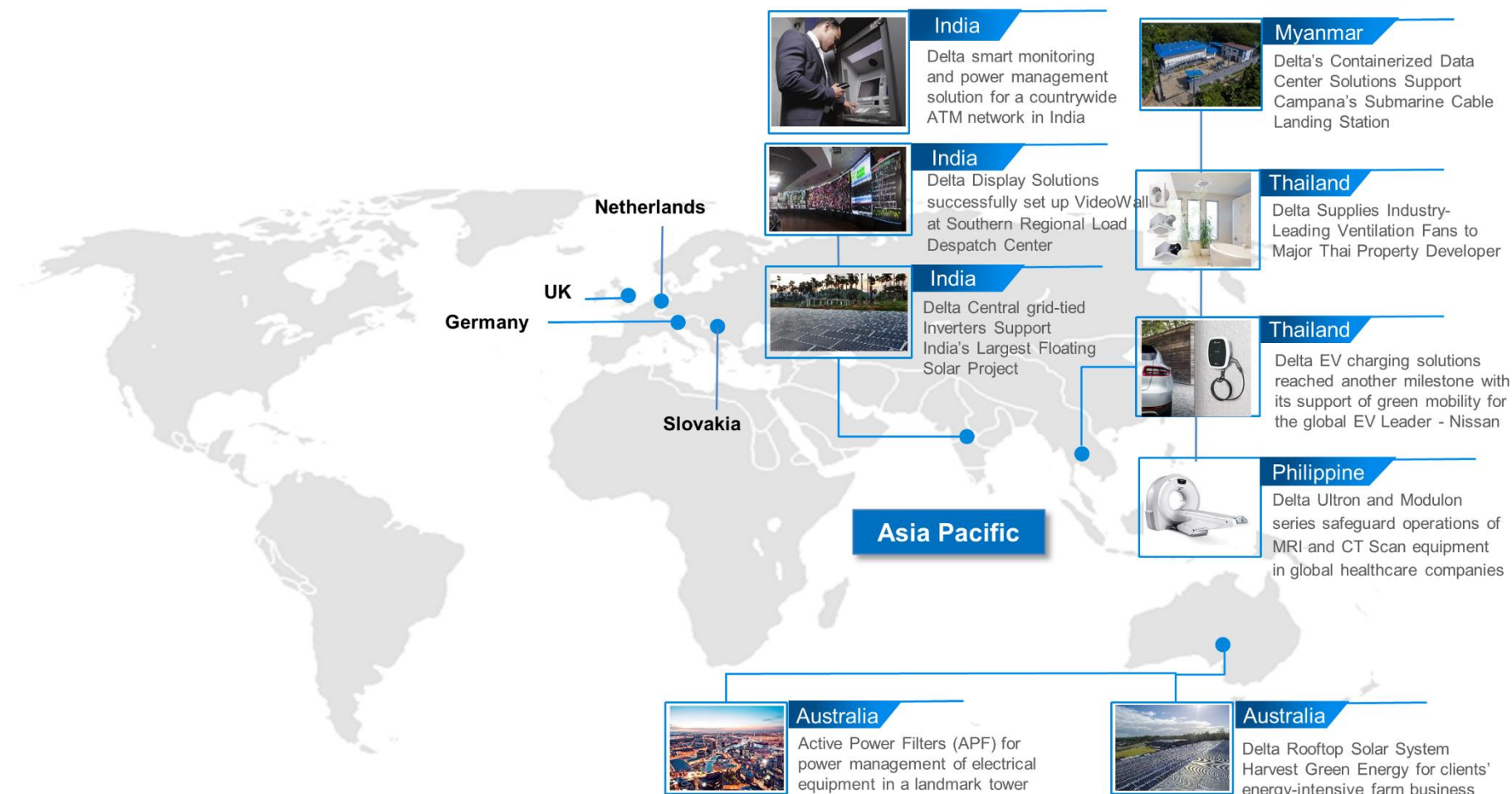


In spite of global presence and wide range of products, solutions and businesses, Delta set up simple organization for delegating authority for economic, environmental, and social topics. Through flat reporting lines policy, strategic target and directions from the highest governance body has communicated to senior executives and other employees with various approaches.

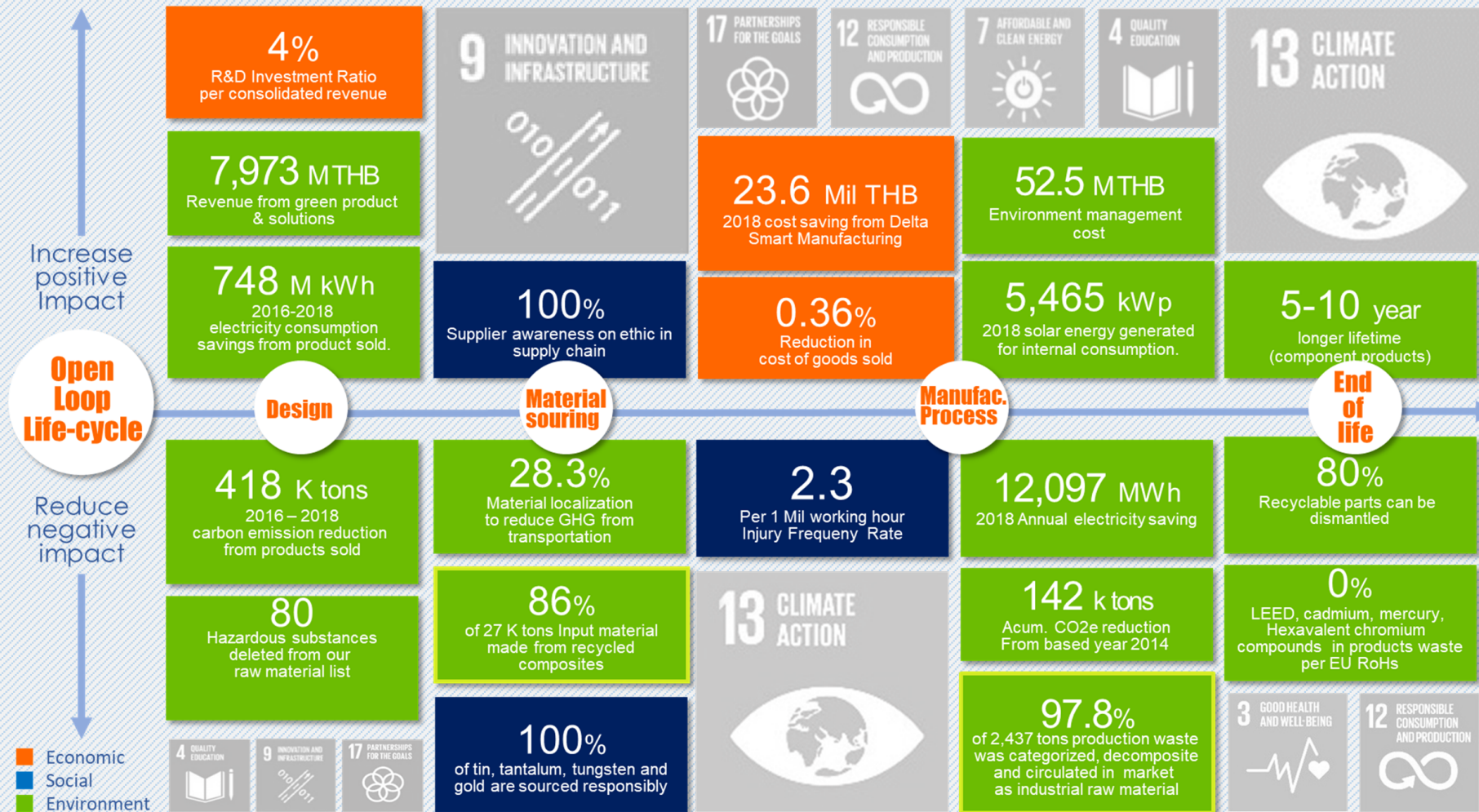
In 2018, Delta Thailand officially set up Corporate communication function to response to emerging trend and branding business. Though all Delta's executive-level position has responsible for economic, environmental, and social topics up to their functions, Sustainable Development (SD) Office had founded to connect smarter and greener values chain across related functions. This significant development demonstrate the company strong passion to boost up its performance in sustainable development matters.

## Success stories

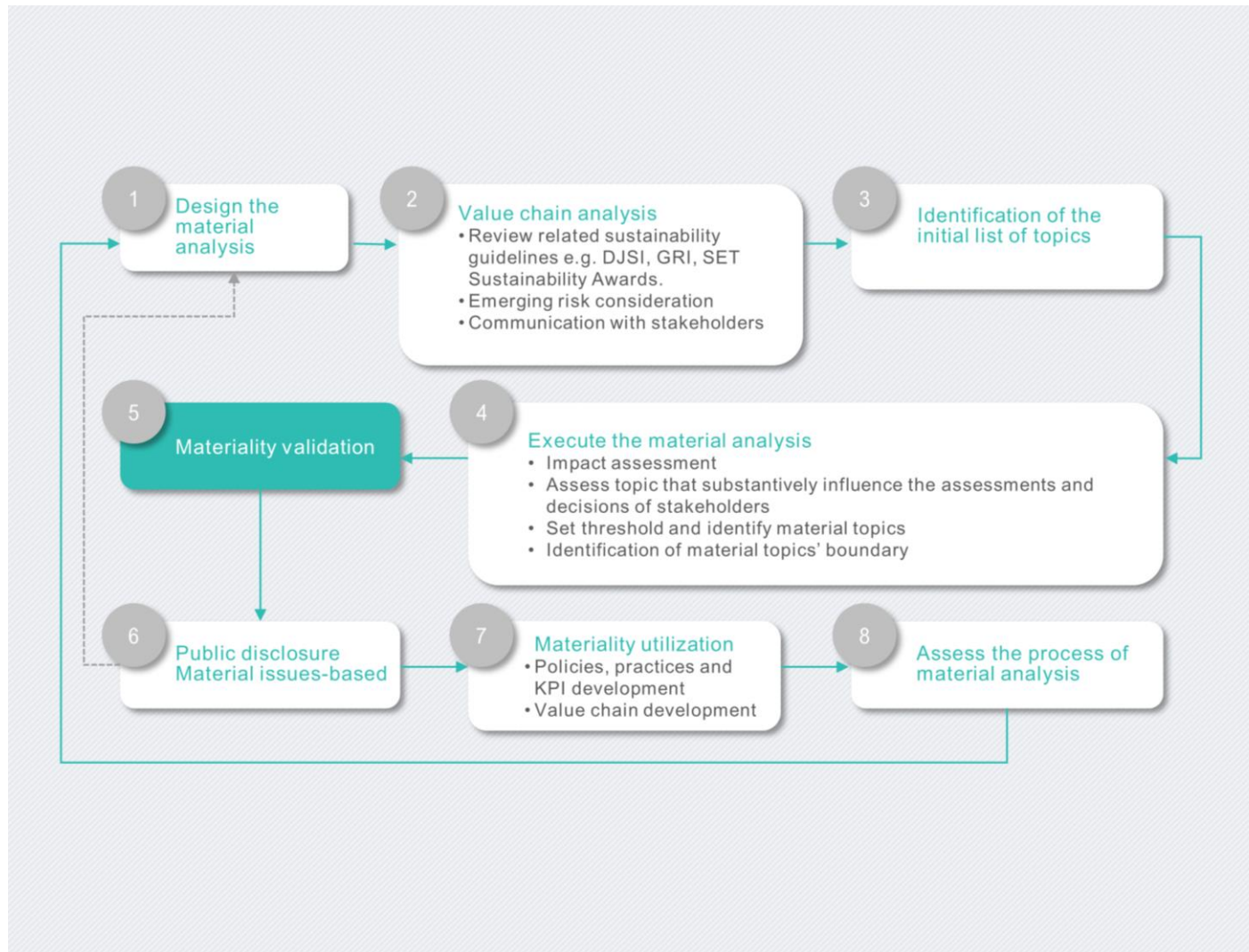
In the ever-emerging complexity of the Industry 4.0 era, customers around the world are seeking Delta products and solutions to maximize energy efficiency, drive growth and boost competitiveness. Our growing project portfolio is a testament to our successes in a wide range of areas including industrial automation, datacenters, green buildings, smart factories, telecom power, monitoring and displays, EV charging and renewable energy. Delta teams leverage global R&D and manufacturing synergies in our relentless push to deliver the most add-value to our customers. Our core competencies in energy management and power electronics power Delta innovation, providing the impetus for our ongoing journey “to provide innovative, clean and energy-efficient solutions for a better tomorrow”.



# Sustainability Management



# The Matters



Through daily business process, feedback from related public disclosure, various communication channels, trade events and partnership with leading institute; our stakeholders' voices help us realized the material issues in extended view.

Delta Thailand has adopted AA1000APS 2018 principle to communicate with both direct stakeholders who have a visible role in the organization, regulation, e.g. operational personnels, communities and entities that influenced or be impacted by it the services; and indirect stakeholders who are interested and echo their needs in Delta's performance through various approaches.

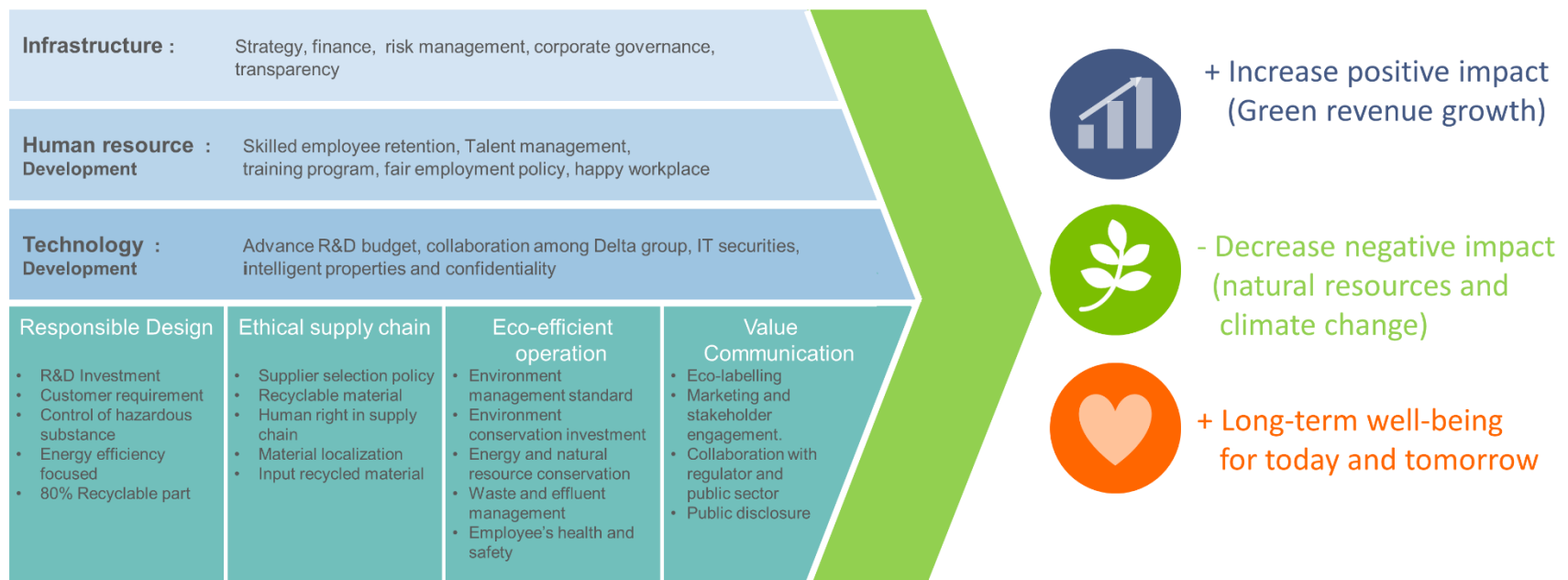
The stakeholders' expectation identified with systematic materiality analysis, so that we can take the necessary responsive action and enrich the content of our information disclosures. Furthermore, any stakeholder's highlights raised in "Other important area" portion of the on-line questionnaire had reported to the management and Sustainability Development Committee to seek for any further action as well.

## Step 1: Design the material analysis

The company's report boundaries to cover the Company's operations in Thailand which include its factories in Bangpoo Industrial Estate, Samutprakarn and factory in Wellgrow Industrial Estate, Chachoengsao and our subsidiaries in India and Slovakia which cover 99% of the Company's consolidated financial performance.

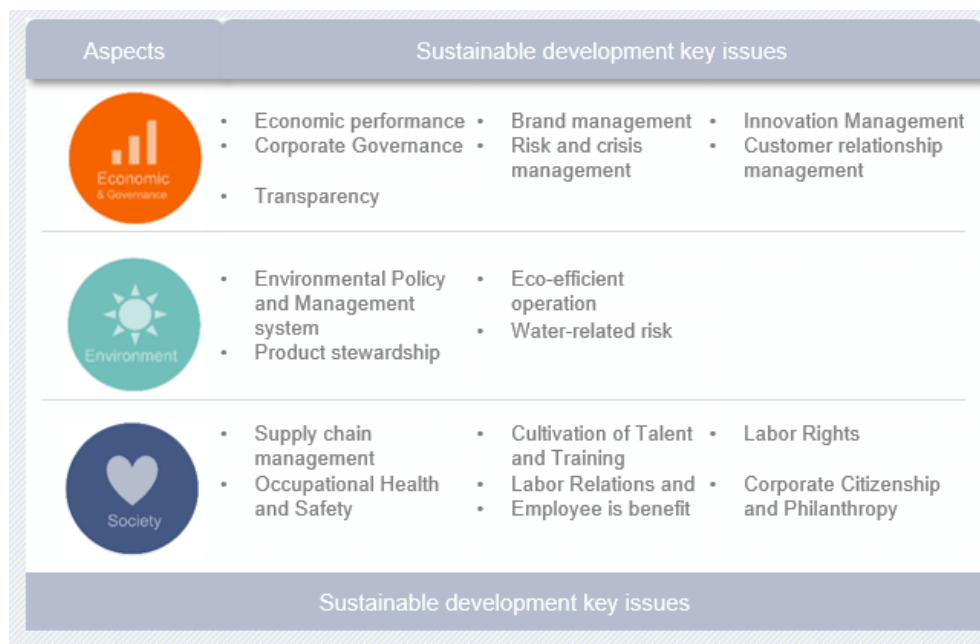
## Step 2: Value chain analysis

To meet related stakeholders' expectation while providing innovative, clean and energy-efficient solutions for better tomorrow, Delta alone cannot create significant impact. We conduct value chain analysis to attain a full and seamless interaction among stakeholders to create a win-win situation for all.



## Step 3: Identification of initial list

List sustainable development issues related to Delta Thailand's sustainable development in ESG aspects according to GRI Standard, Dow Jones Sustainability Index Assessment for ITC Sector, SET Sustainability Awards, Responsible Business Alliance (formerly EICC) Code of Conduct and the Securities and the Exchange Commission of Thailand's Corporate Governance. In conclusion, there are 16 issues for investigation included in the Company's questionnaire as following:



## Step 4: Execute the material analysis

### Communication with stakeholders

In addition to timely hearing activity, Delta Thailand has adopted ISO 26000 and AA1000APS 2018 principle to communicate with both direct stakeholders who have a visible role in the organization, regulation, operation people, communities and entities that use the service or are impacted by it; and indirect stakeholders interested in Delta's performance. The stakeholders' expectation identified with systematic materiality analysis, so that we can take the necessary responsive action and enrich the content of our information disclosures. Furthermore, any stakeholder's highlights raised in "Other important area" portion of the on-line questionnaire had reported to the management and Sustainability Development Committee to seek for any further action as well.

Stakeholder	Expectation	Engagement & Communication Approach	Respond the key topics with stakeholder	Interval / Frequency
Regulator	<ul style="list-style-type: none"> <li>- Compliance with related law and regulation</li> <li>- Response to government/ public updated policy</li> <li>- Collaboration to sustainable</li> </ul>	<ul style="list-style-type: none"> <li>- Related function's head</li> <li>- Newsletters form regulators</li> <li>- Timely meeting per regulator request</li> <li>- Compliance contact windows</li> <li>- CSR activities with government sector</li> <li>- On-site meeting</li> <li>- Regular audit</li> <li>- Compliance to related regulator standard</li> <li>- On-line channels               <ul style="list-style-type: none"> <li>- Website: <a href="http://www.deltathailand.com">www.deltathailand.com</a></li> <li>- Facebook: <a href="https://www.facebook.com/DeltaElectronicsTH">DeltaElectronicsTH</a></li> <li>- e-mail : <a href="mailto:IR@deltathailand.com">IR@deltathailand.com</a> <a href="mailto:info@deltathailand.com">info@deltathailand.com</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Risk management committee meeting</li> <li>- Board of directors meeting</li> <li>- Communication channels and training included in new employee orientation program</li> <li>- Meeting with regulator representatives</li> <li>- Public disclosure of financial and non-financial information</li> </ul>	<ul style="list-style-type: none"> <li>- Twice a year</li> <li>- Quarterly</li> <li>- Irregularly</li> <li>- Annually</li> </ul>

Stakeholder	Expectation	Engagement & Communication Approach	Respond the key topics with stakeholder	Interval / Frequency
Employee	<ul style="list-style-type: none"> <li>- Fair treatment on labor practice</li> <li>- Job security in 4.0 era and CTVO impact</li> <li>- Good health and well-being</li> </ul>	<ul style="list-style-type: none"> <li>- Labor Union, Welfare, OHSMR meeting</li> <li>- Delta Thailand's intranet</li> <li>- Delta Group on-line magazine</li> <li>- Corp communication boards and displays</li> <li>- CSR activities</li> <li>- Top down communication</li> <li>- Career development Training programs</li> <li>- Employee satisfaction survey</li> <li>- Suggestion boxes</li> <li>- Stakeholder engagement questionnaire</li> <li>- On-line channels <ul style="list-style-type: none"> <li>- Website: <a href="http://www.deltathailand.com">www.deltathailand.com</a></li> <li>- Facebook: <a href="https://www.facebook.com/DeltaElectronicsTH">DeltaElectronicsTH</a></li> <li>- Youtube: <a href="https://goo.gl/9dnYix">https://goo.gl/9dnYix</a></li> <li>- LinkedIn: <a href="https://www.linkedin.com/company/deltaelectronics/thai/">deltaelectronics/thai/</a></li> <li>- e-mail : <a href="mailto:det.sd@deltaww.com">det.sd@deltaww.com</a> <a href="mailto:whistleblow@deltaww.com">whistleblow@deltaww.com</a></li> </ul> </li> <li>- Random Interview</li> </ul>	<ul style="list-style-type: none"> <li>- Whistleblow and communication channels for employees repeated in COC &amp; Anti-corruption training</li> <li>- Career development program and training for improving employee's skill</li> <li>- LEED building implementation for better work environment</li> <li>- Welfare committee meeting</li> <li>- Public disclosure of financial and non-financial information including update the CTVO progress</li> </ul>	<ul style="list-style-type: none"> <li>- Annually</li> <li>- Approx. monthly</li> <li>- Irregularly</li> </ul>
Customer	<ul style="list-style-type: none"> <li>- Code of Conduct</li> <li>- Quality Product &amp; services</li> <li>- Customer relationship management</li> <li>- Innovation management</li> <li>- Ethic in supply chain</li> </ul>	<ul style="list-style-type: none"> <li>- Customer's survey questionnaire</li> <li>- Direct feedback via sales channel</li> <li>- On-site discussion, audit</li> <li>- CRM System in Front Office</li> <li>- Feedback through DET contact channel</li> <li>- Delta's Customer satisfaction survey</li> <li>- Roadshow, Marketing events</li> <li>- On-line channels <ul style="list-style-type: none"> <li>- Website: <a href="http://www.deltathailand.com">www.deltathailand.com</a></li> <li>- Facebook: <a href="https://www.facebook.com/DeltaElectronicsTH">DeltaElectronicsTH</a></li> <li>- LinkedIn: <a href="https://www.linkedin.com/company/deltaelectronics/thai/">deltaelectronics/thai/</a></li> <li>- Youtube: <a href="https://goo.gl/9dnYix">https://goo.gl/9dnYix</a></li> <li>- e-mail : <a href="mailto:product_info@deltathailand.com">product_info@deltathailand.com</a> <a href="mailto:info@deltathailand.com">info@deltathailand.com</a> <a href="mailto:whistleblow@deltaww.com">whistleblow@deltaww.com</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- More detail disclosure in separate SD report includes <ul style="list-style-type: none"> <li>• Corporate governance</li> <li>• Risk Management</li> <li>• Product stewardship</li> <li>• Customer relationship management</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Annually</li> </ul>

Stakeholder	Expectation	Engagement & Communication Approach	Respond the key topics with stakeholder	Interval / Frequency
Supplier & Business partner	<ul style="list-style-type: none"> <li>- Code of Conduct</li> <li>- Better profit margin</li> <li>- Business continuity</li> </ul>	<ul style="list-style-type: none"> <li>- <a href="#">Supplier's social responsibility management measure</a></li> <li>- <a href="#">Procurement Agreement</a></li> <li>- Feedback through DET contact windows</li> <li>- Regular and irregular meeting.</li> <li>- Daily business process.</li> <li>- Supplier survey and stakeholder engagement questionnaire.</li> <li>- RBA Validation Audit</li> <li>- Self-declaration of circular economy initiative</li> <li>- On-line channels <ul style="list-style-type: none"> <li>- Website: <a href="http://www.deltathailand.com">www.deltathailand.com</a></li> <li>- Facebook: <a href="#">DeltaElectronicsTH</a></li> <li>- Youtube: <a href="https://goo.gl/9dnYix">https://goo.gl/9dnYix</a></li> <li>- LinkedIn: <a href="#">deltaelectronicsthailand</a></li> <li>- e-mail : <a href="mailto:supplier@deltathailand.com">supplier@deltathailand.com</a> <a href="mailto:whistleblow@deltaww.com">whistleblow@deltaww.com</a></li> </ul> </li> <li>- Random Interview</li> </ul>	<ul style="list-style-type: none"> <li>- More detail disclosure in separate SD report includes <ul style="list-style-type: none"> <li>o Code of conduct</li> <li>o Customer relationship management</li> <li>o Environment policy and management system</li> </ul> </li> <li>- Annual Partner Meeting</li> <li>- Supplier Management Standard available on public domain.</li> </ul>	<ul style="list-style-type: none"> <li>- Annually</li> <li>- Annually</li> </ul>
Investor & shareholder	<ul style="list-style-type: none"> <li>- Economic performance</li> <li>- Company structure</li> <li>- Good return</li> <li>- Corporate Governance</li> <li>- Code of Conduct</li> <li>- Risk &amp; Crisis management</li> </ul>	<ul style="list-style-type: none"> <li>- Direct e-mail</li> <li>- Press release/ Opportunity day</li> <li>- Annual report</li> <li>- Annual General Meeting</li> <li>- Stakeholder engagement questionnaire</li> <li>- On-line channels <ul style="list-style-type: none"> <li>- Website: <a href="http://www.deltathailand.com">www.deltathailand.com</a></li> <li>- Facebook: <a href="#">DeltaElectronicsTH</a></li> <li>- Youtube: <a href="https://goo.gl/9dnYix">https://goo.gl/9dnYix</a></li> <li>- LinkedIn: <a href="#">deltaelectronicsthailand</a></li> <li>- e-mail : <a href="mailto:ir@deltathailand.com">ir@deltathailand.com</a> <a href="mailto:whistleblow@deltaww.com">whistleblow@deltaww.com</a></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- More detail disclosure in separate SD report includes <ul style="list-style-type: none"> <li>o Corporate governance</li> <li>o Code of conduct</li> <li>o Risk &amp; crisis management</li> <li>o Operation eco-efficiency</li> <li>o Human resource related figures</li> </ul> </li> <li>- Improve communication channel</li> </ul>	<ul style="list-style-type: none"> <li>- Annually</li> <li>- Irregularly</li> </ul>
Community	<ul style="list-style-type: none"> <li>- On-site marketplace for better income</li> <li>- Continue Energy education at schools</li> <li>- Good health and well-being</li> <li>- Job opportunity</li> </ul>	<ul style="list-style-type: none"> <li>- Direct feedback via CSR on-site team.</li> <li>- Stakeholder engagement survey</li> <li>- Meet the community activity held by IEAT</li> <li>- Green building visit</li> <li>- On-line channels <ul style="list-style-type: none"> <li>- Website: <a href="http://www.deltathailand.com">www.deltathailand.com</a></li> <li>- Facebook: <a href="#">DeltaElectronicsTH/</a></li> <li>- Youtube: <a href="https://goo.gl/9dnYix">https://goo.gl/9dnYix</a></li> <li>- LinkedIn: <a href="#">deltaelectronicsthailand</a></li> <li>- e-mail : <a href="mailto:info@deltathailand.com">info@deltathailand.com</a> <a href="mailto:whistleblow@deltaww.com">whistleblow@deltaww.com</a></li> </ul> </li> <li>- Random Interview</li> </ul>	<ul style="list-style-type: none"> <li>- On-site visit/ meeting</li> <li>- CSR activity</li> </ul>	<ul style="list-style-type: none"> <li>- Avg. quarterly</li> <li>- Avg. quarterly</li> </ul>

## Consider emerging risk

Delta realized that emerging risks include trends, or events that happen suddenly, and are characterised by a high degree of uncertainty in terms of their occurrence probability, the loss amount that can be expected from them, and their potential impact. They are frequently long-tail risks with a medium- to-long-term period for loss settlement. The best-known example from the past is asbestos. In sustainable development context, investigating emerging risk help us to realize the design of new business ideas to meet stakeholder expectation while reponse to the the precautionary approach and social needs.

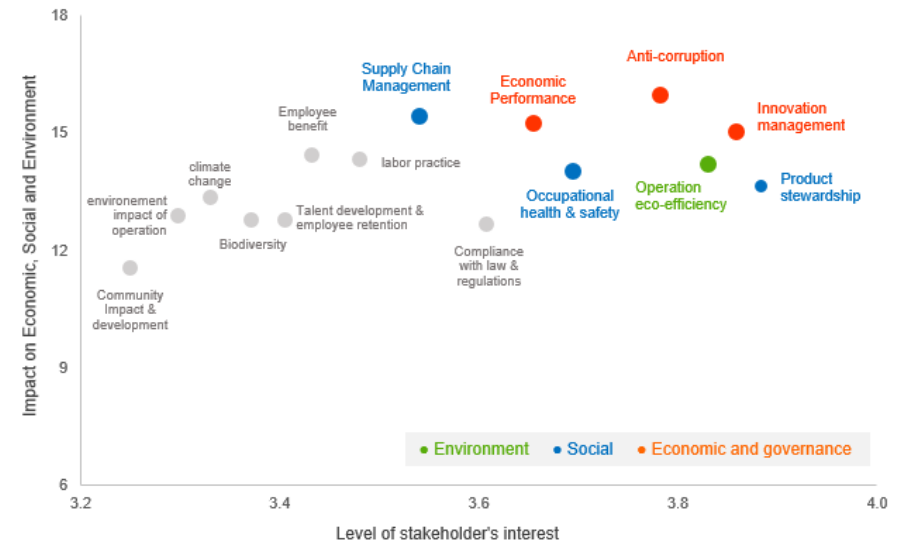
## Executive Review

2018 Sustainable Development key performance had reported to the Board of Director meeting dated 18 Feb 2019. According to the Board of director advices, stakeholder interest survey result, emerging risk review; Sustainable development committee summarized the material issues.

## Step 5: Material issue validation

Prioritize the each material aspect by using Simple Correlation Test to validate the level of significance of each aspects to the Company's key performances. Discuss the result and detail of stakeholders' score and related suggestion with the Sustainable Development Committee to assess the impact of each issue to Delta Thailand's performance.

The result of materiality prioritization indicates that 6 from 15 issues have been expected and interested by the Company's stakeholders and evaluated by the Sustainable Development Committee in high level. However, the SD Committee meeting agreed that Innovation management is the most significant issue to maintain the company's competence competences, this issue has added as Delta's materiality. Finally, the **7 material issues** had disclosed in this report in detail.



Material Issues	Page *
Transparency enhancement and Anti-corruption	32 -35
Eco- friendly operation	41-64
Economic Performance	27
Innovation management	41-43, 46
Occupational health and safety	81- 85
Product stewardship	41-45, 53-54
Supply chain management	48-51

# Awards and Recognitions

As both a Thailand-listed company and global corporate citizen, Delta offers long-term value-add to stakeholders that delivers on the company brand promise: Smarter. Greener. Together. The growing list of Sustainability Development recognitions and international standard compliances under score Delta's continuous improvement and long-term vision for sustainable development.

## Award for Excellence in Sustainability



Delta Electronics (Thailand) PCL. has won a prestigious global distinction for its excellent sustainability

performance and is the only Thai company to earn this award in the electronics category. This recognition reinforces Delta Electronics (Thailand) PCL.'s position as a global sustainability leader within its industry.

Created jointly by S&P Dow Jones Indices and RobecoSAM, the Dow Jones Sustainability Index (DJSI) was launched in 1999 as the first global sustainability benchmark and tracks the stock performance of the world's leading companies in terms of economic, environmental and social criteria.

## FTSE4Good Index Series 2018



Delta Electronics (Thailand) PCL. is in the FTSE4Good Emerging Index for the second consecutive year.

Launched in 2001 by global index provider FTSE Russell, the FTSE4Good Index Series measures performance in companies demonstrating strong Environmental, Social and Governance (ESG) practices. In 2016, the FTSE4Good Emerging Indexes began for companies in over 20 emerging countries.

## CDP Disclosure



In Delta's second submission for climate change related questionnaire, the company has scored an impressive score of B. This is largely due to its already existing operation plan and strategy centered around Sustainability Development. In 2017, more than 5,900 companies globally

had invited to join the disclosure program. Among them are 12 Thai companies which had participated in the Climate Change category.

## Nikkei Asia300



Delta Electronics (Thailand) Public Company Limited is on the Nikkei Asia300, an exclusive list of the biggest and fastest-growing companies from 11 economies across the continent. Media conglomerate Nikkei Inc. selects the companies on the Asia300 list based on market capitalization, with consideration given to growth potential and geographic balance to focus on ASEAN economies. As a SET-listed company with global operations, Delta is one of the 25 Thailand-based companies listed in Asia300.

## SET Thailand Sustainability Index

Delta Electronics is one of 45 companies listed on the Stock Exchange of Thailand's first Thailand Sustainability Index (SETTHSI Index). In June 2018, SET announced the launch of its new SETTHSI Index for top performers in Environmental, Social and Governance (ESG) aspects. Delta is one of the five companies from the technology sector in the first SETTHSI Index.

รายชื่อหุ้นที่อยู่ในดัชนีความยั่งยืน "SETTHSI Index"		
กลุ่มอุตสาหกรรม	จำนวนหุ้น	รายชื่อหุ้น
Technology (เทคโนโลยี)	5	ADVANC: บริษัท แอดวานซ์ อินโฟร์ เซอร์วิส จำกัด (มหาชน) DELTA: บริษัท เดลต้า อิเล็คโทรนิคส์ จำกัด (มหาชน) STAC: บริษัท สยาม ซิสเต็มส์ เทคโนโลยี จำกัด (มหาชน) THCOM: บริษัท ไทยคอม จำกัด (มหาชน) INTUCH: บริษัท อินทัช โฮลดิ้งส์ จำกัด (มหาชน)

Delta has been on the THSI since 2016 and won two Thailand Sustainability Investment Awards from the SET. The SET defines companies that embrace risk management, supply chain management and innovation together with responsibility for ESG aspects as sustainable.

## Thaipat Institute's ESG100 Universe



Delta Electronics (Thailand) Public Company Limited is one of 100 best-performing public listed companies in the Thaipat

Institute's ESG100 Universe for the 4th consecutive year. Founded in 1999, Thaipat is a leading advocate in Thailand's corporate responsibility and sustainability movement. Delta is one of nine companies in the 2018 ESG100 Universe's technology sector recognized for outstanding performance in Environmental, Social and Governance (ESG)..

## Excellent Corporate Governance Disclosure



Delta Electronics (Thailand) PCL. retained its excellent score in the Corporate Governance Report of Thai Listed Companies (CGR) 2018. The Thai Institute of Directors Association (Thai IOD), with support from the Stock Exchange of Thailand (SET), conducts the Corporate Governance Report (CGR). In 2018, CGR assessed 657 companies with an average score of 81%, the highest since the project's launch in 2001. The report classified the companies into six groups according to their corporate governance scores. The top five groups of companies have scores over 50% and one to five National Corporate Governance Committee logos to signify level of recognition. Delta is one of the 142 companies, 22% of all assessed companies, to score 90% or above with five logos and an "Excellent" score.

## Prime Minister's Industry Award 2018



Delta Electronics (Thailand) PCL. won the Prime Minister's Industry Award 2018 in the two new award categories: Potential Industry and the Corporate Social Responsibility (CSR). H.E. General Prayut Chan-o-cha the Prime Minister of Thailand presented

the awards to Mr. Hsieh Shen-yen, Delta President, and Mr. Anusorn Muttaraid, Delta Executive Director.

The CSR category supports environment-friendly and socially responsible efforts among factories to ensure Thailand's industrial sector for ISO 26000: Social Responsibility. This is the fifth year for Delta to win the Prime Minister's Industry Award. The company has won the award in many categories including Productivity, Quality Management and Energy Management in 1995 and 2010 to 2012. In 2012, Delta won the Prime Minister's Best Industry Award which is the highest honor above all other Prime Minister's Industry Award categories.

## Sustainability Award and THSI Award 2018



Delta Electronics (Thailand) PCL. received SET) Outstanding Sustainability Award and the Thailand Sustainability Investment (THSI) 2018 Award at the SET Sustainability Awards 2018.

Delta is among 15 SET-listed companies to receive the Outstanding Sustainability Award and is in the category of companies with a market capitalization between 30,000-100 billion Baht. The award selection process leverages the SET's

sustainability assessment system to provide a reliable reference for investors seeking long-term returns from companies with strong Sustainable Development practices. This is the fourth year for Delta to receive the THSI Award, which recognizes organizations with excellent stock performance and exemplary business practices based on the key SD principles including environmental, social and governance (ESG) aspects.

## Sustainability Report Award 2018



represented Delta to receive the award at the conference.

Delta Electronics (Thailand) PCL. was awarded the Sustainability Report Award 2018 with a "Recognition" level at the CSR Club Conference 2018 held at the Stock Exchange of Thailand. Ms. Aonthip Aorthong, Delta Senior Executive of Sustainable Development,

CSR Club, Thai Listed Companies Association, the SEC and the Thaipat Institute as the event organizers aim to leverage the conference and award to drive development in Thailand's capital market and economy while motivating listed companies to implement CSR, sustainability and good governance that is in line with the UN Sustainable Development Goals.

## Thailand Energy Award 2018



Pitisook Chitkasem, Delta Plant Administration Director, received the award in a ceremony organized by the Ministry of Energy.

In 2018, the Delta Energy Management System team's rooftop solar power project at Delta Plant in Chachoengsao met the rigorous TEA award criteria. This is the third year for Delta to

win the prestigious award. Delta previously won the TEA in 2013 and 2017 for its LEED green building certified headquarters in Samutprakarn.

In addition, the Delta Energy Management System DIAEnergie and Delta SCADA solutions help the managers monitor and analyze energy consumption in real time and manage energy saving in all its facilities.

## Two Awards at Thailand Kaizen Awards 2018



Delta Electronics (Thailand) PCL. received one Silver Award in Automation Kaizen and one Bronze Award in Project Kaizen at the Thailand Kaizen Award 2018, in BITEC Convention Center, Bangkok.

These awards recognize the company's constant efforts to enhance performance and efficiency while reducing cost and waste. One of Delta's Kaizen Award projects was the Automatic Carton Box Folding Machine Project. This project improved productivity by 56.86% by reducing processes and improving work efficiency and quality. Another Kaizen Award project was the "Smart Automatic Assembly" Project. This project reduced missing error from a monthly average of 8,000 DPPM (Defect Part Per Million) to a zero DPPM. Both Kaizen projects boosted Delta's overall efforts to control product defects and waste while increasing cost savings.

Stay connected

for more information : )



## Our Commitment

Delta Electronics (Thailand) PCL. publicly commits to conducting business based on these Corporate Social Responsibility (CSR) policy and practices. Delta has always conducted our business in the spirit of Sustainable Development (SD) and CSR. The company's mission statement, "To provide innovative, clean and energy-efficient solutions for a better tomorrow", is an apt reflection of how important SD and CSR are in every aspect of our business practice.

For this reason, Delta's SD Strategy aligns the company's mission statement with the Environmental, Social and Governance (ESG) aspects that form the backbones of SD and CSR. The company considers SD as the only way to do business without exception. To reinforce commitment at every level to the company's mission statement, Delta developed the brand promise- "Smarter. Greener. Together." Each word in this brand promise corresponds to the key materiality issues for our company: Innovation, Eco-efficient Operation and Partnership respectively. With this in mind, Delta continues to set SD initiatives and roadmap that aim to deliver added value to our stakeholders while ensuring sustainability in all three ESG aspects and thus create a better world.

The company believes a sustainable business not only performs well for stakeholders but also contributes in every capacity, in direct and indirect ways, to forge a better tomorrow for the world.

If you have comments or suggestions to make about Delta's CSR & Ethics, please contact us through [det.sd@deltathailand.com](mailto:det.sd@deltathailand.com)

## "Enable added values for the stakeholders through smarter and greener business"

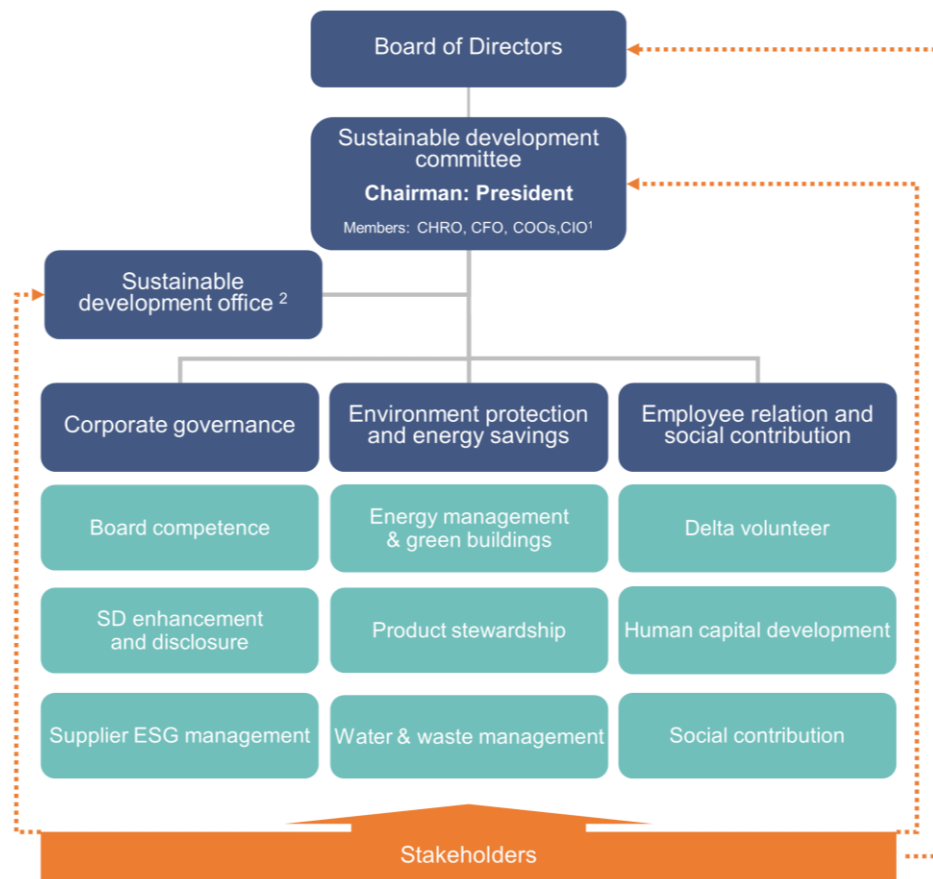


- Create company value and enhance shareholder value
- Invest in innovation and research, develop intellectual property rights, and devote ourselves to the progress of human culture and technology, the development of society and the economy, as well as the sustainable development of the Earth and its environment.
- Develop environmentally-friendly, energy saving products and implement sound practices to reduce our impact on the environment to fulfill customer satisfaction.
- Provide employees with a safe and healthy work environment where they can live up to their full potential in return for reasonable remuneration and benefits.
- Promote CSR ideals and practices throughout our supply chain and work together for better performance.
- All executives shall extend their collaboration and promote their staff members to fulfill these policies successfully.



Delta Thailand has continued improving its products, processes and business models to increase productivity and generate profits while reducing costs. The company commits to providing the best return to its stakeholders and we receive local, national and international honors for outstanding performance. Sustainable growth in the ever-changing business environment to meet global needs is necessary for the company in the long-term. Delta is integrating sustainable development strategies with our business strategies. We focus on product development and continuous CSR in our business processes to address emerging risks. To achieve our strategic goal while promoting value in the value chain, Delta is responding to three key core company ideals: Smarter. Greener. Together. and our Mission Statement. Since 2004, every employee bases their daily operations on our core company concepts which form the DNA of Delta culture and drive our social progress and effective responses to change. In 2015, Delta set targets to increase green revenue from its products and solutions portfolio while increasing energy efficiency to up to 30 percent of total revenue by 2023. These products and solutions areas include Solar Energy, Datacenter and Industrial Automation systems that respond to the needs of businesses and the wider community. With the growth of valuable business opportunities in the past 20 years, Delta's energy efficiency products and solutions rose 6.37% from 2015 when this amount of revenue have acknowledged. Finally Delta's green revenue account for 28% of the company's total revenue in 2018.

## Sustainable Development Organization



Note:

1. Since IT security and on-line platforms does matter to corporate strategy communication, Delta has include Chief Information Technology Officer (CIO) into its SD Committee members.
2. Sustainable Development organization body officially established in 2018.

According to [ISO 26000 guideline](#), Delta Electronics (Thailand) PCL. has a sustainable development organization for the full implementation of our Global Sustainability Development Strategy. The main body in the organization is the SD Committee which includes the company President, Chief Human Resource Officer (CHRO), Chief Financial Officer (CFO) and Chief Operations Officer (COO). The SD Committee reviews and monitors each CSR project, at periodic meetings, according to project-specific standards.

In 2018, the company realized that information technology and information security play significant roles in facilitating sustainable development and transparency, Chief Information Technology Officer had join Delta Sustainable Development Committee. With the CIO's support, on-line platforms for stakeholder engagement and data collections had developed with the right technologies and information security practices.

The SD Committee secretary proposes benchmarking procedures for the company's CSR projects and from time to time communicates the global sustainable development practices to the committee for their reference. The committee secretary is responsible to arrange quarterly CSR meetings to inform the SD Committee and operational leaders on the progress of each company CSR project. In addition, the committee secretary will follow-up on and compile ESG risk, critical concern and the results of each project in an annual report to the Board of Directors.

The CSR target fields form three categories: Corporate Governance; Environmental Protection and Energy Saving; and Employee Relation and Social Contribution. Each category has relevant directors and managers who define key performance indicators (KPI), set up specific achievement goals and take responsibility for the project's progress and on-time execution as per the company's policy and relevant standard requirements. Finally, Delta publicly discloses its sustainable development performance on annual basis at <https://www.deltathailand.com/en/download-sd-report>.

# Towards Sustainable Development Goals

From a broader business perspective, this dedication to CSR ideals makes Delta a true global citizen. Since Mr. Dick Hsieh, President, delivered Delta Thailand's Sustainable Development Goals to business partners and the company's personnel in Delta Annual Partner Meeting dated 28 December 2016, awareness and various forms of collaboration in Delta's value chain increasingly matter.

In 2017, Delta realized its potential to response to 6 major goals which aim to reduce disparities in society. The UN goals we voluntary commit to include SDG4 to promote quality education, SDG7 to deliver affordable clean energy, SDG9 to develop industry infrastructure, SDG12 to have responsible resource consumption and operations, SDG13 to respond to Climate Change and SDG 17 to forge Partnerships to Achieve Sustainable Goals.



Ms. Aonthip Aorthong, SD Senior Executive, at the UN SDG7 Conference, Bangkok on February 23, 2018



Inclusive and equitable quality education, relevant skills, including technical and vocational skills, updated knowledge leading to decent jobs which reduce inequality in the society.

Higher opportunity from quality education help ones to access the developing infrastructure in the changing world. Delta promotes education and life-long learning by promoting;

- 1.) basic and STEM education,
- 2.) environment education,
- 3.) talent cultivation mechanism
- 4.) experience-based learning

Finally, life-long learning will be a noble pursuit that will keep ones healthy life even after retirement.



Constructing a reliable and sustainable clean energy system is one of the global focus.

Delta dedicates developing solar power and renewable energy solutions, and discovering new business opportunity from these green solutions. Delta also provides affordable renewable energy and industrial automation solutions for leading research institutions to extend affordability opportunity to access clean and modern energy in rural areas and developing countries.



Accelerating industrial innovation and assisting in the construction of resilient infrastructure are the best solutions for companies facing the dual pressure of climate change and sustainable development.

Delta has implemented and internal incentive system to continuously accumulate innovative energy-saving solutions for global customers. It applications include smart manufacturing and modal shift transportation to reduce carbon in logistics process.



Sustainable consumption and production are the basis for sustainable business operations. Delta upholds its mission "To provide innovative, clean and energy efficient solutions for a better tomorrow".

The company has implemented sustainable consumption and production into daily operations through promoting eco-efficient operation measures, procurement localization, circular economy enhancement in supply chain, green building promotion and green life-style throughout the organization.



Property responding to climate change and its impact, and taking countermeasures are a major challenges for the company's sustainable business strategy.

Delta response to climate risk by adaptation and mitigation, and continue to identify climate change opportunities. In addition, Delta uses "COP21", "Carbon Footprint for Organization (CFO) C(CFO)", "voluntary carbon reduction scheme (LESS)" and "Carbon Disclosure Project (CDP)" and participation in climate change-related policy as strategies to carry in-side-out strong action.



As global citizen, Delta participated in global partnerships to help activate sustainable development. In business process, Delta enhance smarter and greener value chain through various approaches of communication to our stakeholders.

Delta participates in national and international sessions on climate change and sustainable development. We collaborate with leading universities and institution to develop essential infrastructures for greener and inclusive future. The company also share our knowledge and practices with business and social sectors to create broader greener impact continuously.

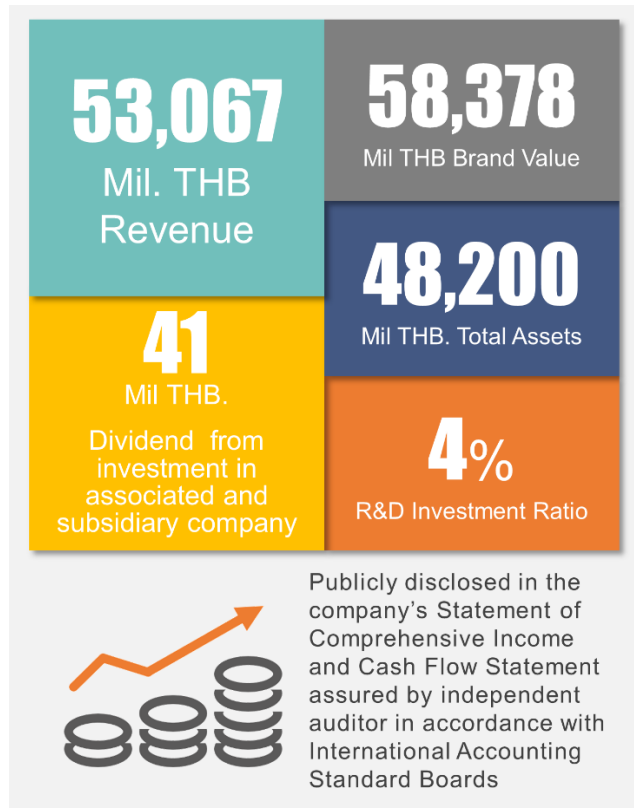


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การประชุมสามัญผู้ถือหุ้นประจำปี  
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# Corporate Governance



# Corporate Governance



Corporate governance systems ensure that a company is transparently managed in the interests of shareholders (including minority shareholders). On the one hand this includes checks and balances that enable the Board of Directors to have appropriate control and oversight corporate-wide responsibilities.

## Board Competence

The [Board of Directors](#) (BOD) is the key driver in developing the company's corporate governance to enable added values for Delta business. To enhance BOD's competence, Delta has the policy to encourage directors, executives and the company secretary to participate training involving good corporate governance at least once a year.

The company organizes internal and encourage the BOD members to participate external training by relevant institutions such as the SET, the SEC and the Thai Institute of Directors Association (IOD). In 2018, Mr Anusorn Muttaraid, Executive directors, attended Top Executives Program (Class of 27th) organized by Capital Market Academy (CMA). The course consists of 6 major modules include Economy and Capital Market Landscape, Capital Market Mechanism, Technology and Innovation, Current Issues for Capital Market Development, Sustainability and Leadership which are key mechanism for effective sustainability development

## Selection of Directors








The Board of Directors assigns the [Nomination and Compensation Committee](#) (NCC) to search, select and nominate qualified candidates to be a director or member of related committees. The committee member selection have made regardless of gender, race and nationality based on

whether the candidate is knowledgeable and experienced in areas such as accounting, finance, management, strategy and possesses individual skills and expertise in line with the company's business and strategies. In addition, the NCC also consider any committee's association of social group to ensure none of them is membership of under-represented social groups, cross-shareholding with suppliers

The company has prepared a skill matrix to define the requirements for members of its Board of Directors to aid in the Board nomination process. To ensure that selection of Board of Directors is fair, Delta commits to basic human rights principles including gender equality. In April 2018, one female director with experience in finance, accounting and tax has on-boarded. This is to ensure the achievement on company's objectives Board diversity and a solid company structure with good corporate governance standards. Each of the nine directors possesses knowledge and expertise in various professional disciplines that are in-line with the company's corporate governance policies and cover all aspects of sustainable growth.

In 2018 Annual General Meeting, the [company consult our shareholders](#) to consider and approve the appointment of directors to replace the directors who will be retired by rotation. Resolution in this agenda shall be approved by the majority votes of the shareholders attending the meeting and casting their votes. Finally, appointment of three directors has approved with 98.6% score in average.

## Board of Directors competence matrix

Board of director's qualification and competence (as of 31 December 2018)		Unit	Total / Average	 Mr. Ng Kong Meng (James)	 Mr. Hsieh Shen-Yen (Dick)	 Mr. Wang Ming-cheng (Stronger)	 Mr. Anusorn Muttaraid	 Mr. Boonsak Chiempricha	 Mr. Chu Chih-yuan (Roger)	 Mr. Hsieh Heng-hsien (Henry)	 Mrs. Tipaw an Chayutimand	 Mr. Witoon Simachokdee
Basic information	Type of director	-		Non-executive (Chairman)	Executive (President)	Non-executive	Executive	Independent	Independent	Non-executive	Independent	Independent
	Age	years	67	72	67	73	65	70	72	55	61	65
	Date of Election by the Annual General Meeting	-	-	<a href="#">2-Apr-18</a>	<a href="#">5-Apr-16</a>	<a href="#">31-Mar-17</a>	<a href="#">31-Mar-17</a>	<a href="#">5-Apr-16</a>	<a href="#">2-Apr-18</a>	<a href="#">31-Mar-17</a>	<a href="#">2-Apr-18</a>	<a href="#">2-Apr-18</a>
	Tenure	years	1.5	0.8	2.8	1.8	1.8	2.8	0.8	1.8	0.8	0.8
	Delta's share holding	shares	21,000	None	None	None	None	21,000	None	None	None	None
	% of held shares to paid up capital	%	0.0017%	0%	0%	0%	0%	0.0017%	0%	0%	0%	0%
Education background	Finance	-	5	▲				▲	▲		▲	▲
	Business	-	3		▲			▲				▲
	Engineering	-	4	▲		▲				▲		▲
	Humanities	-	0									
	Science & Technology	-	2		▲		▲					
Experience/Knowledge background	Solution Business	-	6	▲	▲		▲		▲	▲		▲
	International Business Management	-	7	▲	▲		▲	▲		▲	▲	▲
	Local law/ Tax Compliance	-	8	▲	▲	▲	▲	▲		▲	▲	▲
	Human resources & Talent Development	-	7	▲	▲	▲	▲	▲		▲		▲
	Public and Investor Relationship Communication	-	3	▲			▲				▲	
	Supply Chain Management	-	5	▲	▲	▲		▲		▲		
	Sustainable Development	-	7	▲	▲		▲	▲			▲	▲
Experience in Global Industry Classification (GICs) Level 1 Sectors	Energy	-	7	▲	▲	▲	▲			▲	▲	▲
	Material	-	7	▲	▲	▲	▲		▲	▲		▲
	Industrials	-	9	▲	▲	▲	▲	▲	▲	▲	▲	▲
	Consumer Discretionary	-	7	▲	▲	▲	▲			▲	▲	▲
	Consumer Staples	-	1					▲				
	Healthcare	-	0									
	Financials	-	5					▲	▲	▲	▲	▲
	Information technology	-	8	▲	▲	▲	▲	▲	▲	▲	▲	
	Communication service	-	0									
	Utilities	-	5	▲	▲	▲	▲					▲
	Real Estate	-	0									

- In 2018 none of Delta's board of directors possessed cross-board membership, cross-shareholding with suppliers and other stakeholders, existence of controlling shareholders. For more information on the board of directors' skill and experience please find [http://www.deltathailand.com/about\\_board.php](http://www.deltathailand.com/about_board.php).
- Delta's directors and executives have equal voting right to other shareholders said "one share one vote"
- Experience in Global Industry Classification (GICs) Level 1 has objectively evaluate by Sustainable Development Committee based on Profile of Board of Directors published at [Annual Report](#) page 60-65.
- Delta has no explicit requirements indicating that the Board of director, CEO and/or other executive managers are required to build up share ownership equivalent to a specific multiple of their annual base salary. However, the Board of director, CEO and/or other executive managers are required to disclose information on their personal securities holdings (including that of their spouses and minor children) to the Office of the Securities and Exchange Commission. Find [CG Policy](#) page 13.

## Structure of the BOD

The Board of Directors comprises nine directors in a one-tier structure. With one female director who is onboard in April 2018, Four of the Board members are independent directors, three are non-executive directors and two are executive directors. The target number of independent directors, according to the company's practices of the Board of Directors, is no less than one-third of the total number of board members. The Board must have at least three independent directors according to the regulations of the Stock Exchange Commission and the Stock Exchange of Thailand. Explicit definition of the "independence" publishes on <https://bit.ly/2OYVYe3> page 17-18.

## Roles and Responsibilities

Delta Board of Directors is responsible to decide, give directions and supervise effective decision-making processes to facilitate the company's success in economic, social and environment areas.

The company has the policy to separate the roles and responsibilities of the Chairman the Board and the President. Different individuals must hold these two positions to enhance management accountability and transparency. The Board plays its role to setting purpose, values, and strategy and assigns the President to manage the day-to-day operations according to defined duties and responsibilities guidelines. Find [Annual Report](#) page 66-68 for roles and responsibilities in setting purpose, values and strategy.

## Board of Directors' Authorization

The Board of Directors can authorize matters under their scope of authority stipulated by law, the Company's Articles of Association and the shareholders' meeting resolutions. Such matters include defining and reviewing corporate vision, operating strategies, operating plans, risk management policy, annual budget and business plans, and medium-term business plans. The Board will also define the company's target operating results and follow up by appraising operating results to ensure they are in line with plans. The Board oversees capital expenditure, mergers and acquisitions, corporate spin-offs, and joint venture deals.

## Board of Directors Performance Assessment

The Board arranges a yearly self-assessment for the Board of Directors as follows.

1. Group self-assessment for the entire Board of Directors
2. Individual self-assessment of the Board of Directors members



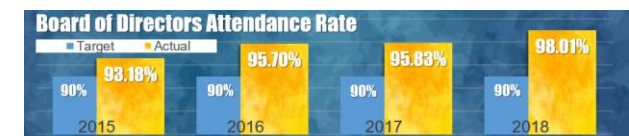
Areas of assessment include Board duties, Board structural composition and individual member's qualifications, job performance, professional development and teamwork. Other areas of member's assessment are

meeting attendance, general knowledge and expertise as well as proactive action in areas of responsibility. After the assessments, the evaluation forms will be submitted to the Company Secretary for tabulation and the results will be presented to the NCC with action plans to address the gaps, if any, for deliberation and onward submission to the Board.

In 2018, the Board had 99% an excellent group and 100% individual member performance score. The Board of Directors acknowledged the results of both group and individual level assessments and discussed possible areas for improvement.

## BOD Meeting

Board meetings are conducted at least once every quarter to review the company's business and ESG-related performance and discuss important strategic issues including their risk and opportunity. According to the Corporate Governance Policy, the minimum attendance rate for every Board of Director member is 90%.



The independent directors' service term is limited to a maximum of nine years or three consecutive terms. Appointed directors cannot hold a director position in over three companies listed on the Stock Exchange of Thailand. Since 2017, it has agreed among the meeting that every Board member require a minimum meeting attendance rate of at least 90% for good governance. In 2018, six meetings had held with an average attendance rate of 98.01%.

## Sub-Committee

In addition to their roles and responsibility as the nature of Delta business, the Board of Directors appoints sub-committees to help study, deliberate and give opinions on ESG matters. Presently, there are four sub-committees under the Board of Directors with the Executive Committee, Audit Committee, Nomination and Compensation Committee and Corporate Governance Committee. There are two committee under the President with Sustainable Development Committee and Risk Management Committee.

### Executive Committee

The Executive Committee of the company consists of five members to operate and manage the business of the company in compliance with company's objectives, Memorandum of Association, policies, regulations, notifications, order as well as the resolution of the Board of Directors. The Committee also establishes policies, business plan, directions, strategies, budget and the main organization structure and authority of each department within the company including the organization chart in order to propose to the Board of Directors for its consideration and approval. Besides, the Committee monitors and follows up the result of the operation of the company to be in accordance with the policies.

In 2018, the committee assigned Ms. Aruwan Sangrungsarun, CFO, to attend Thai Listed Company Association session, Impact of new financial reporting standards on revenue from contracts made with customers (TFRS 15)

and lease agreements (TFRS 16) on the preparation of financial reports of listed companies. The course aims to prepare listed companies to plan for the right response and reporting changes in financial reporting standards regarding financial instruments.

### Audit Committee

The Audit Committee of the company consists of three members and all the members are independent directors. The Committee reviews the company's financial reporting and consider the capability and independence of an external auditor, review that the company complies to the law on securities and exchange, the regulations of the SET and other laws related to the company business and do any other matters assigned by the Board of Directors. The service term of an independent director is no longer than 9 years or no more 3 consecutive terms and qualifications and responsibilities of the Committee as prescribed by the Stock Exchange of Thailand.

### Nomination and Compensation Committee

This Committee consists of three members, two independent directors and one executive director to review the remuneration policy and determine the remuneration of the directors of the company and members of sub-committee. Up to 2018, there is no claw back provision nor deferred share policy. The Committee also define the qualifications, structure, size and composition of the Board

member and attracting qualified candidates for Board of Directors' consideration. The Term of office shall follow the Annual Director Election.

The Board of Directors assigns the NCC to evaluate the President's Key Performance Indicators (KPI). The NCC works together with the President to set the President's KPI with consideration to his/her role as the Chairman of the Sustainable Development Committee. The President's KPI covers economic, environmental and social aspect which aligns with the company's sustainable development targets such as revenue, profit, return on equity, regional business, training and development, social benefit optimization and environmental impact reduction performance. With variable performance considered, President and other executives' deferred bonus is paid out in April after which the income was earned for their January – December performance period. Find more detail from [remuneration policy](#) page 7.

On 2 April, 2018, remuneration of Chairman of the Board, non-Executive Director, executive director, independent director and Audit committee chairman had [100% approved by the company's shareholders](#) in its Annual general meeting. Finally, the Ratio of the annual total compensation for Delta President, Executive and management : total employees' wages and salary was reasonably determined. Finally, increment of President , executives and management; and employee was 8.6% per -14.7% respectively.

## Corporate Governance Committee

To systematically drive transparency among Delta Group, Corporate Governance Committee has set up in early 2019. The committee consists of three members, one non-executive director and two executive director. The Committee review whether the company's Corporate Governance Policy, [Code of Conduct](#) and Anti-Corruption Policy are appropriate, adequate and regular update. This includes overseeing of how to promote them to employees for clear understating and actual implementation.

## Risk Management Committee

Risk Management Committee is reporting to t consists of 10 members to delegate the risk management to their respective managers, develop and review strategic risk management plans, monitor and continuously improve risk management and annually and/or any time that is necessary to present a detailed report to the Board or to the Audit Committee. In 2018, 19 risks with 1 critical concern had communicated to the highest governance. In addition to consideration of impact and likelihood of the ESG-related risk in daily business process, emerging risk of air pollution in Bangkok and surrounding areas which will impact DET's operation, employees' health yet expose another business opportunity had reported to the BOD as well.

## Sustainable Development Committee



*In addition to periodical meeting, ESG issues are frequently discussed among Delta group through various on-line platform*

Sustainable Development Committee consists of four members to delegate sustainable development to respective managers, develop and review strategic sustainable development plans, monitor and continuously improve CSR-in-process and ESG-related initiatives and annually and/or any time that is necessary to present a detailed report to the Board of Director.

Since information technology and information security play significant roles in facilitating sustainable development and transparency, Chief Information

Technology Officer had join Delta Sustainable Development Committee. With the CIO's support, on-line platforms for both internal and external stakeholder engagement had developed with the right technologies and securities.

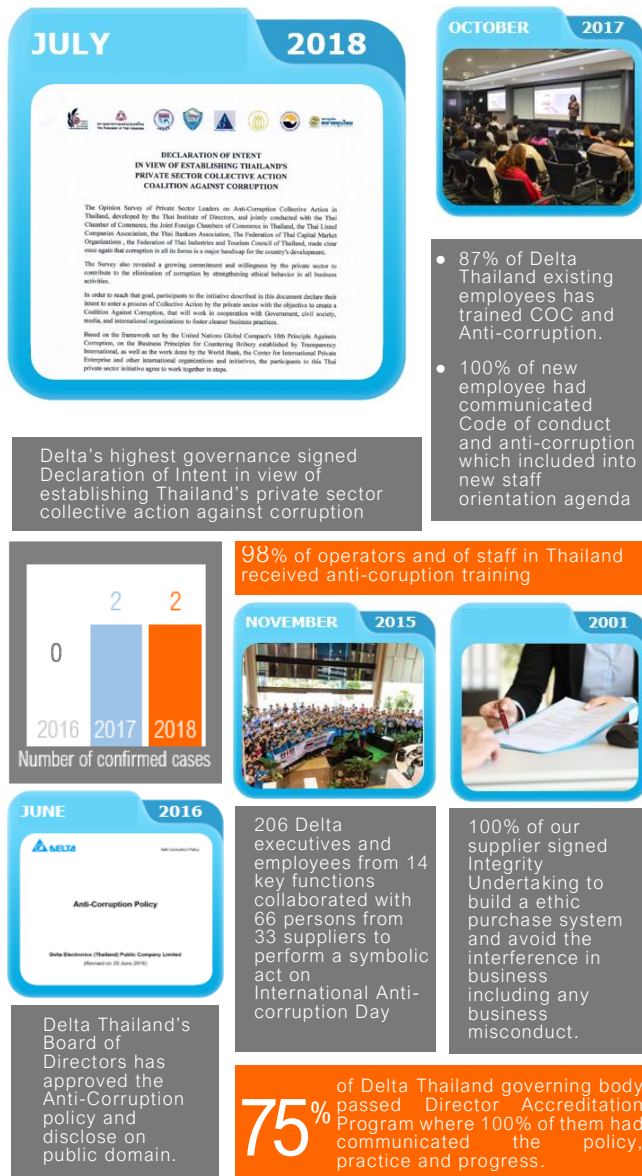
All the sub-committee agree to follow the Board of director's good practice where the sub-committees' member must have a minimum required meeting attendance rate of at least 90% for effective good governance. In 2018, sub-committees' attendance rate has reported as following.



*Performance of Delta's sub-committees in 2018*

Find more information of Delta's sub-committees at <https://bit.ly/2WiFuRo>

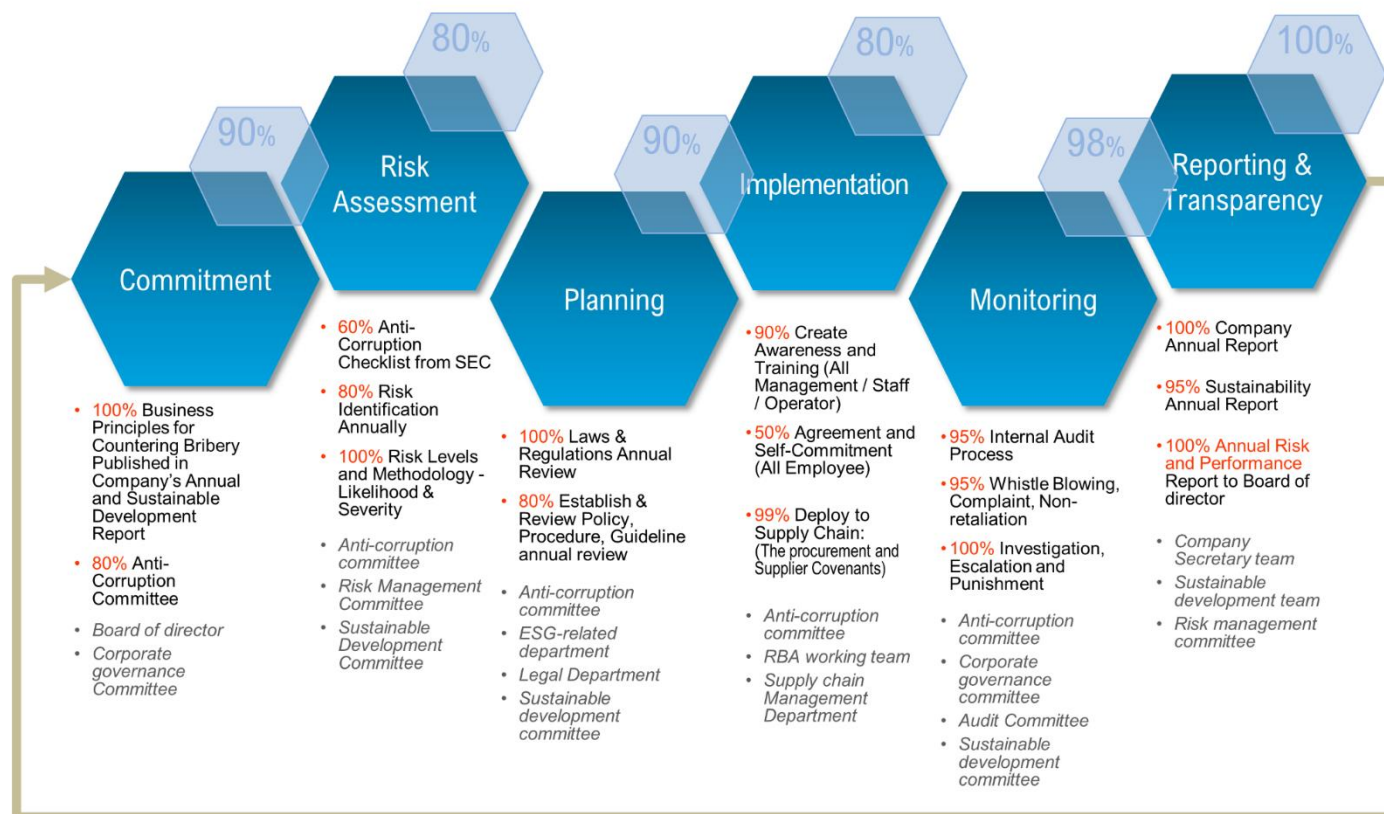
# Ensure Norm of Transparency



Delta realizes that corruption brings serious risks to the company's growth and competitiveness, unfair competition, human rights violation, employee's well-being and causes irreparable damage to our organization's reputation. Governments in Thailand and the countries where Delta operates have taken strong stances against corruption with countermeasures and anti-corruption campaigns. [Delta's group-wide anti-corruption policies](#) and [code of conduct](#) are in-line with global legislative and business trends that demand high levels of information transparency and accountability from companies. We believe corruption runs counter to Delta goals by increasing operational costs, reducing consumption efficiency, creating an unfair company culture and fostering mistrust among stakeholders. Robust anti-corruption policies are essential for our corporate culture and sustainability.

At risk likelihood 2/5 and impact level 3/5, the company applied the COSO Enterprise Risk Management to all business processes in its daily operations to mitigate corruption risk and ensure transparency and traceability in high-risk areas such as purchasing, resources use and reimbursement. In addition, Delta operates its business with political neutrality, not participating and siding to certain political party or influential political leader and not using the Company's capital, resource to support political parties, politicians directly or indirectly. Periodic 100% risk assessment and internal monitoring has placed as part of for countermeasures. In 2017-2018 the company does not make any contributions to or expenditures to political campaigns or organizations, lobbying, trade associations, tax-exempt entities, or other groups whose role is to influence political campaigns, anti-competitive behavior, violation of anti-trust and monopoly or public policy and legislation. Delta Thailand's list membership of association has report to the Sustainable development committee and publicly disclosed at <https://bit.ly/2W2yv9S>.

Delta Thailand's Board of Directors has approved the Anti-Corruption Policy which aim to clarify the company's goal to combat all forms of corruption had communicated to all the Board of Director and Executives based in Thailand headquarter since 2016 Delta has set a zero corruption goal to further develop our sustainability. The company commits to conducting its business with transparency and integrity. To enhance our stakeholders' confidence, Delta Thailand's policy prohibits directors, directors of sub-committees, management, personnel and related business partners of the company to act or consent to any form of corruption and all the form of bribery. Our corporate codes of conduct cover discrimination, confidentiality of information, conflicts of interest, antitrust/anti-competitive practices, money laundering and/or insider trading/dealing, environment, health and safety and whistleblowing.



## Transparency retention mechanism

In addition to due diligence by management, Delta aims to instill a strong consciousness of integrity among our employees. We establishes a common understanding of the standard of behavior expected of all employees as the most effective way to combat bribery and corruption. During October and November 2017, the company arranged employee training on the Code of Conduct and Anti-Corruption. 87% of Delta employees in Thailand has communicated accordingly. Among this 8,600 employees 10% is salary-based staff and another 90% is daily-waged employees. The mandatory course's training scope included Anti-Corruption as part of the Code of Conduct and covered risks our businesses may face such as bribery, gifts and hospitality. The Code of Conduct places an obligation on all

Delta employees to take responsibility for their personal conduct and work with colleagues cooperatively to establish a collaborative workplace where people are happy and proud to work.

To ensure integrity in its supply chain, Delta formed an agreement between its purchasing department and supplier in 2001. The Procurement and Supplier Covenants promotes a healthy procurement system that avoids the negative influence of human factors such as bribery or unwarranted returns on normal business. 100% of Delta's contracted global suppliers has communicated and signed this agreement to be qualified for business collaboration. To enhance anti-corruption operations, the company also seeks cooperation from suppliers not to send any gift/gratuity to company management, employees or their family member during New Year and other festive occasions.

## Key governance-related issues

### Major Connected Transactions

On August 1st, 2018 was one of Delta's stakeholder concern on the company business growth direction. Since the company received Letter of Intention from Delta Electronics International (Singapore) Pte. Ltd. ("DEISG") stating that they would like to make a Conditional Voluntary Tender Offer ("CVTO") to acquire all of the ordinary shares of the company in the aggregated number of 1,247,381,614 shares (as of the date of this notification) or the percentage of 100 of the total number of paid-up ordinary shares of the company or equivalent to 100 percent of its total voting rights, at the offering price of Baht 71 (seventy one) for each ordinary shares.

As of the date of this notification, DEISG does not hold any number of shares of the company and its Related Persons under Section 258 of the Securities and Exchange Act B.E. 2535 (as amended) ("Related Parties under Section 258") hold the number of 261,112,590 shares or the percentage of 20.93 of the total number of paid-up ordinary shares of the company; therefore, DEISG and its Related Parties under Section 258 will hold the total number of not exceeding 261,112,590 shares or totaling 20.93 percent of paid-up ordinary shares of the company.

Key chronicles of CVTO

*13 February 2019* : The company has been informed the accomplishment of the conditions percedent of the Conditional Voluntary Tender Offer from DEISG

*18 February 2019* : The company received announcement of intention to make a Tender Offer (From 247-3)

*22 February 2019* : The company received the Conditional Voluntary Tender Offer from (From 247-4). The Tender Offer period is from 26 February 2019 until 1 April 2019, a total of 25 business days, at the offer price of THB 71.00 per share.

*2 April 2019*: After the tender offer, DEISG acquired 534,479,306 shares (approximately a 42.85%) from the company. DEISG together with Delta Electronics, Inc and its subsidiaries hold a stake of 63.78% in the company.

### Tax assessment

On the contrary of the company and its' subsidiary's tax privilege reported in our [Annual Report](#) page 28, the company received tax assessment notice for the year 2008 from the Department of Revenue on 21 August 2018. The received notice approximately amounts to 49 million Baht and specific tax 4 million Baht (including penalties and surcharges). The company has submitted letter appealing the assessment to the Tax Appeal Committee of the Revenue Department and the appeal is currently under consideration by the Committee (See [Annual Report](#) page 178-179).

According to our [Tax Policy](#), Delta aims to be tax complied. The company has disclosed liabilities and provision from tax assessments under audited statement of financial position and its note to consolidated financial statement number 33.3.1 in our 2018 Annual Report page 119 and

178-180 respectively. However, the stated provision has not impact cost of goods sold, employee's compensation, shareholder's dividend or other business process.

### Complaints & whistleblowings

In February 2019 the Company Secretary compiled the result of the 2018 annual assessment and stakeholders' concerns of business ethic and transparency attained from whistleblowing channels. Two major complaints were reported to the Board of Directors as following:

Case#1: This case was received from the suggestion box located at Delta Thailand headquarter. The complaint was made by anonymous source who claimed Delta buyer received transfer money in his/her personal account. The request was made supposedly to assist in the purchasing process. The case was handled by Delta's Purchasing Director and Internal Auditor. However, after investigating all related parties and evidence, the complaint was not found to be true and the Delta employee involved was proven innocent. Though no legal nor disciplinary penalty was brought to this case, the Purchasing Director gave an official warning to both parties that stated if such a case ever happened, both the DET employee and business connection will be terminated according to company's Code of Business Conduct clause 8.2 (4).

Case# 2: This case was sent to the Delta Thailand President's e-mail address. The complaint was by anonymous source who claimed that one of Delta supervisors had received commission from a vendor to assist in the vendor's qualification approval process. After a detailed investigation process by the Chief Operations

Officer, Internal Auditor and appointed Working Team there was reasonable proof found to verify that the case was true. Hence, 10% of the ongoing business contract's payment was withheld from the vendor involved in the complaint. In addition, an official warning letter was filed to the vendor that stated if any such case is repeated then the related business contract will be immediately terminated (COC 7.4 (2)) As for the DET employee, his/her 2018 performance bonus or employee bonus was completely deducted and he/she was warned with dismissal if there is a repeat of this offence. (COC 8.2 (3))

In addition to these 2 cases, another reported case was regarding a personal conflict issue unrelated to the company's business. These three cases are internal disciplinary cases with no relation to public legal issues. Delta handles every complaint under its Protection of whistleblowers and Confidentiality Policy in the company's Anti-corruption Policy.

More details on company practice guidelines are on the company's website

<https://bit.ly/2WUFBIG>

## Our next move

Delta Thailand has voluntarily signed the Declaration of Intent in view of establishing Thailand's Private Sector Collective Action Against Corruption (CAC) on July 16, 2018.

Declaration is the first step in getting certified as CAC member. It formally communicates the intention of company to participate in the Coalition.

The Declaration also kicks off the 18-month deadline for companies to submit documents to CAC for Certification.

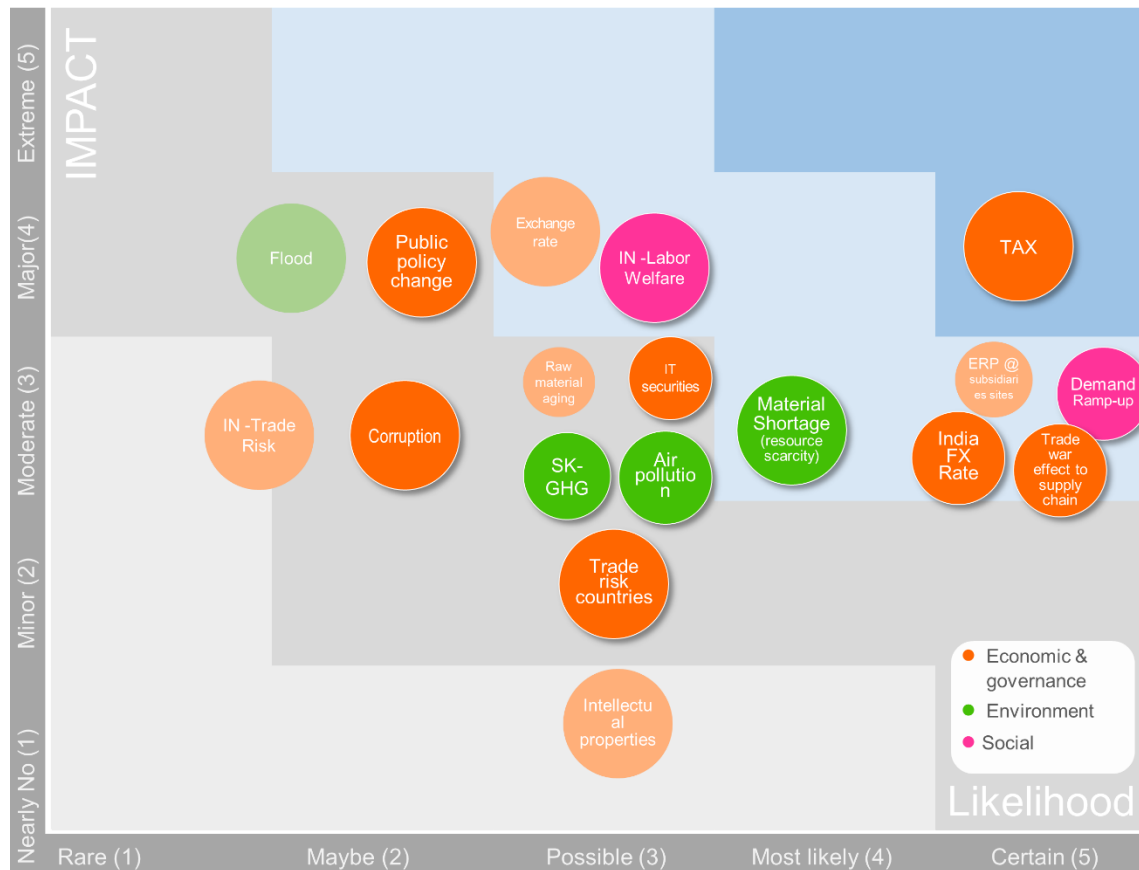
### Whistleblowing channels:

Delta realizes the importance of listening to all our related parties. We leverage input from all sources to ensure business integrity in the company that benefits all stakeholders. Delta will ensure fairness and provide protective measures to all complainants or whistleblowers who collaborate to report malpractice and corruption. We provide the following whistleblowing or complaint channels for both internal and external parties to report any cases of misconduct in ESG aspects

- Head of the employee's unit
- Head of HRA, Internal Audit, Legal Department or Company Secretary
- Electronic mailbox: [Whistleblow@deltathailand.com](mailto:Whistleblow@deltathailand.com)
- Suggestion box at Delta Thailand head office
- Opinion Box: PO Box 50, Bangpoo Samutprakarn 10280

Refer to our Anti-corruption Policy published on <https://goo.gl/ySUfWg>, confidentiality and anonymity will be ensured for whistleblowers. The results of anti-corruption activities will be reported to the Board.

## Seize the Risks



Since embarking on its ongoing sustainability journey, Delta Electronics (Thailand) relentlessly **exploit** emerging trends and impacts. To counter emerging risks, we take mitigating actions and create proactive strategies to bolster our company's long-term (impact over 3 years) resilience. We seek to manage risks through informed decision making, foresight and agility and to forge a business that will benefit society far into the future.

Delta Thailand's Risk Management Committee (RMC) reports risk management to the President. The risk and risk management result will be reported to Audit Committee or the Board at least 2 times a year. In 2018, RMC consolidated working teams' concerns from Delta Thailand group including Delta Thailand, India and Slovakia to report to the Board of Director on 18 February 2019. In addition to each risk impact and likelihood measurement. RMC also study the impact's life time which can be illustrated by the size of each plot.

Delta extends its coverage of risk management from business and operation risk to ESG-related issues. The status of the risks management in terms of tax management, public policy change, material scarcity in supply chain, information securities, transparency and corruption, trade war's effect, human rights management due to overtime working and air pollution risk to employee's occupational health and safety. Light color plots are risk

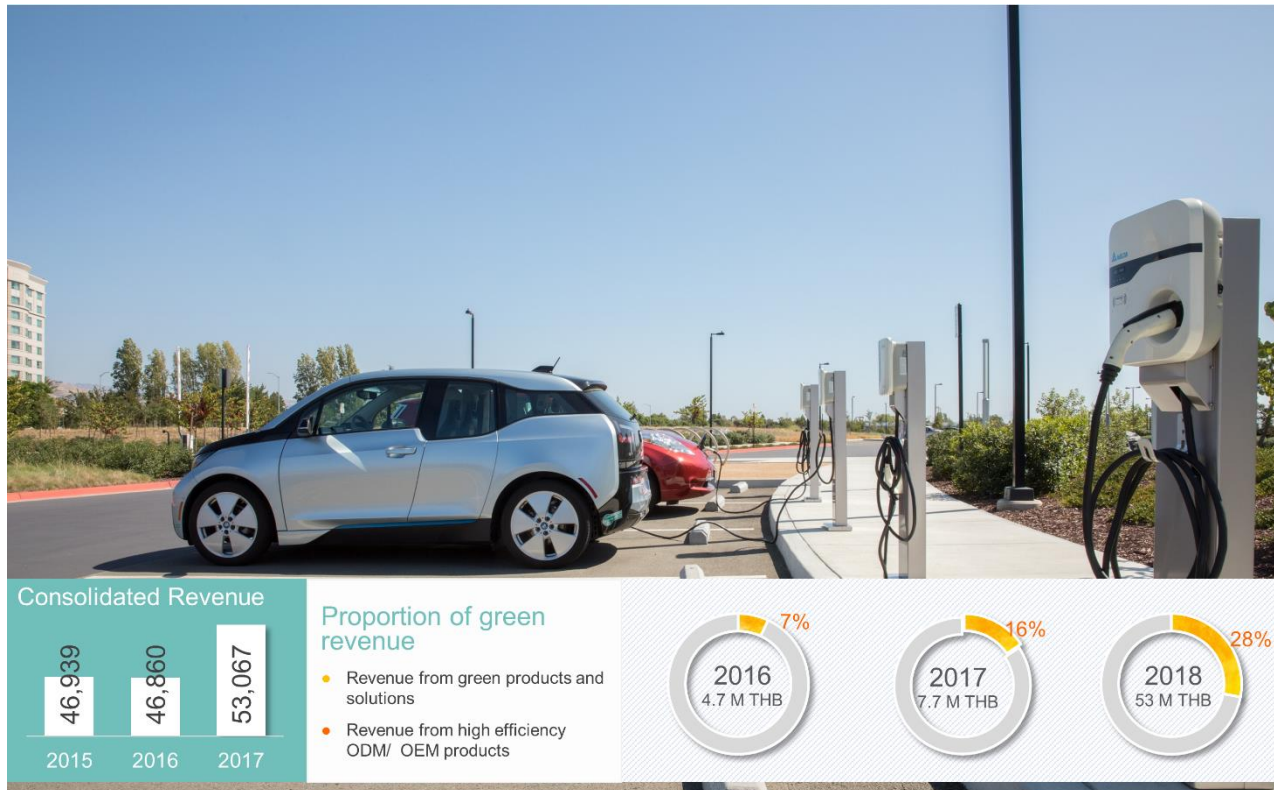
as nature of business have disclosed in 2018 [Annual Report](#) page 49-55.

From both internal and external stakeholder engagement, 2018 key mega trends which are potential to impact Delta's business in long-term has raised as following:

Emerging Risk	Raised issue	Delta material issue	Potential impact - Negative   + Positive   ? Unknown	Mitigating actions	Opportunity
Rapid urbanization and Climate change	<ul style="list-style-type: none"> <li>Demand ramp up</li> <li>Material (+manufacturing factor) shortage</li> <li>Air pollution</li> </ul>	<ul style="list-style-type: none"> <li><b>Eco-efficient operation</b></li> <li><b>Economic performance</b></li> <li><b>Innovation management</b></li> <li><b>Supply Chain management</b></li> <li><b>Norm of Transparency</b></li> <li><b>Occupational Health and Safety</b></li> </ul>	<ul style="list-style-type: none"> <li>+ Demand ramp-up in energy-efficient and clean energy products and solutions.</li> <li>- Increased in power demand</li> <li>- Increase in local electricity intensity</li> <li>- Increase in fossil fuel used to generate electricity</li> <li>- Higher production cost</li> <li>- Natural resource scramble</li> <li>- Flood way blockage</li> <li>- Customer's higher expectation on ESG-related information</li> <li>- ? Difference of governmental policies to face</li> <li>- ? Difference in supply and demand behavior</li> <li>- Operation lost time</li> <li>- Employee health and safety</li> </ul>	<ul style="list-style-type: none"> <li>Develop Supply chain in emerging market</li> <li>Energy intensity reduction projects</li> <li>Delta Smart Manufacturing</li> <li>Renewable energy generate from Delta solar roof top</li> <li>Eco-friendly and ethical supply chain</li> <li>Green product design</li> <li>Business contingency and recovery plan established</li> <li>Build up awareness of Energy and environment conservation</li> <li>Brand development to seize future market</li> <li>Review hazardous substance banned in production process</li> <li>Public disclosure of hazardous substance management policy, GHG inventor and CSR in supply chain information.</li> <li>Set up emergency and recovery plan</li> <li>Watch up meteorological and PM 2.5 statistics</li> <li>Utilize Delta Uno pollution sensor and <a href="#">Delremo</a>, green energy solutions, as key component to help OHSAS work.</li> <li>Expand GHG inventory coverage to subsidiary plant in Slovakia</li> </ul>	<ul style="list-style-type: none"> <li>Growth in Power Electronics, Automation and infrastructure solutions.</li> <li>Value-added products through substitute and recycled material development</li> <li>Growth in Power Electronics, Automation and infrastructure solutions.</li> <li>Realize new demand in pollution sensor products.</li> <li>More frequent customer and public sectors engagement on EV-relate and renewable energy product</li> </ul>
Shift in global economic power	<ul style="list-style-type: none"> <li>Public policy change</li> <li>Fluctuated exchange rate in subsidiary sites</li> <li>Trade war impact on operation, supply chain and customer finance performance</li> <li>Tax</li> <li>Corruption</li> </ul>	<ul style="list-style-type: none"> <li><b>Supply chain management</b></li> <li><b>Economic performance</b></li> <li><b>Norm of transparency</b></li> </ul>	<ul style="list-style-type: none"> <li>? High competition of supply chain in emerging market</li> <li>- Raw material scarcity</li> <li>- Intellectual information and confidentiality break-in effort</li> <li>? Difference of governmental policies to face</li> </ul>	<ul style="list-style-type: none"> <li>Boost up ethic in supply chain</li> <li>Systematic risk management</li> <li>Material localization</li> <li>Promote circular economic in supply chain</li> <li>Publicize supplier standard requirement</li> <li>Delta's presence in emerging markets</li> <li>Concentrate IT security policy and practice</li> </ul>	<ul style="list-style-type: none"> <li>Additional business opportunity in emerging market.</li> </ul>

Emerging Risk	Raised issue	Delta material issue	Potential impact - Negative   + Positive   ? Unknown	Mitigating actions	Opportunity
Shift in global economic power (Con't)			<ul style="list-style-type: none"> <li>? Difference in supply and demand behavior</li> <li>? More queries on ESG question from new investors in emerging market</li> </ul>	<ul style="list-style-type: none"> <li>Public disclosure of hazardous substance management policy, GHG inventor and CSR in supply chain information.</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>
Demographic and social change	<ul style="list-style-type: none"> <li>Labor welfare at subsidiary plants in India</li> </ul>	<ul style="list-style-type: none"> <li><b>Eco-efficient operation</b></li> <li><b>innovation management</b></li> </ul>	<ul style="list-style-type: none"> <li>- Skilled labor force shortage due to aging population and new industries flourishing (e.g. AI and programming)</li> <li>? Faster turnover of product life cycle.</li> <li>+ Higher expectation / requirements on responsible product &amp; services esp. in ESG aspect.</li> </ul>	<ul style="list-style-type: none"> <li>Delta's focus on automation and energy management solutions resolve aging workforce problems</li> <li>Maintain comparable research &amp; development infrastructure</li> <li>Green design &amp; green supply chain development</li> <li>On-line communication channel development</li> <li>Build up awareness of Energy conservation</li> <li>Brand development to seize future market</li> <li>Develop green supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Growth in Power Electronics, Automation and infrastructure solutions.</li> <li>Value-added products and solutions through eco-friendly supply chain.</li> </ul>
Technological breakthroughs		<ul style="list-style-type: none"> <li><b>Eco-efficient operation</b></li> <li><b>innovation maintaining</b></li> <li><b>Supply chain management</b></li> </ul>	<ul style="list-style-type: none"> <li>- IoT application to home appliances/ devices</li> <li>- Adoption of Industry 4.0</li> <li>- Information security : Hacking frequency increases</li> <li>+ Higher power and capacity demand for datacenters</li> <li>+ Higher expectation / requirements on responsible product &amp; services esp. in ESG aspect.</li> <li>? Faster turnover of product life cycle.</li> </ul>	<ul style="list-style-type: none"> <li>IT Security Standard and practice promotion.</li> <li>Delta SMART manufacturing and automation solutions</li> <li>Green design &amp; green supply chain development</li> <li>Public ESG info used for investment decision</li> <li>Build up awareness of Energy conservation</li> <li>Brand development to seize future market</li> <li>Maintain R&amp;D investment at approx. 5% to revenue</li> </ul>	<ul style="list-style-type: none"> <li>Growth in Power Electronics, Automation and infrastructure solutions.</li> </ul>

## Opportunity in Emerging Risks



To response to social needs in environment conservation while mitigate climate change impact, Delta has invested 100 million Baht in average since 2015 to make its operation greener. Meanwhile, the company maintains its research and development cost at approximately 4-5 percent of its consolidated revenue to develop smarter and greener products and solutions for the mentioned purpose

From previous emerging Since 2010 Delta has focused on “Power and Energy Optimization Products and Solutions”. These solutions businesses are growing and underpin our sustainable development strategy by responding to key emerging risks on a global scale. For example, the emergence of climate change was a powerful catalyst for increased innovation in our energy management and green solutions. In 2017, Delta divided its core business into three main categories: Power Electronics, Infrastructure, and Automation respectively. Compared to 2016, Delta's green revenue from

Infrastructure and Automation revenues represent steady growth in 2017.

Note :

- Green revenue consist of revenue from Electric vehicle products and solutions, Green and efficient energy solutions said renewable, EV charging, Data center, Industrial automation, Energy storage systems.
- The green revenue reported accordingly to the company performance breakdown by business group presented to the Board of director on 18 February 2019.



# Eco-efficient Operation

# Eco-friendly operation



Ms. Ophilia Kuo, Delta Secretary to Sustainability Development Committee, at the UN climate summit COP Katowice 2018

Proactive action to Climate change once again occurs in Delta Thailand's stakeholder interests (both internal and external) and risk matrix in 2018. SMOG or pollution fog situation in Bangkok and surrounding areas outstandingly demonstrates the impact of climate change. It is broadly discussed that such negative impact resulting from the growth of business especially manufacturing sector.

According Delta Thailand's Risk management report, climate change had been in our focus since 2012. At full score of 5, its likelihood and impact level was stable at 2 and 3 respectively. However, SMOG is the latest climate

change-related risk occurred at likelihood and impact level of 3 last year. With these 2 occurrences, raw material scarcity, energy intensity constraint, our employees and global citizen's health and safety will impact our operation.

## Proactive Response to Climate Change

To ensure our eco-efficient operation reduce negative impact on climate change, Delta learn from our stakeholder requirement, global best practices and utilize possible technologies to illustrate its brand promise; Smarter. Greener. Together, in our daily operation to mitigate climate change impact.

Delta aligned with [ISO 26000](#), [ISO 14001](#), Responsible Business Alliance code of conduct and Carbon Disclosure Project, UNGC principle 7 and 8 guidelines to reduce overall environmental footprint of companies. The company proactively plan and periodically measures its environment-related performances to seek for improvement in every process. With smarter and greener business process, mutual benefits for Delta, its stakeholders and world's environment will be inclusively enable in long-term.

## Environment Policy and Management System

Delta's founding mission is "to provide innovative, clean and energy efficient solutions for a better tomorrow". An eco-efficient operation requires continuous effort in reducing a business' environmental impact. Our environmental policy publicly published on <https://bit.ly/2K2g5EG> is showing our sincere attempt and partnership with global citizen to make a smarter and greener future.

With this practical management system, drive business operations on basis of the PDCA principle (Plan/ Do/ Check/ Action). The system allows us to cope with various contexts of quality, economic, social and environmental requirements and stakeholders' expectations, which employees at all the levels can continue applying as part of their daily activities. In 2018, there is no non-complied issues accordingly to our certified recognized standards listed as following

- ISO 26000:2010... Guidance on social Responsibility
- ISO50001...International Standard for energy management

- ISO9001:2015...International standard for quality management
- ISO 13485...Medical Devices Quality System
- ISO14001...International Standard of Environmental management System
- ISO14064-1...Standard of Management System for Quantification and Reporting of Greenhouse Gas Emissions
- ISO/IEC17025...Standard of quality laboratory system
- OHSAS 18001...Occupational Health and Safety Management System
- IATF16949...International Automotive Task Force
- TL9000...International Standard of quality management system for Telecommunications Industry
- IEC-61340-5-1 and Standards of Electrostatic Discharge Control Program ANSI / ESD S20.20
- ISO 27001...International Standard of Information Security management
- TS16949...Automotive Industry Standard

## Eco-friendly Design

Delta Thailand (DET) has been consistently investing around 5% (higher than industry's average) in R&D budget and will remain so in the coming years as can be seen in our Annual Report. The annual investment encompasses state of the art equipment, global talent sourcing and development, global R&D facilities enhancement and research activities. DET shall continue to collaborate with well-established universities to keep abreast of the latest technologies and in return provide our R&D expertise (from more than four countries) and training for the respective institutions in countries like Germany and Thailand. In

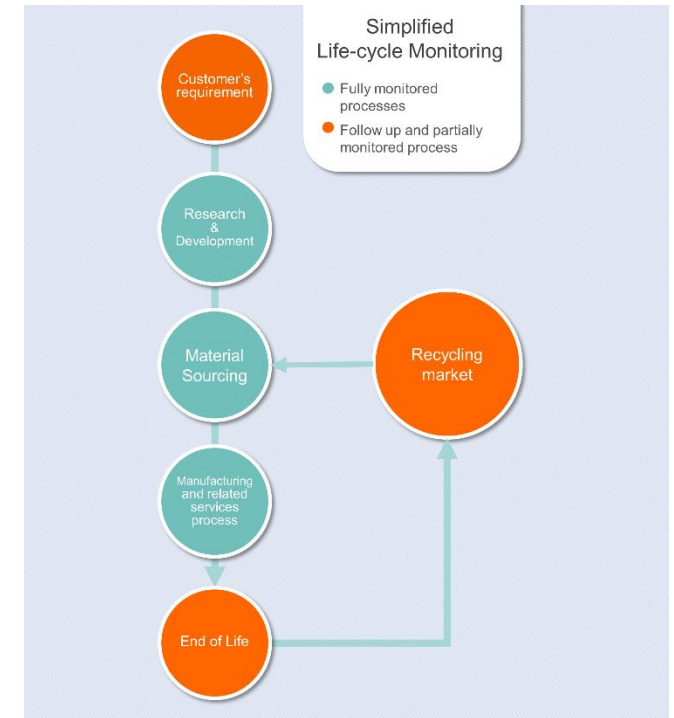
addition, with a healthy balance sheet, DET is constantly looking out for suitable M&A targets. The objective in M&A is not only about growing revenue but more importantly to seek out new perspective in business and product innovations from a healthy and compatible company.

To ensure innovation is in place Delta targets to

- 1) Launch market leading new technology every 2 years
- 2) Annual increase in power efficiency for the products
- 3) Continuously reduce carbon footprint in product development process
- 4) Maintain high R&D budget above industry average.

The success of new product development (item1,2) will increase the revenue of the Company. Sales growth is one of CEO's KPI to link with the executive compensation.

All Delta products comply with international safety standards or international environmental requirements. Products or product packaging are also labeled with conformity information in accordance with the environmental regulations of the target market, such as the EU RoHS and WEEE directives, and the China Measures for the Control of Pollution from Electronic Information Products. We also display environmental certification information such as US Energy Star and 80 PLUS on our products that are required by our customers.



The Life Cycle Assessment (LCA) is a green design approach that systemically analyzes the environmental impact of a product from material extraction, manufacturing, shipping, product use, and disposal. According to guidance of ISO 14040 international standard divided LCA into several key processes including the definition of the goal and scope, inventory analysis, and impact assessment and interpretation. Due to the complex nature of supply chain relationships in the electronics industry, Delta knows that a complete LCA will consume enormous amounts of time and resources. Delta has drawn on research by the Society of Environmental Toxicology and Chemistry (SETAC) on LCA methodology and adopted the Screening, Simplified and Streamlined LCA (SLCA) to

focus on the issues with the most significant environmental impact, such as GHG emissions, and reduced the amount of data that needs to be gathered. Additionally by using the Simplified Life Cycle assessment (SLCA) methodology, we can accurately identify design or process areas for improvement.

## Hazardous and Environment related substance reduction

Delta has implemented the Green Product Management (GPM) IT system based on the QC 080000 Hazardous Substance Process Management System. Apart from inspecting materials testing reports from suppliers, Delta manages parts/components based on their environment-related substance risk level to ensure the proper control of environment-related substances. Delta sites have also introduced lead-free processes and low-halogen materials to help customers develop greener and more eco-friendly products.

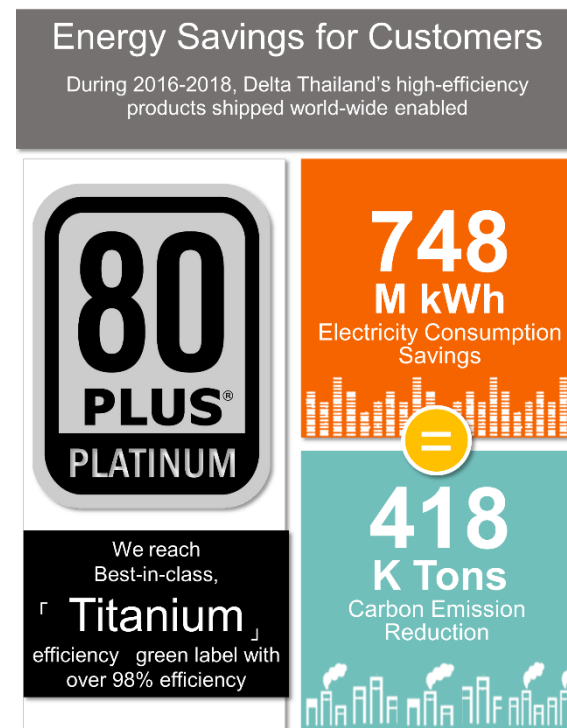
With regard to hazardous substances and chemical safety and control, Delta abides strictly to comprehensive sets of ERS (Environmental Related Substances) procedures and standards according to our [corporate-wide procedures-Management Standards for Environmental Related Substances \(Document No. 10000-0162\)](#) and ERS Management Procedure (Document No. 06-028). Up to 2018, 80 hazardous substances endanger our employee, users and environment had taken out from Delta's book of material.

The Management Standards for ERS (Document No. 10000-0162) is an exhaustive list of internationally banned



and controlled substances according to recognized standards. The standards include but not limited to the Regulation (EC) No. 1907/2006 - REACH concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) issued by the EU; the Directive 2011/65/EU (updated to Directive 2014/1/EU) for the restriction of use for certain hazardous substances (RoHS); the Regulation (EC) No. 842/2006 on certain fluorinated greenhouse gases. The ERS Management Procedure (Document No. 06-028) is an operational procedure to complement the Management Standards for ERS document so as to ensure that the substances and chemical listed inside the latter are closely managed and controlled according to internationally established procedures and methods.

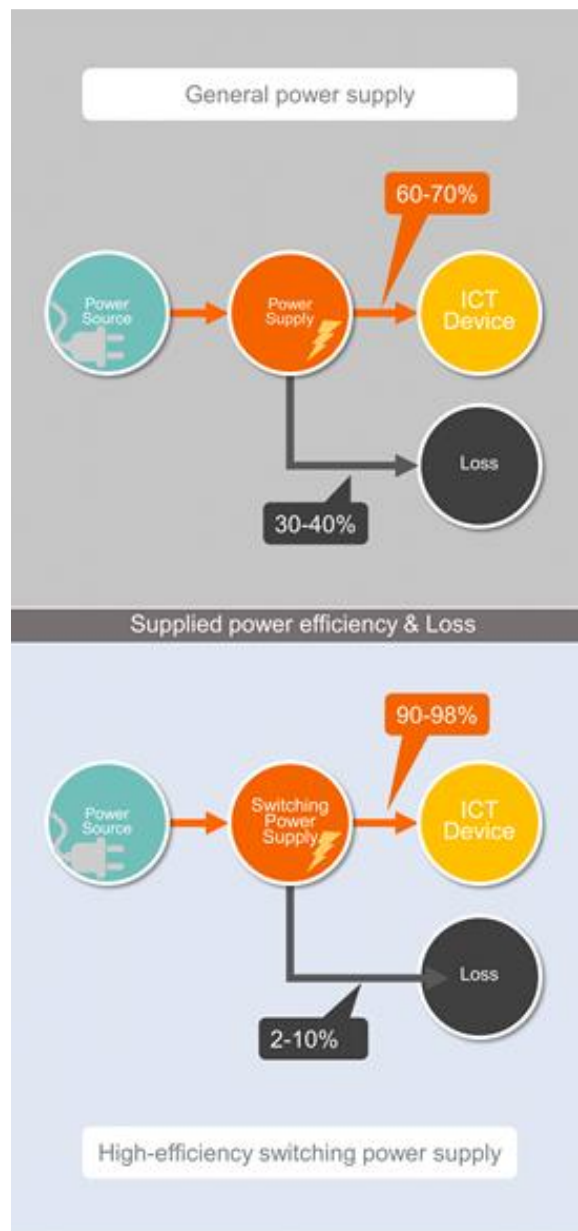
The ERS Management Procedure elaborates the many measures that must be taken to control the related substances starting from product design phase including subsequent design change and then vendor sourcing, vendor audits, incoming parts inspection, in-process check and complete manufacturing control until delivery. In order



to ensure adherence to the procedure by all related parties including R&D, procurement, quality assurance, production and many more, the ERS Management Procedure also identified the ERS Organization that is set up specifically to drive effective implementation and execution of the ERS monitoring and control efforts.

## Product carbon footprint

Product carbon footprint is the best example of the SLCA in action. Delta has now completed the carbon footprint inventory and verification of several Business-to-Business (B2B) products based on the PAS 2050 Product Carbon Footprint Standards issued by the British Standards Institution (BSI), including notebook adaptors, PV inverters



and DC fans. Delta is committed to developing new products that reduce product carbon footprint by

improving power efficiency and utilizing renewable energy sources. Delta targets to reduce 2% of product carbon footprint of the sampled products every 3 years. For example, our power supply units used in data centers have the highest efficiencies in the world to significantly reduce power loss. Furthermore, the energy storage system of Delta's bi-directional PV inverters has overcome the storage limitations of photovoltaic energy. In addition, Delta's wind power products are gradually entering the market with the goal of increasing the percentage of renewable energy sources used in global power generation.

## Product efficiency enhancement

For ICT devices and solutions, Energy efficiency is the frequently asked query raised by our customers. **It is not only the electricity and excessed heat management cost resulting from ICT solutions' 7/24 operating hours, but also the transmission stability when the source of electricity power switched to renewable sources** resulting from their environmental awareness. High efficiency power supplies that help to stabilize power distribution and generating power from renewable sources have become priorities for customers in ICT industry.

Delta is strongly committed to our mission "To provide innovative, clean and energy-efficient solutions for a better tomorrow" The company will continue to improve our product energy efficiency. Most of Delta's power management products have surpassed 92% energy efficiency, such as our PV inverters with a conversion

efficiency of over 98.7%, DC-DC converters for automotive with 96% efficiency, and telecom power supplies up to 98% efficiency.



**Tiger Q 3000W 54V AC/DC PSU**  
**Delta PN: ECD16010081**  
**Model Number: DTQ3000AN54C32**

- Best-in-class, "Titanium" efficiency
- AC to DC power module; 68mmwidth x 40mm height x 430mmlength.
- Wide AC input voltage range: 180 ~ 264Vac
- Hot-Plug Capable with ORing MOSFET
- Parallel operation via active current sharing approach
- Self-cooled with monitored, variable speed fans
- PSU meet RoHS 6/6 and marked with WEEE symbol
- I<sup>2</sup>C communication interface for control, programming and monitoring with PMBusprotocol
- Over-temperature, output over/under voltage and over current protection
- 8k Bytes of EEPROM for user information
- 2 Status LEDs: Input OK and D C output OK with fault signaling
- Safety-approved to I EC/EN 60950-1, IEC/EN 62368-1 and UL/CSA 62368-1 (2nd Ed.)



## Eco-labels and Eco-declarations

**Australia**

**We** help our global customers to make informed purchasing choices.

**America**

**Europe**

**Asia**

**POWER SUPPLY**  
开关电源 交换式电源供应器

P/N 料号 料號 : R0501-A0030-11  
DATE 日期 : 25082015

INPUT 输入 輸入  
AC100-240V 7.5A MAX. 47-63Hz

OUTPUT 输出 輸出  
+5VSB --- 1.0A MAX.  
+5V --- 40.0A MAX.  
+12V --- 33.0A MAX.

THE TOTAL COMBINED OUTPUT POWER OF THE  
+5V, +12V AND +5VSB SHOULD NOT EXCEED 600W.  
+5V 和 +12V 和 +5VSB 的组合输出不能超过 600W  
+5V 和 +12V 和 +5VSB 的组合输出不能超过 600W











台达电子工业股份有限公司  
DELTA ELECTRONICS  
MODEL 型号 型號 : TDP5-600FB A REV 版本 : 08F  
S/N 序号 : ABTT15352248  
MADE IN THAILAND 生产地: 泰国 / 生產國: 泰國  
製造商: 台达电子工业股份有限公司 仅适用于海拔 2000m 以下地区安全使用

1. Specification and clear product information is basically in English and Chinese which are used by over 46% of global citizen. (Ref: <https://bit.ly/2vPPQJg>)  
2. Product origins.  
3. Information of health, safety and environmental handling according to requirement of customers in various regions.  
4. Level of product efficiency helping our customer to create positive impact from less energy consumption  
5. Disposal instruction of the product  
6. Barcode display for data traceability of part/component source.  
7. Safe use of the product.  
8. Laboratory standard assurance.

Consequently from Delta Group participation in COP21 and various occurrences resulting from climate change; product Safety, health and environmental handling instruction on electronics products is in global regulators and customers focus. According to the company procedure of Product Regulatory Mark Application and Control Procedure (document no. 06-025), 100% Delta products declare related compliances with health, safety and environmental regulations to encourage our worldwide customers to make informed purchasing choice. Content, that particularly might produce an environmental or social impact, safe use of the product and proper disposal; for example, had significantly posted onto our products.

In 2010, Delta launched the “**EnergE**” program for rectifiers which offers a energy savings calculator on the product webpage to help customers understand the cost and energy conservation benefits they can achieve by using Delta rectifiers under different scenarios based on the type of power source, number of sites, average load per site and energy cost information. In addition, we added “**EnergE**” labels to our Rectifier product catalogs and products with energy efficiency of over 95%, 96%, and 97% to allow easy identification by customers.

Delta support informed purchasing choice by applying Ecolabel onto its product. In 2018, Delta Thailand had sampling checked its top ten revenue custom design products which cover 21% of Thailand's revenue. The sampling check is to ensure implementation of environmental declaration on its products. Finally, the result from the test are as following:

Type	Standard /principle references	Features	Key samples	% to sampled products
Type I Ecolabels	ISO 14024	<ul style="list-style-type: none"> <li>pass/fail award system third party grants license to use label (typically a logo) · voluntary</li> <li>multi-issue, based on product's life cycle impacts</li> <li>criteria set and product assessed by third party</li> </ul>	<ul style="list-style-type: none"> <li>80 Plus family</li> <li>Bureau of Indian Standards (BIS)</li> <li>The Eurasian Conformity mark</li> </ul>	—
Type II Self-declared environment	ISO 14021	<ul style="list-style-type: none"> <li>text statement and/or logo</li> <li>improvements should be quantified</li> <li>voluntary</li> <li>avoid meaningless statements eg 'environmentally friendly', 'sustainable'</li> <li>generally single issue but may be multi-issue; must be significant according to ISO standard</li> <li>self-declared, no third party involvement</li> </ul>	<ul style="list-style-type: none"> <li>EnergE</li> </ul> 	9%
Type III Environment declarations	ISO 14025	<ul style="list-style-type: none"> <li>quantified information</li> <li>may be presented in variety of forms eg text, graphs, pictorals.</li> <li>multi-issue, based on Life Cycle study</li> <li>Generally B2B, or used in public procurement</li> <li>self-declared but must be peer reviewed according to ISO technical report</li> </ul>	        	91%

Resulting from Up to 2018 more than 200 of Delta power supply products had obtained 80 plus certification, and some of them achieved the Titanium level launched in volume production. Nevertheless, Delta Key businesses majorly falls at ODM/OEM business section, any label on product is under customers' specification requirement. During the reporting period, there was no incidents of non-compliance concerning product and service information labeling, marketing communication, the health and safety impacts of products and services up to the reporting period.

Reference:

- UNOPS. (2009))A GUIDE TO ENVIRONMENTAL LABELS - for Procurement Practitioners of the United Nations System. Retrieved May 02, 2019. From [https://www.unops.org/areas/public/downloads/Env\\_Labels\\_Guide.pdf](https://www.unops.org/areas/public/downloads/Env_Labels_Guide.pdf) Charles Allison & Anthea Carter .
- OECD. (May 2016). Environmental labelling and information schemes. Retrieved May 23, 2019, from <https://www.oecd.org/env/policy-perspectives-environmental-labelling-and-information-schemes.pdf>
- Lanchakorn Pathumrat, PhD. Thailand Environment Institute . (July 7,2013). Green Products and Eco labels. Retrieved May 23, 2019, from [https://www.ditp.go.th/contents\\_attach/77079/77079.PDF](https://www.ditp.go.th/contents_attach/77079/77079.PDF)
- Big room Inc.(NA) All ecolabels on electronics. Retrieved May 23, 2019, from <http://www.ecolabelindex.com/ecolabels/?st=category.electronics>

## Keep introduce innovative solutions

In 2018, Delta continued our R&D investments with specific focus on our fast growing businesses for electro-mobility, networking, datacenters and industrial power. Major extensions of the product lines and integrated solutions were achieved as well as continued improvement of our product's key features efficiency, power density and digital intelligence. Additionally, Delta R&D has increased the application range and customer base respectively of its power technology products like industrial wireless charging, combined charge units for the electro-mobility and artificial intelligence.

The healthy view of the markets, their customers and their demands combined together with the R&D manpower's know-how and strengths is the door to Delta's competitiveness and leadership in green environment and efficient energy saving power devices and solutions.



**Showcase Data Center Solutions at DCD>Thailand & Indochina**  
13 February 2019  
Bangkok, Thailand



**The World's First 8K 25,000 lumen DLP® Projector Launched at ISE 2018**  
6 February 2018  
Amsterdam, Netherlands



**Delta Unveils EV Charging Solutions for India at Elecrama 2018**  
10-14 March 2018  
Greater Noida, India



**Delta DRV Series articulated industrial robot wins the iF Design Award 2018**  
16 March 2018  
Hannover, Germany



**Showcased its full range of Uninterruptible Power Supplies (UPS) across Australia at the Synnex Alliance Roadshow 2018**  
11 April-9 May 2018  
Perth, Brisbane, Melbourne, Sydney, Australia



**Delta Showcases Green Energy and EV Charging Solutions at ASEAN Sustainable Energy Week 2018**  
6-9 June 2018  
Bangkok, Thailand



**Delta's Cutting-Edge UPS Systems Support Mission Critical Applications in Five Football Stadiums of the 2018 FIFA World Cup Russia**  
6 June 2018  
MOSCOW, Russia



**Delta Showcases Industrial Automation Solutions at Manufacturing Expo 2018**  
20-23 June 2018  
Bangkok, Thailand



**Delta Showcases Green Building Solutions at 7th TGBI EXPO 2018**  
25 July 2018  
Bangkok, Thailand



**Delta gets Victorian Government Grant for EV Charging Research with Nissan and CSIRO**  
17 August 2018  
Melbourne, Australia



**Delta Showcases Green Building and Industrial Automation Solutions at BEX Asia 2018**  
5-7 September 2018  
Marina Bay Sands, Singapore



**Delta Hosts Industry Leaders Driving Thailand's Smart City Development in its First Industry Summit**  
13 September 2018  
Bangkok, Thailand



**Delta Central Inverters Support India's Largest Floating Solar Project**  
17 October 2018  
Visakhapatnam, India



**Delta EV Charging Supports the Thai EV Industry at Thailand Motor Expo 2018**  
17 December 2018  
Bangkok, Thailand



**Delta Drives Momentum for EV Charging Solutions in India**  
December 20, 2018  
Delhi, India

## Retain Innovation pipeline

Regarding more frequent technology break through and changing aspect of customer requirement changeover, innovation pipeline is vital for our long-term growth. With over 1,400 patents and countless knowhow, Delta frequently disseminate its cutting edged technologies to develop ICT and related industries infrastructure. Among over hundred site visit a year, followings are some key events happened in 2018.



**Delta Industrial Automation Camp 2018** for 60 students from top Thai universities at the Delta Training Center, Chachoengsao. Delta hosted the training camp to bolster the students' skill in Industrial Automation field. Familiarity with technology, application and related processes will allow these students to adopt their knowledge to any chain of automation industry.

**Delta welcomed a Thailand Automotive Institute (TAI)** delegation, with 25 instructors from the campuses of Automotive Industry Technical College (AITC), to see Delta's latest EV technology at the company's Samutprakarn headquarters. The TAI is Thailand's leading organization for automotive and auto parts industry development with a focus on environment-friendly

business, ecosystems and modernization. The main aim of the TAI delegation's visit was to explore Delta's best-in-class EV products and technology and the company's advanced automotive production.



The visit to Delta's headquarters and automotiproduction inspired the TAI delegation to plan improvements to their education syllabus and student career development programs. Delta collaborates with the TAI to promote development Thailand's EV sector with industry seminars and donation its state-of-the-art DC and AC EV chargers to the TAI Technology and Innovation Learning Center for EVs. 250 trainees at the Delta Industrial Automation Labs.

**Delta welcomed 15 representatives of the PTT Public Company Limited (PTT)** led by Mr. Saksri Ngernklom, Government and Industrial Marketing Development Division Manager, to explore Delta's latest EV charging solutions at the company's Samutprakarn headquarters.

The company is seeking potential partners to boost its mass supply capacity, strengthen supply chains and bolster its EV stations with hi-technology.

**Delta welcomed 77 student participants of the Robot Design Contest 2018** from 34 universities across Thailand to explore the company's robot innovation at its headquarters in Samutprakarn. In its 11th year, the contest's 2018 theme is-"Robot for Smart Manufacturing".



The contest organizers are the National Metal and Materials Technology Center (MTEC), National Science and Technology Development Agency (NSTDA) and the Ministry of Science and Technology in collaboration with Chulalongkorn University, Chiang Mai University and Suranaree University of Technology. Delta Electronics is a contest sponsor alongside Electricity Generation Authority of Thailand (EGAT) and the major IT mall-Pantip Plaza.



Gold prize	Silver prize	Bronze prize
<ul style="list-style-type: none"> <li>Team CU Soon, Chulalongkorn University, Thailand : Smart Mochtail Vending Machine project.</li> <li>Team Matrix 2.0, Vellore Institute of Technology, India : IoT Electronic Retail Order Sorting and Verification System project.</li> <li>Team Alfred &amp; Cadbury, Vellore Institute of Technology, India won 1st prize for its Intelligent Warehousing and Logistics-Transportation project.</li> <li>Team CLONE TRIBE, R.V. College of Engineering, India : 3D Scanning and Printing Machine project.</li> </ul>	<ul style="list-style-type: none"> <li>Team Automed, King Mongkut's University of Technology Thonburi, Thailand : Patient Monitoring System project.</li> <li>Team Tiger from Industrial University Of Ho Chi Minh City, Vietnam : Intelligent Automated Parking System project.</li> <li>Team BK-OCEAN from Ho Chi Minh City University of Technology, Vietnam : Shoe Auto Assembly Production Line project</li> </ul>	<ul style="list-style-type: none"> <li>Team PMAL, King Mongkut's Institute of Technology Ladkrabang, Thailand: Prognostic Maintenance Artificial Neural Network and Machine Learning System project.</li> </ul> 

Delta Electronics (Thailand) PCL. sponsored student teams from top universities in Thailand, India and Vietnam at the 5th Delta Advanced Automation Contest (Delta Cup) at Wujiang, China.

From total 75 participated team, the teams from the three countries vied for top prizes with elite engineering student teams from Taiwan and China. Delta Thailand's business associate, Delta Electronics Inc. organized the 5th Delta Cup under the event theme-Seeking Smart Manufacturing Talents.

Since 2016, Delta Thailand sponsored prize-winning teams from Thailand's Chulalongkorn University, Kasetsart University, King Mongkut's Institute of Technology Ladkrabang (KMITL), King Mongkut's University of Technology North Bangkok (KMUTNB) and King Mongkut's University of Technology Thonburi (KMUTT). Delta's offers training and sponsorship in the Delta Automation Academy, Delta Automation Labs and Delta Cup as part of its commitment to develop society and support Thailand's competitiveness in the Industry 4.0 Era. After on-field experience on application, equipment and knowledge adoption, these new generation engineers will be quality blue pillars to advance innovation infrastructure of ICT industry in long-term.

With their creative use of Delta automation products for industrial applications, Thai teams participating at the Delta Cup received the following awards from the judging committee comprised of industry, government and academic experts.

# Responsible supply chain



Delta managements and executives from sustainable development, supply chain management and manufacturing at Delta EV Supplier Summit 2018

Well-managed supply chain only help Delta but also our customers in term of competitive quality, technology, delivery, cost, human rights and social responsibility. Climate and demography change lead to raw material scarcity and high competition among global supply chain. Delta views suppliers as long-term partners as described in our [Delta Supplier Social Responsibility Management Measure](#) which is based on the [RBA code of conduct](#) guidelines. 100% New suppliers that were screened using environmental criteria We believe a prolonged partnership is only viable between enterprises with similar cultures and make integrity, code of business conduct and honesty our top priorities when selecting a supplier. Thousands of suppliers all over the world are Delta business partners and support our promotion of a sustainable business.

In 2001, Delta formed an [agreement](#) between its purchasing department and over 1,800 active suppliers to ensure integrity in its supply chain. The Procurement and Supplier Covenants promotes a healthy procurement system that avoids the negative influence of human factors such as bribery or unwarranted returns on normal business.

During the Delta EV Supplier Summit 2018, the company's business ethic and directions including emerging risks and collaborative opportunities among supply chain had communicated to our global automotive suppliers.

## Procurement Strategy

Delta undertake its annual procurement spending analysis of its 100% supply chain to secure its productivity performance, cost management and seek for the right decision among global fluctuated situations. The company categorized its production suppliers into three types: direct materials (production-related), indirect materials (non-production-related) and labor.

In 2018, the company performed sources diversity while engage new automotive and automation suppliers to be ready for higher demand of new business group e.g. automation and automotive business. However, compare with our historic purchase expenditure, there was no significant change in Delta's direct material's supply chain.

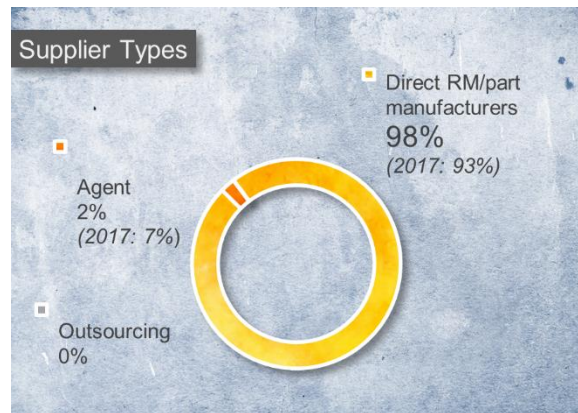
## The right focus



The first step to understand supply chain risks and dependencies from a general, economic point of view is to aware potential areas of possible risky occurrences.

Once a company has identified its critical suppliers, it can focus its supply chain monitoring and risk management efforts on those suppliers with the potential to cause problems. When ESG-related risk consider, suppliers that meet any of the three criterias are considered as "critical suppliers."

## Direct deal preferred

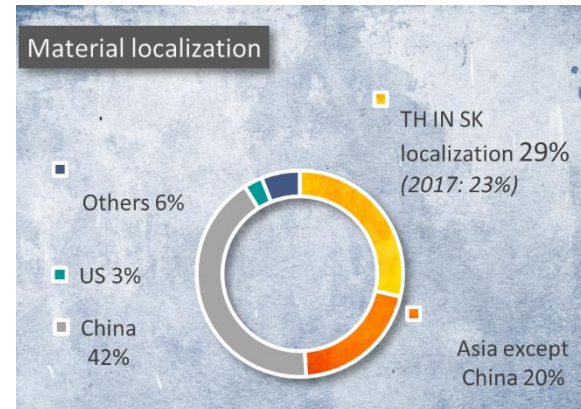


For effective communication, ESG-related issues control, Delta major raw material and component had supplied by direct manufacturers rather than agents and outsourced suppliers. For direct control our supplier's ESG responsibility, Delta aims to have 100% tier-1 supplier in 2023. In 2018, Raw material and component direct suppliers make up the majority, up to 98% where increase from 93% in 2017.

## Closer is better

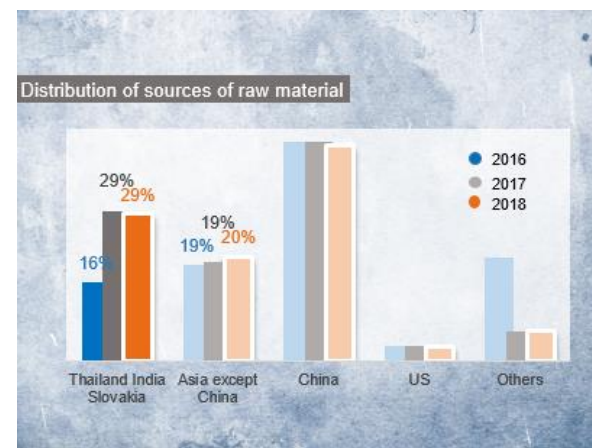
To enhance ESG performance of critical supplier type 1 (high purchase volume) while closely monitoring critical supplier type 2 and type 3 competence, Delta continues to adopt purchasing localization is highly required. Localization is Delta practical way to establish close links with local partners, improve social and economic development in the community and reduce the environmental footprint of our operation. To mitigate

supply chain hiccup, Delta target to have one third (35%) of total suppliers localized by 2023. In 2018, 29% of direct materials had purchased locally for our major production sites in Thailand India and Slovakia. This material



localization ratio slightly increase from 26.8% in 2017.

Regarding these 3 major procurement practices, either risk as nature of business process or emerging risk in supply chain can be effectively mitigated. With smooth and collaborative supply chain, agile action to fulfill Delta requirement and customer satisfaction has stably retained.



## Risk in supply chain

Delta request all new suppliers to have certifications in Quality, Environment, and Occupational Health & Safety and sign the company's "Integrity Statement" and "[RBA \(EICC\) Commitment Statement](#)". Delta also encourages existing suppliers to have the above-mentioned certificates.

In additional to risk as nature of business 2018, raw material scarcity has high competition in the industry gradually lead to tight supply with longer lead time of some critical parts. Long-term agreement/MOU had processed in collaboration with key supplier for capacity reservation. Resulting from the mentioned measurement, Delta had review its material purchase plan to ensure sufficient PO coverage for requirement and lead-time. All critical items' demand and supply has closely monitored and periodically followed up on supplier sites. Finally, as long-term solution, Material Control function had openked discussion with Research and Development team to seek for alternative sources and substitutional raw materials whereas engineering specification are reserved.

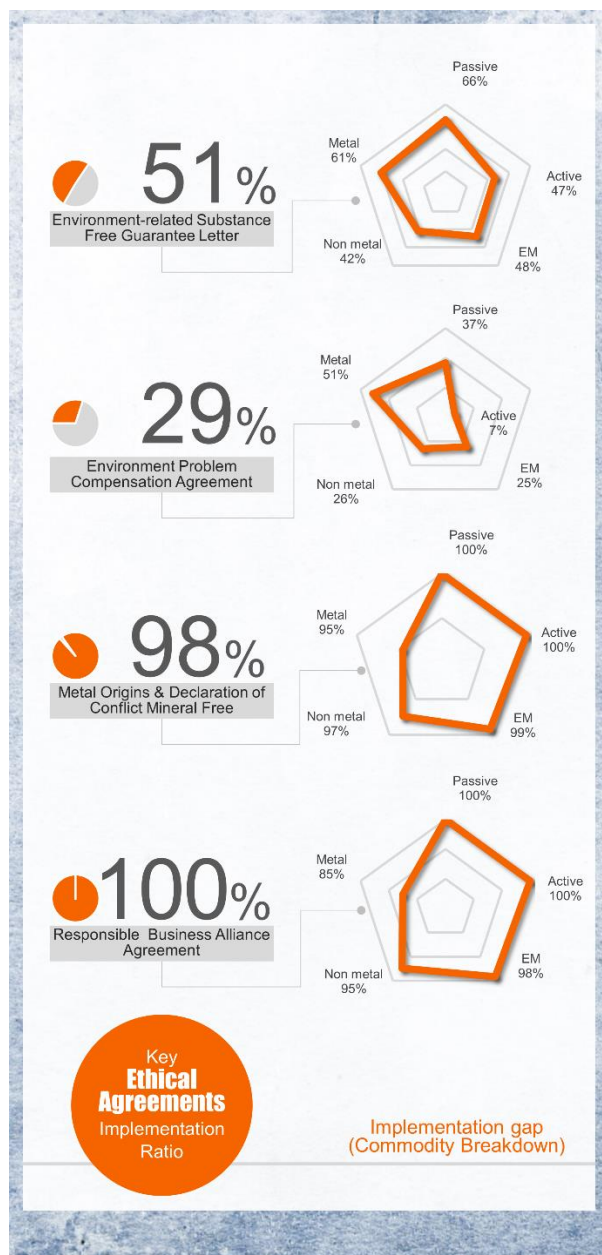
Delta uses tools such as risk mapping that considers economic, environmental, and social factors to verify potential risks in the supply chain and strengthen risk management. During the past years, the number of key suppliers for our power supply products that received relevant industry standard certificates has increased every year.

Components	PCBs	Wire A'ssy	Heat Sink	Inductor / Transformer	Metal/Plastic casing
Risk Attributes	Environment	Environment, Society	Socio-environment	Environment, Society	Environment, Society
Potential Risks	<ul style="list-style-type: none"> <li>Etching process hazardous substance</li> <li>VOC discharged from PCB process</li> <li>Hazardous chemicals</li> <li>Toluene emissions</li> <li>Imm. Tin causes cancer</li> </ul>	<ul style="list-style-type: none"> <li>Labor intensity, labor right</li> <li>VOC discharged from PVC heating</li> <li>Labor safety risks in soldering process</li> </ul>	<ul style="list-style-type: none"> <li>Labor intensity</li> <li>Labor safety risks during stamping process</li> <li>Dust and high noise level in work environment</li> <li>Human toxicity from melting process</li> <li>Solid waste production from AL dross</li> <li>Aquatic toxicity Global warming</li> </ul>	<ul style="list-style-type: none"> <li>Labor intensity</li> <li>Process chemicals</li> <li>High temperature and high humidity in work area</li> <li>REACH</li> <li>RoHS</li> <li>Red phosphorus</li> <li>Halogen Free</li> </ul>	<ul style="list-style-type: none"> <li>Labor safety risk in injection stamping processes</li> <li>High temperature and high humidity in work area</li> <li>Odor of plastics and resins</li> <li>Safety concern in tooling/mold installing and stamping/ injection process</li> <li>High noise</li> <li>High temperature</li> </ul>
Key Suppliers	18	26	11	45	32

## Ethical risk

RBA code of conduct became our world-class customers' expectation. According to Delta stakeholder engagement questionnaires and frequent customer engagement questionnaire, human right issue especially forced labor in ICT industry was still in broader society's interest.

Delta implements a policy that bans the use of Tungsten, Tantalum, Tin, and Gold (3TG) mined from human right harassment countries. The company's suppliers had request our power supply products suppliers to declare the origin of out a "Metal Origin Survey Form" and to sign a "[Responsible Minerals Initiatives \(RMI\) Agreement](#)". These are very important steps to help mitigate human rights risk, we also help trace the original ores of metals in our supply materials. By 2018, 98 % of our main material suppliers have signed



the “[Responsible Minerals Initiatives \(RMI\) Agreement](#)”. It was ensured that conflict metal in our supply chain yet and continue to communicate the need for our major materials suppliers to leverage their influence for corporate social responsibility and increase efforts for origin verification of ore products by the RBA or a third party.

The company has introduced the IECQ/QC080000 Quality System and promotes a Green Product Management (GPM) system. We implemented the IECQ based on the risk classification of materials and the Green Supply Chain based on the following principles:

- A supplier must have total compliance with local statutory regulations and define its own risk control mechanism.
- A supplier must set up environmental protection, staff health and safety. The supplier must be hazardous substance free (H-F).

A supplier must follow relevant Delta Thailand’s standards on managing environment-related substances (such as [10000-0162 Management Standards for Environment Related Substances](#)).

The company also leverages the GPM system as a shared platform of environmental information in the supply chain. Delta relays the most recent international environmental requirements, such as the latest controlled substances of EU’s RoHS 2.0 and REACH SVHC, to all supplier partners on the platform.



Delta Thailand performed on-site audit to its overseas suppliers to ensure and advocate their quality and ESG-related performance

Since 2014 Delta promotes RBA (EICC) Verification Consultation to lower ESG risks in our supply chain and improve competitiveness. Delta Thailand set up a verification and consultation team, “RBA (formerly) EICC committee”, composed of five major departments: Human Resource Administration, Occupational Health and Safety, Facilities, Central Purchasing Control, Purchasing Material Control and Supplier Quality Management. The RBA committee will examine related law and regulation compliance, human rights, labor rights, health and safety, environmental issues and Ethics and Management Systems. We found room for improvement for most of our suppliers in Health and Safety aspects of the RBA management system. Delta plan to implement 100% critical supplier RBA audit in 2023. Our 2018 audit included 11 suppliers who all passed with an average score of 87 points, mean 88 points and highest score 93.75 points. Finally, accumulated 58 suppliers (50.4% of critical suppliers) audited up to 2018.

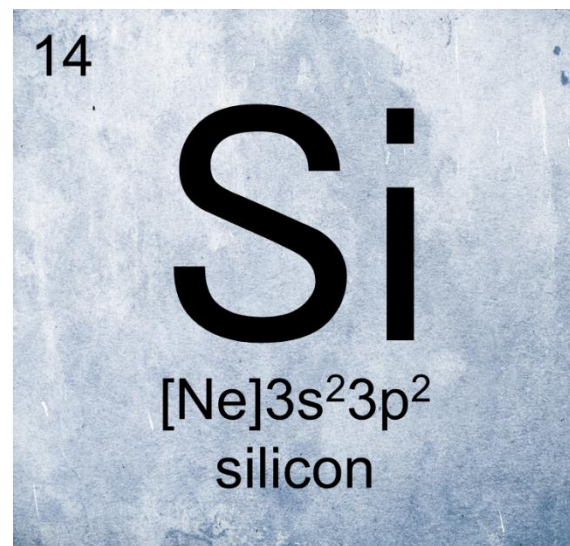
Excessive work hours is a common management problem in the industry. Our RBA verification and consultation team provided experience in introducing and promoting Delta Thailand's Management System to address these findings to our suppliers. The team also conducted status followed-up to ensure continued improvement. The company sets target to gain 100% agreement implementation of all commodities include Electro mechanical, Non-metal and Metal in 2023.

In addition to general audit finding, the RBA committee receive 1 complaint of discrimination issue from an employee of an audit supplier in 2018. This employee complained that his/her career development and OT application had blocked by his/her employer without proper reason. However, after the investigate process and random discussion with his/her colleague, it is summarized that the case has no basis of dismissal. It was only personal attitude to another one.

### **Tight supply of silicon-related raw material**

Climate change, rapid urbanization and technology breakthrough gradually expose natural resource scarcity in supply chain. In 2018, Delta's supplier faced silicon-related raw material tight supply.

Silicon, a semimetal element, makes up 27.7 percent of Earth's crust. It is the second most abundant element in the crust where is surpassed only by oxygen. Most silicon is commercially used without being separated, and often with little processing of the natural minerals. Such use includes industrial construction with clays, silica sand, and stone. Silicates are used in Portland cement for mortar and stucco, and mixed with silica sand and gravel to make concrete for walkways, foundations, and roads. They are also used in white ware ceramics such as porcelain, and in traditional quartz-based soda-lime glass and many other specialty glasses.



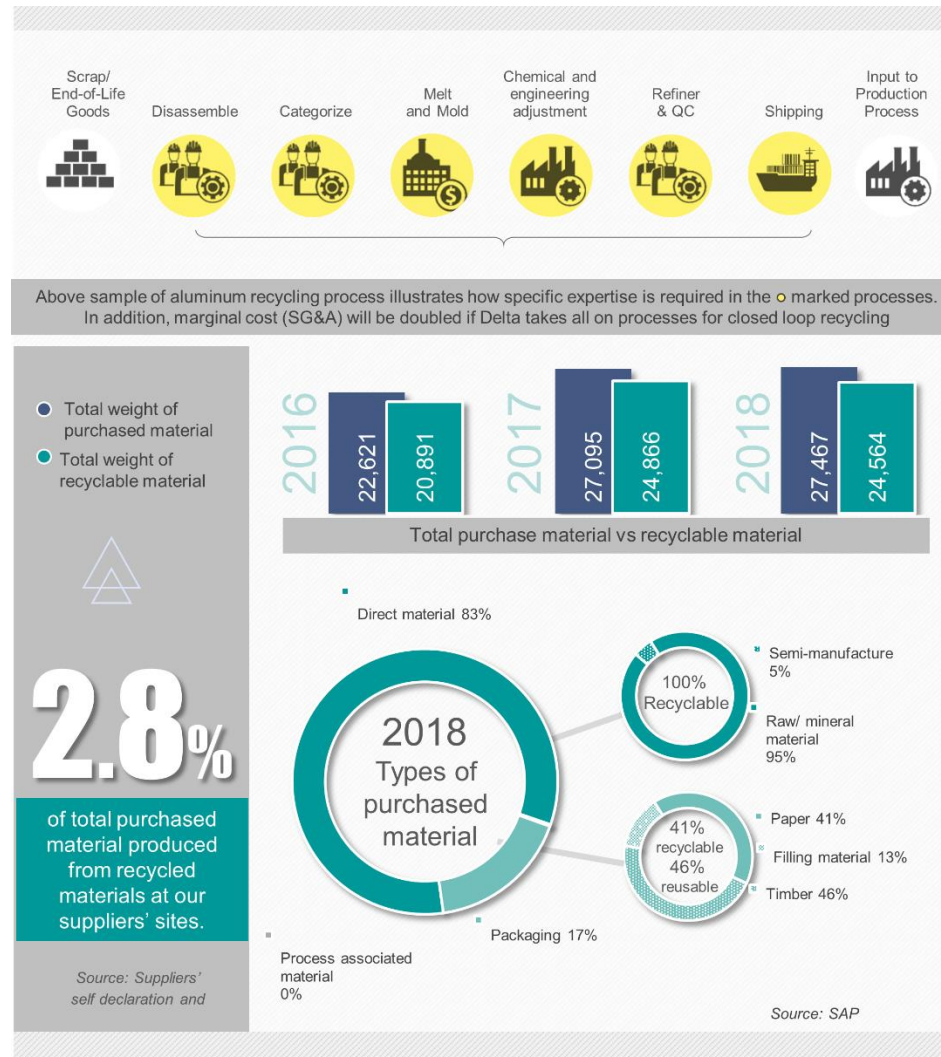
To mitigate this issue, Delta implement long-term agreement/MOU with key supplier for capacity booking. The company has closely monitoring demand & supply of all critical items. On-site follow up with suppliers' managements had schedule. Finally, for long-term solution, this issue had brought to a discussion among buyers, suppliers and Delta's Research and development team to seek for alternative and/or replacement material for support ramp-up demand of ICT and renewable energy solutions.

### **Enhance smarter and greener supply chain**

"How to have long-term business with reasonable margin and smooth supply chain among natural resources constraint, changed-over technology and high competition market?" was the question recurrently asked by our suppliers during supplier engagement meetings with accounted buyers.

To this concern, Delta encourage our suppliers to provide their collaboration to enhance Green supply chain. This not only lowers operational costs for us and our suppliers but also increases the competitiveness of the entire supply chain. Finally, the company realized our suppliers' collaborative actions as following.

## Recycled Input Material



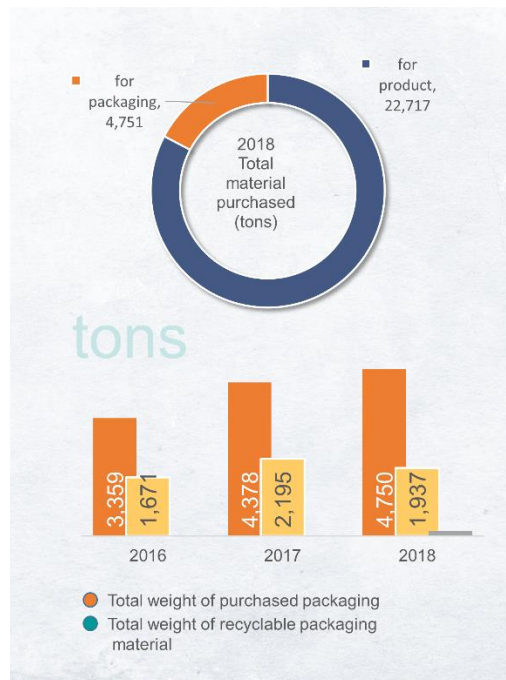
In spite of takeback program for close-loop recycling, Delta reduce impact to natural resources through close loop recycling. Since Delta is 100% export company, take back program will double total variable cost (eg. people cost, shipment cost, customs process cost) and GHG scope 3 for both Delta itself and our customers. To ensure 80% recyclable part & component as WEEE requirement will be utilize, in 2018, Delta conducts circular economy possibility survey to seek for further possibility to encourage our supplier to use recycled input material in their process.

From the supplier self-declare process and solder dross recycling project result reported to Operation Vice President, Delta realized that 3,201 tons of recycled material had used by our suppliers in their production process. This 3,201 tons account for 2.75% of our purchased recyclable materials in 2018 without any impact on material cost and technology investment cost. 92% of this volume of recycled input material was used as direct material for conversion to our product while another 8% was recycled and reused as packaging of 100% of our products shipped world-wide last year. From this outstanding result, it is discussed among Sustainable development, Component engineering and purchasing function to seek for further possibility to add allowed percentage of recycled material in to supplier's certificate of conformance (COC).

In parallel, Delta manufacturing team had recycled material such as resistor lead and solder dross since 2015. These small scrap was use as our input raw material at average 0.5% of total weight of purchased material. In 2018, 21 tons of solder dross which account for 22% of total purchased solder dross/tin/wire in 2018 had recycled at our production line. Finally, over 14 million bath of virgin solder dross purchasing had saved accordingly to the project.

## Reuse and recycle packaging materials

Since 2015, Delta cooperates with major processing factories to reuse packaging materials such as Expanded polyethylene (EPE-used as filling packaging) and paper etc. Delta recycles up to 71% of the packaging materials for mechanical products and 30% of packaging for non-metal products.



## Green Logistics

Major global distribution centers cooperate with logistics providers to implement transportation cost optimization,

consolidated delivery, full-truck load, packaging design, container packaging and selection of optimal delivery routes. Since Delta attained [ISO/IEC 27000 Information Security Management System \(ISMS\)](#), we encourage our suppliers to utilize e-invoice and e-document as much as possible to save natural resource and mitigate greenhouse gas from distance transportation.

## Introduction of energy saving and carbon reduction products and solutions

Delta cooperated with five suppliers to introduce energy saving products and solutions. After Delta implement lobby, solar roof carpark, showroom renovation and Delremo (real-time solar energy monitoring) to draw more attention of suppliers who visit our site.

## Boost up innovation infrastructure with SMEs' innovation



Agile response is highly required in technology breakthrough era. For big organization, there might be

some constraints when ad-hoc innovation required, but not for flexible SMEs. Delta has joined forces with Department of Industrial Promotion (DIP) to continue its "Angel Fund for Startup" for the third consecutive year. This fund is the first fund by a private sector to collaborate with DIP to support new entrepreneurs and startup companies with a granted fund of THB 4 million. To establish a business, the requirement relies on two concepts: Green Solution for Thailand 4.0 and Advancing Thailand's Industry with AI Solution.

Delta recognizes that startup companies that have great business plans but are lack of financial support. That is why we collaborate with the DIP to establish the 'Angel Fund' project for young entrepreneurs to submit their business plans and compete for a fund of over THB 4 million, along with providing business knowledge for young generations with dreams and passions to make their businesses happen. We want startup companies to grow efficiently during the competition and be able to develop new products and innovations that has positive effects on the economy system, as well as be the country's foundation in driving the economy in long term according to the government's policy.

The online admission on February 2018 was very well received, with over 100 teams of entrepreneur around the country applying for the competition. In early July, the winner was selected under the consideration of the committee from Delta, specialists from DIP and expert professors from educational institutions.

## A greener process

According to Thailand's pollution situation in 2018, business sector was broadly reminded to reduce environmental negative impact and climate change risks is in global focus. Delta's founding mission is "to provide innovative, clean and energy efficient solutions for a better tomorrow". With no significant change in operating locations and supply chain, the company carried out its eco-efficient operation with continuous effort in reducing a business' environmental impact. Our group-wide environmental policy publicly published on <https://bit.ly/2KMAehY> is showing our sincere effort and partnership with global citizen to make a smarter and greener future.

### 2018 Major contributors to Delta's consolidated revenue



**98%** of Delta consolidated revenue has contributed by our major sites in 3 countries

#### Source of Energy



#### Type of grid operator



#### Green building certification



#### Slovakia

##### Dubnica nad Vahom

Production area : 10,500 sq.m  
No. of workers : 571  
Production line : 22 lines  
Actual production : 75% of full capacity



#### India

##### Rudrapur Plant

##### Sector - 5, SIDCUL Industrial Area

Production area : 13,880 sq.m  
No. of operators : 1,079  
Production line : 15 line  
Actual production : 85% of full capacity



#### Others

Subsidiaries of Delta Thailand's where their business nature are sales & service offices and research and development centers located in Australia, Austria, Brazil, Czech, Finland, France, Germany, Italy, Myanmar, Netherlands, Poland, Romania, Russia, Singapore, Slovakia, Spain, Sweden, Switzerland and USA.

#### Thailand

No. of workers : 9,438

##### Plant 1

##### Bangpoo Industrial Estate

Production area : 16,710 sq.m  
Production line : 14 lines  
Actual production : 80% of full capacity

##### Plant 5 (HQ)

##### Bangpoo Industrial Estate

Production area : 41,700 sq.m  
Production line : 65 lines  
Actual production : 85% of full capacity

##### Plant 6:

##### Wellgrow Industrial Estate

Production area : 14,100 sq.m  
Production line : 90 lines  
Actual production : 80% of full capacity



- Delta major operation sites are in well-management Industrial parks
- These major sites had certified ISO 14001, ISO 14064-1 and OHSAS18001

**0.0323**

2018 GHG Intensity (scope1+3) CO2e tons: 1 Mil. USD production amount.



**249**

GHG Scope 1: CO2e tons



**39,356**

GHG Scope 2: CO2e tons



**46,264**

GHG Scope 3: CO2e tons

Electricity intensity reduction from based year 2014

**18%**

**6,526**

Solar energy internal use: kWh



**6,439**

Recycled burn-in energy: kWh



**85,870**

Total electricity purchase

Since emission factor and sources of energy at each site is different, The cases show here are Thailand samples only.

Delta drive business operations on basis of the PDCA principle (Plan/ Do/ Check/ Action). The system allows us to cope with various contexts of quality, economic, social and environmental requirements and stakeholders' expectations, which employees at all the levels can continue applying as part of their daily activities. No issue of non-compliance with environmental law and regulation in past 3 years should be the golden proof of our strong willing to ensure better tomorrow for the next generation.

The Company fully supports the Environment protection Program and is committed to work while strictly and continuously observe and comply with environment laws, regulations and customer's requirement customer to implement green-label products. The company always confine and conserve available resources of global contents, listen and respond to comments from every source to improve environment conditions. We strive to drive pollution reduction programs, execute waste management and efficient utilization of energy and resources. Environment education has promote among our employees. Release and instill information of environment productive to every employee and to the public. We always strive for the support of all activities that fosters to achieve safe and clean environment. To confide our related stakeholder, the company has disclosed our [environment policy](#) on our public domain.

Delta has participated in the Ministry of Industry's "Green Industry" program to showcase its serious commitment to following environmental-friendly practices by shaping up its production and environmental management processes to be greener as well as displaying greater social responsibility internally and externally throughout its

supply chain, to achieve sustainable developments. Our company's two plants at Bangpoo Industrial Estate and Wellgrow Industrial Estate have work in partnership with Bangpoo IEAT network and its communities and are certified to Green System, Level 4- Green Culture, which is a level for industries with systematic environmental management processes that include monitoring, evaluation and improvement.

## Plan with awareness

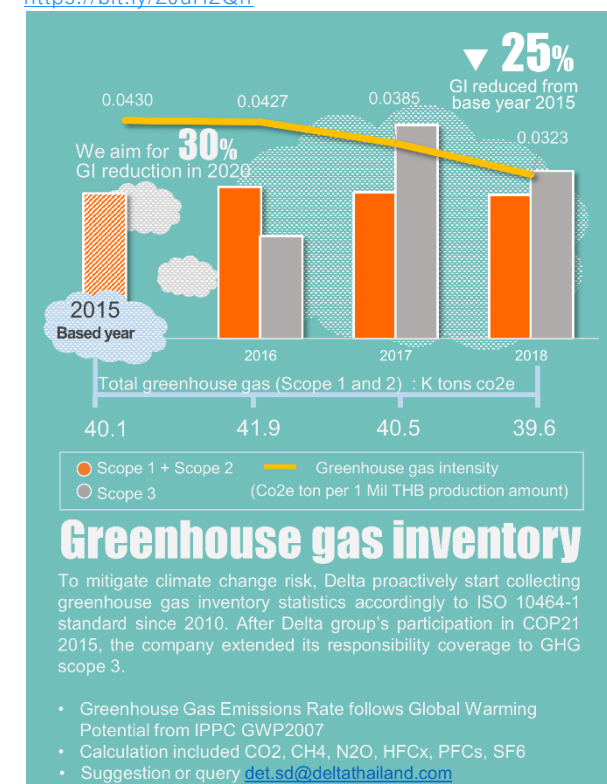
To ensure our eco-efficient operation creates positive impact on climate change, one of Delta's significant emerging risk on natural resource scarcity and the biggest threats to our society, Delta aligned with Carbon Disclosure Project guideline to provide concrete measures to continuously implement energy management in order to improve usage efficiency of energy as well as to reduce carbon emissions.

In 2009, Delta started to collect data on greenhouse gas (GHG) emissions, both direct and indirect and reported our progress on the website of Standard for Quantification, reporting greenhouse gas emissions and removals (ISO14064-1) in 2010 - 2018. The [GHG Inventory](#) has disclosed on Delta Thailand's website to show our GHG performance. In addition, the company, in its relentless endeavor to pursue a sustainable business model, submitted its [disclosure on climate change](#) related questionnaire to CDP for the first time in 2016.

Delta had included GHG scope 3 to its report in 2016 to expand its responsibility throughout its supply chain. The direct emissions (Scope 1) of 2018 were 248.7 tons CO<sub>2</sub>e, indirect emissions (Scope 2) were 39,336 tons CO<sub>2</sub>e and

other indirect emissions (Scope 3) were 46,265 tons CO<sub>2</sub>e. Delta's emissions disclosure had validated by the independent assurer to ensure data accuracy and transparency. When our goal in 2020 is to reduce 30% GHG intensity per 1 million USD production amount, latest statistics shows that the GHG intensity of 2018 was 0.03 tons CO<sub>2</sub>e/ M USD, a decrease of 25% from base year 2015.

Our [India](#) and [Slovakia](#) site's GHG Inventory report, standards, methodologies, assumptions, and/or calculation tools used, source of the conversion factors used, and third party assurance for all reported greenhouse gas inventory is available at <https://bit.ly/2JuH2Qh>



# 0.8%

2018 cost of goods sold reduction from our energy conservation programs

**2020** **30%** ↓ Energy intensity reduction target in 2020

**2018** 18.0%  
5.0%

**2017** 3.0%  
5.0%

**2016** -5.0%  
5.0%

**2015** 6.0%  
5.0%

**2014** Based year  
66,612 kWh : 1 Mil USD

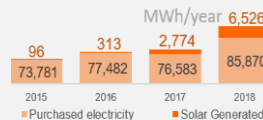
● % of ACUTAL energy intensity reduction to based year  
● % of TARGET energy intensity reduction to based year

Since 2014 our long-term target had set and collective efforts had closely monitored.

**38%**  
Manufacturing Infrastructure & equipment

**2016-2017**

- Reflow insulation
- Wave soldering auto control
- Stamping motors replacement by IE3 type motor
- Combined duct exhausts
- Flux oven isolators.



**6%**  
Air compressor

**2016-2017**

- High efficiency air compressor
- High efficiency air dryer
- Combined loop
- Aluminum pipes for longer lifetime
- Solenoid control

**32%**  
HVAC (heat, ventilation & air conditioner)

**2016-2018**

- Apply variable refrigerant volume air conditioners system
- Changed refrigerant type from R407c to R134a
- changed fire extinguisher type from FM200 to Novec 1230
- Area-based air conditioner types.
- Apply Delta inverter and its software to control chiller injection
- High efficiency motor pump & injection

**5%**  
Lighting

**2016-2018**

- 100% LED lighting installation (office light, street light, high-bay light in production line)
- Solar street light for outdoor area

**12%**  
Burn-in Energy recycling system

**2016-2018**

- Adoption of Delta Solar inverter to implement Burn-in energy recycling system

**Major energy conservation programs To implement 30% EI reduction in 2020.**

**7%**  
Others

**3.2 MWp**  
(full capacity) of solar Rooftop implemented At Delta HQ in 2018.

111

Major energy conservation programs to implement 30% Energy Intensity reduction target in 2020. In 2018, all purchased electricity in Delta's owned buildings contributed to 46% of the company's total greenhouse gas.

## Do more with less

From our close monitoring on Greenhouse gas inventory report, Delta realizes its potential to mitigate climate change impact by reducing greenhouse gas and related environment footprint in our daily operation. With smarter & greener operation, mutual benefits will be enabled for Delta, its stakeholders and world's environment.

### Refrigerant replacement

Delta keeps tracking its ozone depletion substances (ODS) based on IPCC2007 methodology.

According to [UNEP initiative](#), Delta uses HCFCs to replace CFC to decrease Ozone Depletion Potential. Therefore, during the HCFCs lifecycle, only about 1-10% of CFC-12 had emitted to Ozone. According to the company's 2015-2018 GHG Inventory report, OSDs include Chlorofluorocarbons (CFCs), Halon (CBrF3), Carbon tetrachloride (CCl4), Methyl chloroform (CH3CCl3), Hydrobromofluorocarbons (HBFCs), trichlorofluoromethane (CFC-11) equivalent), Hydrochlorofluorocarbons (HCFCs), Methyl bromide (CH3Br), and Bromochloromethane (CH2BrCl) as defined in the 'Montreal Protocol' has not produced, imported or exported by Delta.

### Energy Saving Programs

Since energy conservation became a major component of our comprehensive, multifaceted climate protection program to reduce the amount of CO2 released by our daily operations. Our manufacturing processes within the organization consist mainly of system assembly and the largest source of GHG emissions (95%) is externally purchased electricity.

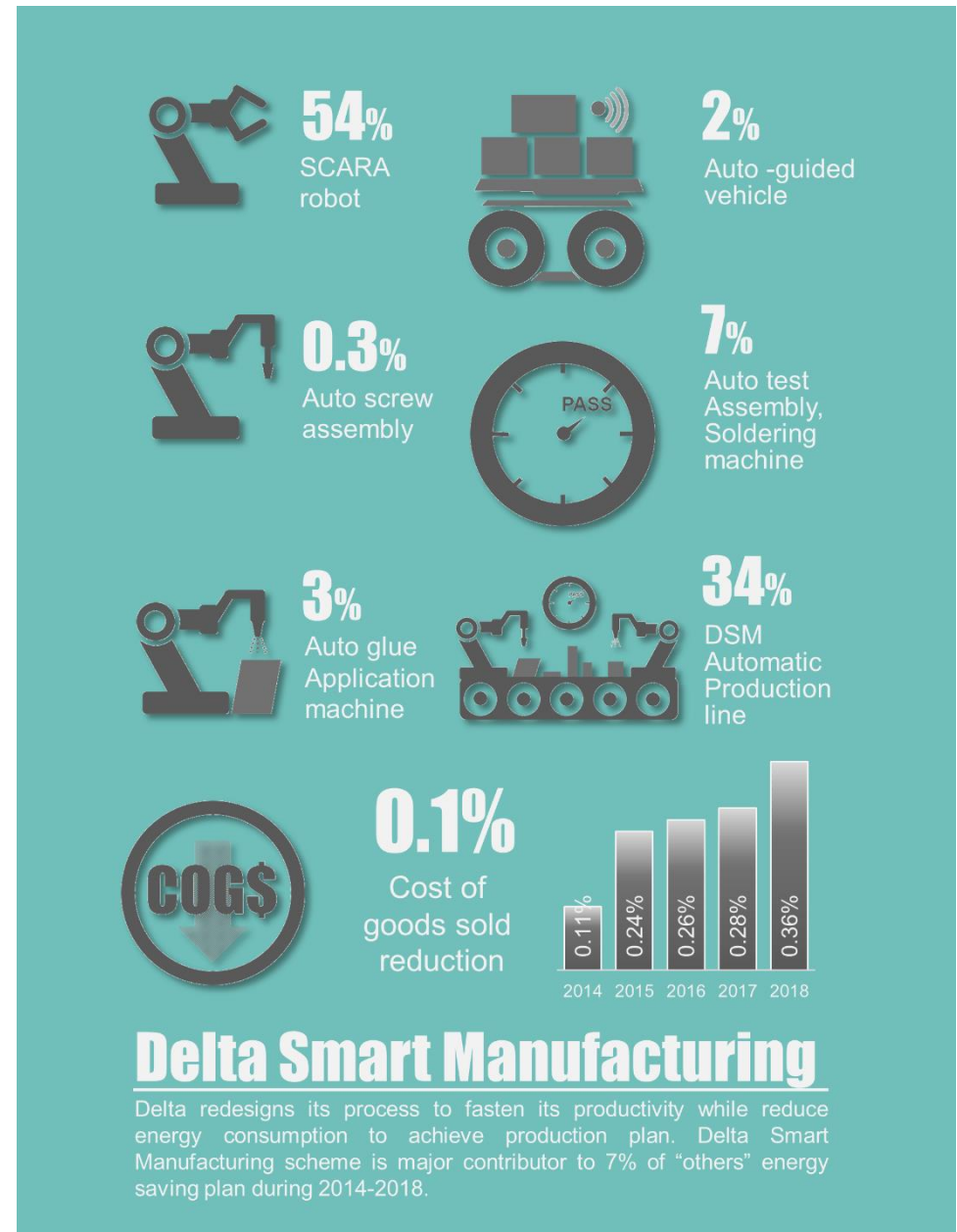
To fulfill our commitment, since 2015, Delta have developed an Energy Management System (EnMS) Plan to reduce energy consumption in the entire grid by decreasing electricity intensity (Electricity consumption/Production value) by 30% in 5 years (2020) based on the electricity intensity of 2015. In 2018, we have achieved a decrease of 18% of electricity intensity. With strong focus on energy management, we continue to aim higher and share our experience with our clients.

## Process Innovation

Delta continuously develop its manufacturing process for less material use, decreased energy intensity, lower production waste and provide greener products to customers.

From 2015 – 2018, the Company had accomplished more than 602 automation projects in 6 major potential processes. At the same time, the Company has made a strategic decision to upgrade all Delta factories to "Delta Smart Manufacturing". It is a five-year plan to integrate all manufacturing process digitally with optimum automation rather than just upgrading with single station automation. Such integration aims to enable all data regarding the manufacturing process to be available at any time and in anywhere with IoT platform. Since 2014 when we gradually introduced higher innovative automation processes and robotic arms. The big data collected will be used for predictive analysis to optimize production plan, improve logistic efficiency and enhance machine maintenance process, quality control and many more.

Delta Thailand's overall manufacturing productivity for the factories in 2018 had achieved 16% improvement from the previous year. Our focused investment and effort in process automation and continuous process improvement projects had been the main contributors. 69 majors process with latest automation technologies had implemented to concrete Delta smart Manufacturing line. The rapid deployment of such new processes can be done due to the thoughts and researches put into the concept and implementation phase to ensure disruption on daily production schedule and output will be minimized. Beyond Delta's benefit of stable cost of goods sold, accurately automated process helps to reduce environment negative impact, optimize manufacturing resources and electricity power while our employees' safety had secure from complex and hazardous process.



## Green Building Certified



**Delta Rudrapur, India**  
LEED-INDIA Gold

- 2017 EUI : 88 < EUI Baseline : 210
- Historical highest energy saving rate: 76% (compared to commercial buildings)
- Saved approximately 2,920 MWh of electricity
- Reduction of approximately 2,666 tons CO<sub>2</sub>e
- Applied Technologies :
  - Natural Lighting
  - Energy-efficient HVAC Systems
  - Solar PV Systems
  - LED Street Lighting
- Waste Water Recycling Systems
- Rainwater Harvesting Systems

2008



**Delta Gurgaon, India**  
LEED Platinum

- 2017 EUI : 50 < EUI Baseline : 210
- Historical highest energy saving rate: 76% (compared to commercial buildings)
- Applied Technologies:
  - Exceeds 85% Natural Lighting
  - Smart HVAC Solution
  - High Efficiency Lighting System
- Water savings: 40% (compared to LEED design basis)
- Set up high SRI roof coating to reduce heat island effect
- Indoor Ventilation and Eco-materials design

2012



**Delta Thailand HQ**  
LEED (EBOM) Gold

- 2017 EUI: 657 EUI Baseline: 640
- Historical highest energy saving rate: 23% (compared to pre-renovation plant)
- Water savings: 35% (compared to LEED design basis)
- Set up high SRI roof coating to reduce heat island effect
- Applied Delta own technologies:
  - Solar PV System generates 3M kWh/year
  - Datacenter Solution
  - Energy Management Solution
  - Smart HVAC Solution
  - LED Lighting Solution

2018

In 2017, Delta Thailand Plant 5 (Headquarter) in Bangpoo Industrial Estate plans had been certified Leadership in Energy & Environmental Design (LEED) Certified by the U.S. Green Building Council (USGBC) in our existing building: Operations and Maintenance (EBOM) - Gold Level category by renovating the building energy-efficiently. For example, smart air-conditioning, lighting, energy-efficient elevators, avoiding invasion plants in the company's landscape and energy management information systems and solutions which are developed by the company are used. Presently, Delta Thailand is the first manufacturing factory in Thailand which has certified LEED-BOM.

Delta is willing to share its experience in energy-efficient building, low-carbon green buildings and green factory-office buildings through the Open House Activity to green building programs. This includes working with local environmental protection groups to promote environmental education programs and the energy-saving ideas of green buildings with the government, school, media, communities and the public.

To ensure sustainable share of renewable energy in the global energy mix, Delta utilizes its expertise in renewable (solar) energy for the energy conservation projects. In Delta's pursuit of replacing conventional energy sources with renewable energy, solar roofs are installed in all the three Thailand factories. All new factories within the group will be built as certified Green building while existing ones will have to work towards the same standard. For example, Delta's Plant 5 in Thailand has attained LEED Gold certification for existing building while India's factories are certified Gold and Platinum.

Delta's green building initiative has replaced 5,840MW/ year of electricity generated from natural gas sources provided by Electric Generating Authority of Thailand (EGAT) with off-grid solar energy generated from the building's solar rooftop in 2018. The amount of natural gas saved needed to provide the equivalent of 5,840MW/ year of electricity is about 240.96 mmcft/ year. Consequently, Delta's direct externality impact on the environment is demonstrated with its reduced dependence of fossil fuel, i.e., natural gas that is non-sustainable and produces carbon emission. The company plan to implement LEED standard to its new plant in Chachoengsao, Thailand in 2019.

Discover Delta group's 13 own green building and 4 donated green building at <https://bit.ly/2S81XuR>

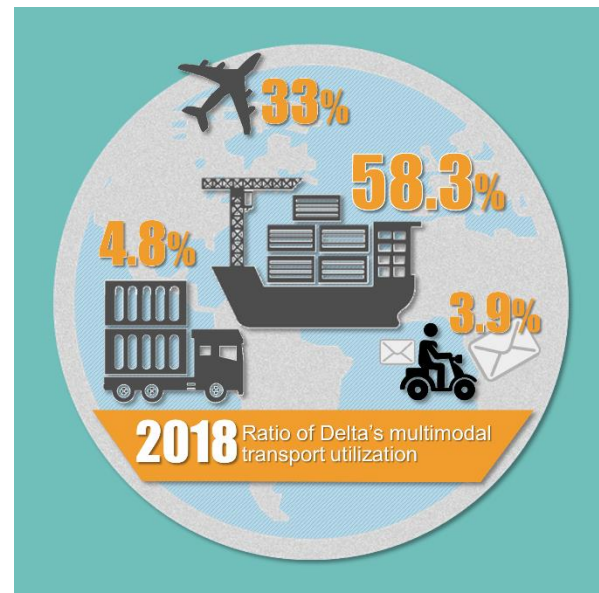
## Smart logistics modal plan

Delta Thailand Logistics function is mainly responsible for transporting domestic and international materials to the

production line, delivering finished products to our customers and managing all the relevant parties in the logistic chain in line with the "Green Logistics" approach. Delta is constantly working towards optimizing operations processes and minimizing the harmful impacts to the environment.

With our attempt to be greener and confident in IT security management, Delta has addressed the value of paperless work by sampling check of e-invoice process for out-going shipment and realize an impressive impact as following:

1. Ensure that inbound and outbound shipments are for full truck load (FTL) by loading trucks with as much cargo as possible. By doing this, the number of trips between the production base to port per day is reduced, warehouse cost is

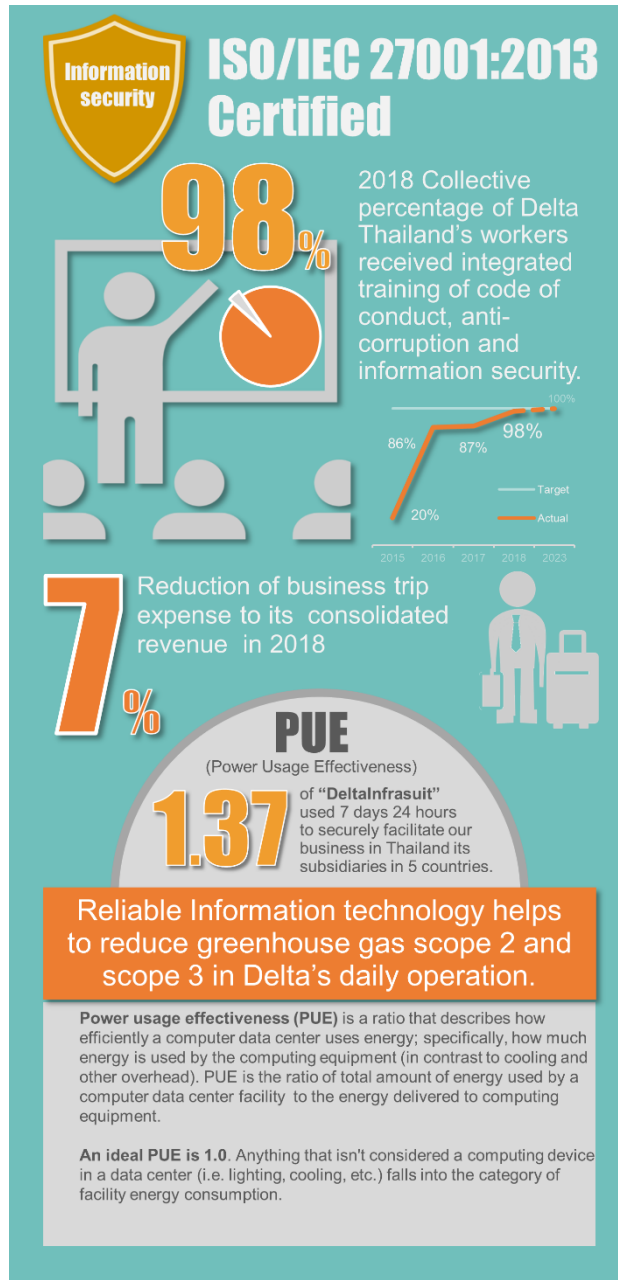


saved.

Just-in-time production is achieved and minimize empty backhauling.

2. Request freight forwarders at the point of origin to fill containers with freight to full container load (FCL) so that a large amount of shipments can be delivered in one trip without having to waste free space in the container and involve intermodal transport. Delta also encourages suppliers to use durable eco packaging to prevent damage to goods and materials during transport. If products are damaged, Delta is responsible for delivering replacements to the customer, which results in an increased transportation cost.
3. Use major carriers and freight forwarders to ensure high quality service standard and green logistics operations. Not only does our choice of freight counterparts guarantee efficiency in the transportation, it also protects the environment by reducing CO2 emissions.
4. Promote modal shift by using sea freight over air freight as sea freight is more energy efficient and more environmental-friendly.

In addition to its effort to reduced transportation environmental footprint, Delta encourage our stakeholder to reduce transportation and paper works in business process by utilized our secured on-line communication platform. IT Security for reliable on-line communication.



## Reliable on-line business process

On-line communication among Delta group and its business partners is Delta's effective tool to reduce GHG scope 3 from unnecessary transportation and business trip ; for instance, on-site stock checkup, material flow follow up, order fulfillment status, and design and business-related discussion. Delta strengthens its online operation by acquiring ISO/IEC27001 for its information security management system. In addition to Delta own product and solution utilization, this enables a secure flow of important information to support our customers and suppliers to ensure a sustainable cooperation.

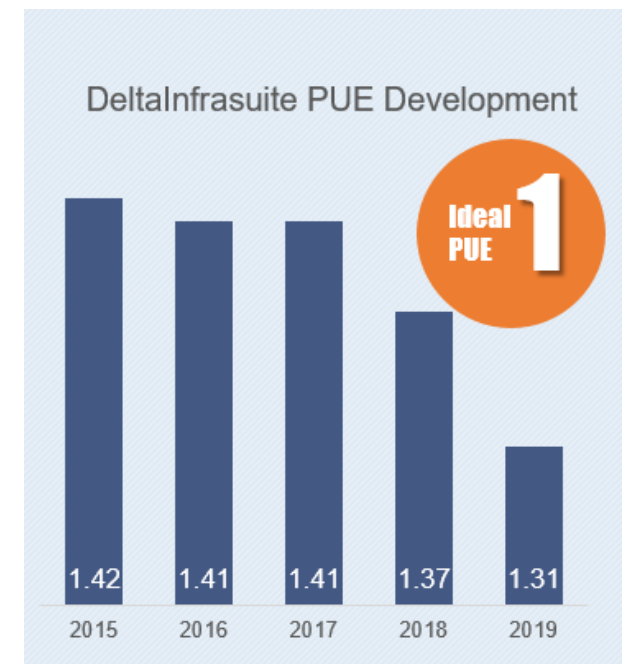
[ISO/IEC 27001](#) is formally specified as an information security management system (ISMS) and includes a range of activities concerning the management of information security risks. It is an overarching management framework taking care of:

1. Assessing the risks inherent to transmitting confidential information
2. Implementing information security measures through development, documentation and dissemination of methods
3. Building a management system to share roles and responsibilities, establishing an internal audit
4. Managing the risk evaluation process, developing countermeasures and understanding exceptions and ongoing improvements protecting our information is critical for a successful and smooth operation.

To ensure valuable information security and ethical communication, Delta communicate the Information security policy on our intranet. In addition, to raise

employees' awareness on this issue, the company target to conduct 100% IT security to its employees annually and target to 100% implementation in 2023\*. Up to the report period, there is no confirmed case of breaches of customer privacy identified leaks, thefts, losses of customer data or misuse of intelligence properties from outside parties or regulatory body to Delta's whistleblowing channel.

On top of transportation reduction, [Delta InfraSuite](#) help the company to optimize energy consumption with 1.37 [PUE](#) rate. This competitive performance finally help the company to reduce ghg scope 2 from IT 7/24 operation where represent approximately 1% of total energy consumption at Delta. Furthermore, Delta will continuously improve its data center's PUE to achieve its PUE 1.31 target in 2019.



## We ensure natural resources conservation

Outstanding emergence of pollution outstandingly raised our stakeholder's awareness of climate change. Delta realized regularly monitors its environmental performance and disclose it transparently to get related stakeholder feedback.

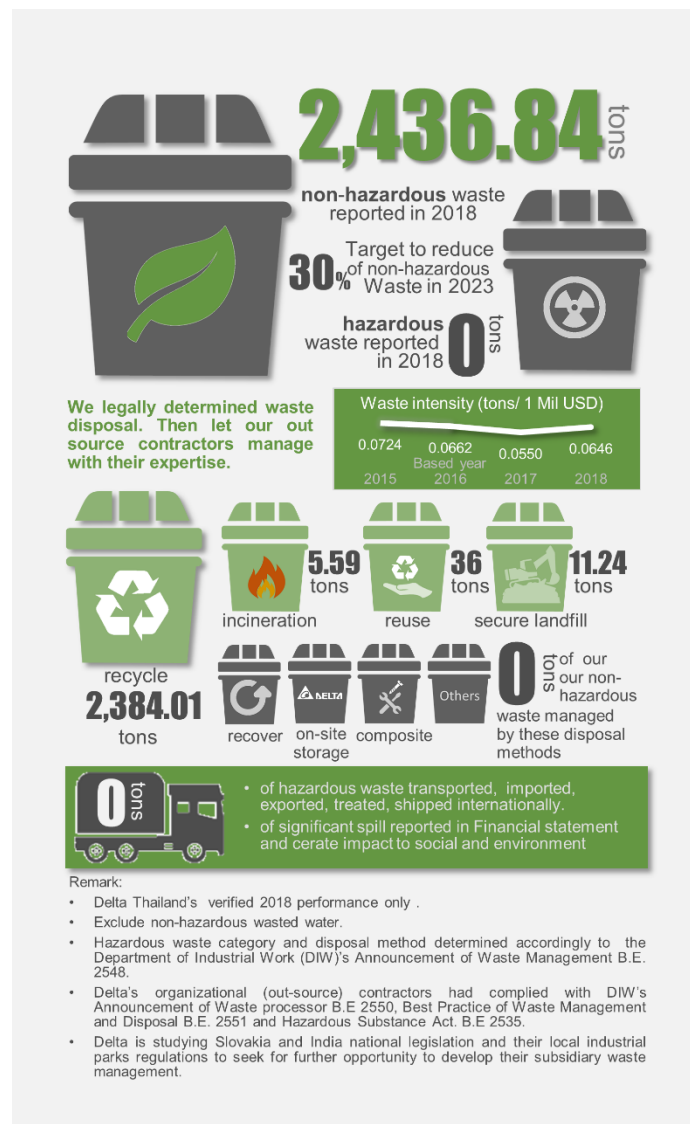
### Waste in Focus

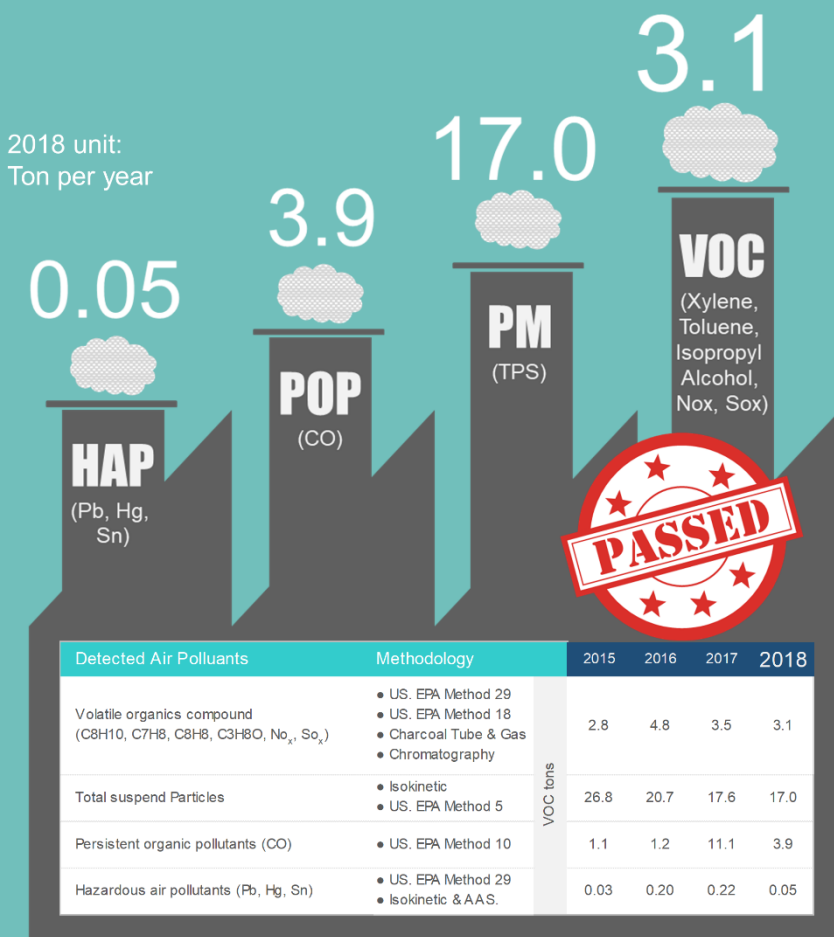
In consequence of Delta's [Management Standard for Environment-related Substances](#), Delta ensure that our stakeholders' and natural resources by counter checking our waste management will stay safe and sound for long-term. All of Delta's main plants divide waste into three categories: production waste, non-production waste and hazardous waste. Production waste includes metal waste, plastic waste, waste pallets, paper, and paper boxes, which are sorted, collected, and handed over to local qualified recycling businesses. General waste (non-production waste) had transported to garbage incinerators, composting, and landfill plants designated by the government by qualified garbage disposal businesses. According to the Department of Hazardous waste includes electronic waste, waste glass tubes and glass, and solvents which are also sorted, collected, and handed over to local qualified waste treatment businesses.

With 2016 based year, Delta targets to reduce 30% of non-hazardous waste from routine operation in 2023 (5% yearly). In the reporting period, Delta generated non-hazardous waste 2,436.84 tons. These 2,436.84 tons of non-hazardous waste which included recycle 2,390 tons, reused 36 tons, secure landfill 11.24 tons, waste to incineration 5.59 tons and 0 ton of hazardous waste, had transported to third party located in proper distance to manage. Total waste volume increased 747.15 tons or 44.21% compared to 2017 of 1,689.69 tons. This increment resulting from Delta Thailand's plants renovation and plant relocation. In addition, Delta is tracking this issue by using waste intensity (ton waste generation/million USD of revenue) as an indicator, waste intensity in 2018 was 0.0646 tons per 1 Million USD revenue which increase from 0.0550 tons per 1 million USD in 2017.

Due to business expansion and higher production requirement, Delta plans various waste reduction project in Delta's daily operation to minimize environmental footprint. In 2018, the company ran its waste reduction projects to reduce its production waste. In addition to waste reduction, 12.53 million baht or 0.024% of cost of goods sold in 2018 so reduced by following projects.

1. Size of our plastic runner for finish goods transportation had reduced. The mentioned mini runners which can be reused for several times help to reduce 3.5 tons of single-wooden carton.
2. Design for new tooling for reduce Silicone steel waste by increase sectional area metal sheet and modify tooling 5 part number leading to 60tons of metal waste reduction last year.
3. Work with 8 packaging suppliers to change material packaging form carton to recyclable plastic box 8 vendor use recycle box. 58 tons of packaging waste had reduce.





- Delta Thailand's VOC data had collected and measure accordingly to the Department of Industrial Works' announcement subjects "Standard of air emission discharged from manufacturing factory B.E. 2549" and Thailand Industrial Estate Authority's announcement on "Emission Standard for factory located in Industrial Estate" reference number 46/2541. In 2018 related indicators met these standard requirements.
- Delta Thailand and Slovakia's VOC data reported from the factories' stacks inspection where Xylene, Styrene, Toluene and isopropyl alcohol had reported.
- No<sub>x</sub> and So<sub>x</sub> reported from diesel generators used in India plants.

## We emit less

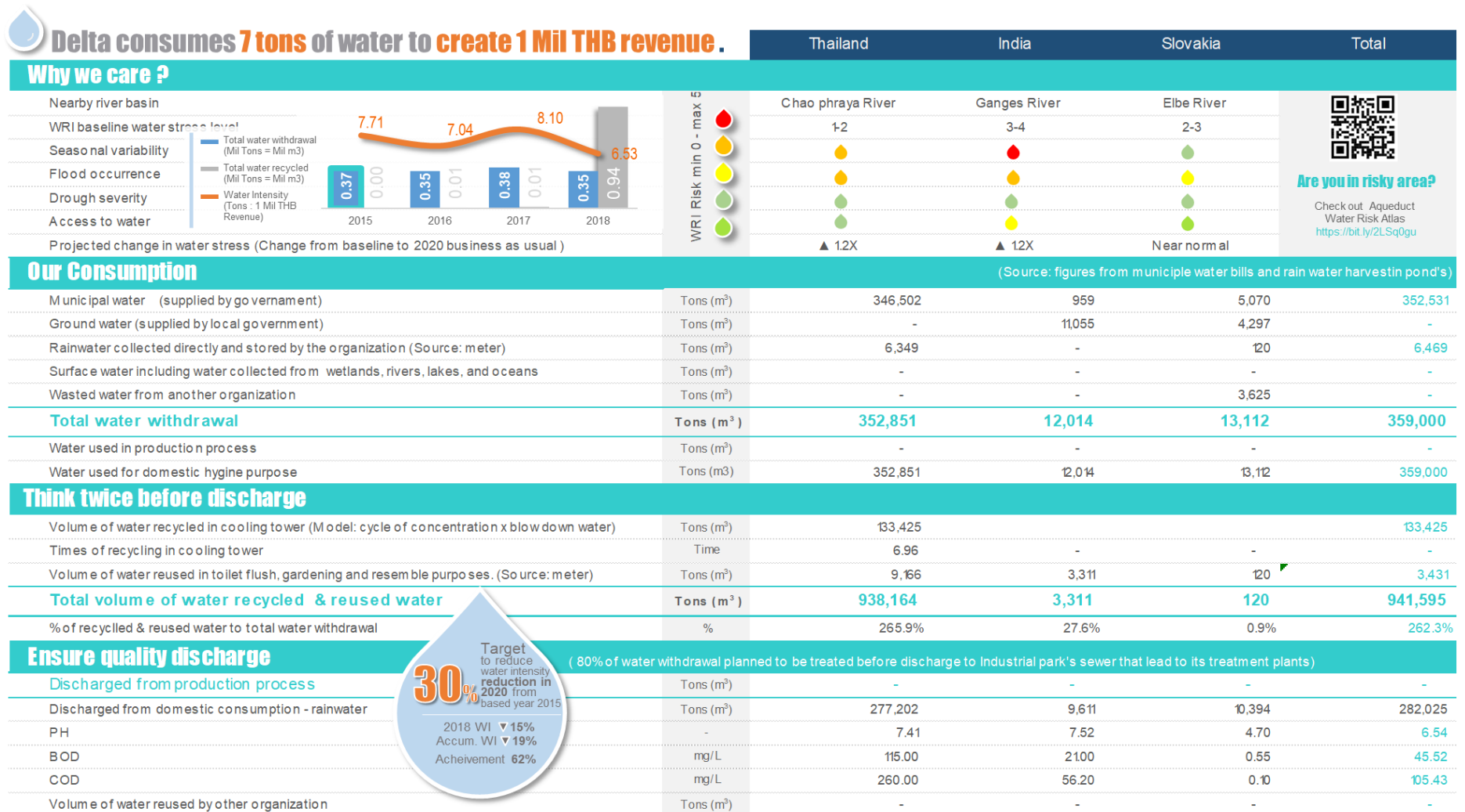
To mitigate environment health and well-being impact on our employee and surrounded community, Delta keeps monitoring our Volatile Organic Compound (VOC), e.g., Xylene (C8H10), Toluene (C6H5-CH3) Styrene (C8H8) and Isopropyl alcohol (C3H8O) discharged from our manufacturing process. Periodically, the company has carried out air quality monitoring at various stations. This is to make sure the air quality protection and control process is in norm and sufficient to mitigate environmental impact such as surface water quality, underground water quality, and soil quality. Charcoal Tube and GC/NIOSH, unambiguously and related methodologies have complied for close monitoring. VOC control is another way to mitigate impact to healthiness and wellness of the company's personnel's as well as neighbor communities.

Annually, the company proceeds its air quality measurement accordingly to the Notification of Department of Industrial Works subjected "[Standard Quantity of Pollutants Discharged from a factory B.E 2549 \(2006\)](#)", "[fication of Industrial Estate Authority of Thailand No.46/2541 Re: Prescribing of Air Pollutant Emission Ratio from the Stack in Industrial Estates, B.E 2541 \(1998\)](#)" and "[NIOSH standard](#)". To ensure the transparency, accuracy and compliance, Delta's air quality inspection is performed and assured by 3rd party specialist company. Proper methodologies such as US. EPA 5,10,18 and 29, Charcoal Tube and GC/NIOSH 1501 will be applied to each stationary sources.

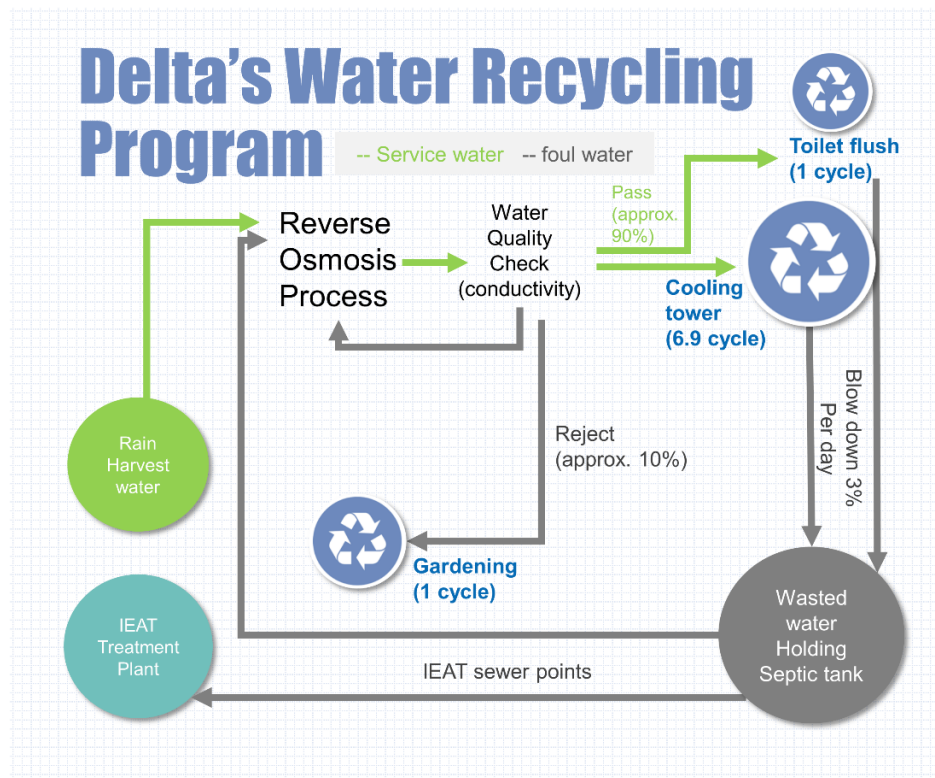
Delta's 2018 pollution inspection result ensured all the key parameters met the local standard and regulations. However the company targets to reduce 5% of VOC yearly (30% in 2023 from base year 2016), the company achieve 12% of VOC reduction when compared with 2017 and 36% from based year. 17 tons of total suspend particles had discharged from our factory, Hazardous air pollutants (HAP) discharged from our process. Suspended Particulate (Particulate matter - PM) are inspected at our stacks by using US.EPA Method 5 annually. No significant chemical spill reported from any location. 1.3 tons of No<sub>x</sub> and SO<sub>x</sub> had discharged from India sites' diesel generators while xylene, toluene, isopropyl alcohol and styrene of 1.80 tons had reported as Delta Thailand's volatile organic compound discharged from its stacks.

## We maintain water security

The company's water management had been interested by our stakeholders. Such interest is not only their concern of global change in baseline water and drought severity, but also their concern about chemical contamination to natural water source from technology industry. Although water is not our production factor or used in manufacturing process, the company has taken many measures to conserve clean and accessible water for our local community. Based on Delta's water consumption breakdown, 95% of the water used by Delta's own operation sites for domestic and sanitary purpose (95%). According to our water bill, municipal water supplied by governmental offices is the main source for Thailand, India and Slovakia plants.



In 2018, the company had consolidated information about the [rivers near Delta's major operation sites](#). This information is presented without any right of ownership. All the information in this booklet is from Wikipedia, the world's largest free online encyclopedia, to be used as reference for the Delta Group's sustainable development study and performance improvement on natural resource management tracking. In this booklet, readers will learn the size of nearby water sources, national or international protection status, biodiversity values (such as species diversity and endemism, and public highlighted number of protected species), and value of the water source to your local communities and indigenous people. Finally, this resource of consolidated data should help to raise awareness of water and natural resources conservation specific to each area.



Delta estimates that 80% of our total withdrawal water will be discharged as wasted water. Our discharged water has handled and professionally treated by Gusco, IEAT's Industrial Park's environment management agent, with reliable standard, methodologies and assumption. However, Delta keeps tracking the quality of our discharged water twice a month to ensure our biodiversity will be saved whenever these water discharge to the surrounded canals. According to 2015-2018 (as at Mid December) wasted water quality inspected by using Azide Modification method, the biological oxygen demand (BOD) is 85.1 milligram/ litre in average which is under 500 milligram/ litre as the BOD standard for factory located in Export Zone of the industrial park.

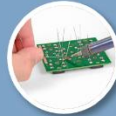
According to Delta group's participation in Paris climate agreement (COP21), Delta take 2015 as base year to measure its implementation of various water-saving at main sites, such as recycling the condensed water for cooling tower, gardening, toilets flush. or irrigation. The company adopts water-saving taps and water-saving sanitary wear, reducing water output from taps and the water level of cisterns, managing the excess water of cooling towers as well as reusing the wastewater from RO-system water purifiers.

With target to reduce 30% water consumption intensity (km<sup>3</sup>/MUSD consolidated revenue) in 2020, we have a consolidated reduction of 18.6% in 2018 compared to that in base year 2015. Since 2015, no wasted water from our production process discharged to our local industrial parks sewage points.

Percentage of employees expose to occupational disease risk



Key risk exposed processes



#### Grinding process

Exposure to particulate Matter (TSP)

#### Soldering and coating process

Isopropyl alcohol, Tin, Lead, Aluminum and acetone

#### Assembly and cleaning processes

Exposes to thinner, acetone and organic solvents (toluene, xylene, styrene)

#### Specific checkup methodology

- Spirometry

**0 occupational disease rate since 2016**

- Spirometry
- Aluminum
- Toluene
- Xylene
- Styrene
- Tin
- CBC
- Isopropyl alcohol

- CRE
- SGPT
- MEK
- Methanol
- Acetone
- Phenol
- Tin
- Isopropyl alcohol

#### Respiratory abnormality detection %



**0% of hazardous substance-related abnormality**

found from risk exposed employee's blood and urinal checkup (aluminum, toluene, xylene, styrene, MEK, isopropyl alcohol, methanol, acetone, phenol and tin) since 2012.

*Occupational disease record and rate calculation based on Thailand Labor Department's guideline*

## The deeper we check

Delta's eco-efficient operation is not only help to lessen environmental impact, but also mitigate occupational disease rate. Delta realizes that 45% of our total Delta employees involved in routine work/ activities which exposure to risk to occupational diseases announced by the Ministry of Labor of Thailand dated August 15, 2007.

Though the company has establish Personal Protective Equipment Manual and provide work instruction training on occupational health and work environment to our new employees. Delta constantly monitor the exposure to hazardous substances and the list of materials used. The results are used for aligning work practices or make engineering improvements to reduce the risk of occupational illnesses. Delta provides employees engaged in hazardous operations, with annual high-risk group health exams and then providing health management according to their health exam results.

The company target 0 volatile organic compound impact to its workers' health, in 2018, 4,947 employees whose works expose to hazardous factors including noise, particulate matter, mineral oil, acetone, x-ray, ionic ray, lead, tin, light, thinner and heat had encouraged to participate annual high-risk group checkup performed by Bangkok Occupational Medicine Center's physicians. 0% of hazardous substances contamination in blood and urine found from recent specific checkup ensures both immediate and chronic effects or diseases from manufacturing, stamping, soldering, labor-intensive work, grinding and chemical-related processes; for instance, had properly managed. This annual action aims to prevent our employees and subcontract from disease caused by chemical agents and specific process such as deafness from sound-intensive work, chronic physical hazard, occupational respiratory diseases, occupational dermatitis diseases, occupational musculoskeletal disorders, occupational cancer and impact on reproductive system. Due to the pollution issue in Bangkok and metropolitan areas, respiratory abnormality detection had slightly increase from 2.4% in 2017 to 4% in 2018. Finally, without any medical treatment required for these specific employees, ZERO occupational disease rate had reported for the 3<sup>rd</sup> consecutive years.



## Biodiversity

All of major Delta's own sites are located in industrial parks, this minimize the environmental impact on the local ecosystem, biodiversity and habitats during its operations. Delta realizes that protecting biological diversity is important for ensuring natural ecosystems which provide clean water and air, and contribute to food security and human health. Biodiversity also contributes directly to local livelihoods, making it essential to reduce poverty, and thus achieve sustainable development.

The monitor Lizard (*Varanus salvator*), semi-aquatic local wetland habitat included as protected reptile species [ranked 91 \(page 113\) of the appendix list of Ministerial Regulations B.E 2546 of Thailand's Ministry of Natural Resources and Environment](#) according to [Wildlife Preservation and Protection Act, B.E. 2535](#) , has been simply investigated as our headquarter(approximately 70,000 s.q.m)'s environment management indicator.

Generation by generation, local monitor lizard help to keep the environment balance by eating fish carrions and human's leftover and animal carrions in nearby wetlands. Since most of Bangpoo Industrial Estate's surrounding areas are fish farms and swamps, huge number of fish were killed when when the temperature change. With such expertise in janitorial habit, Delta and our neighbor communities have protected from plague resulting from bacteria. Unless these local

crawlers are recognized by the [IUCN Red List](#) as Least Concern species (LC), they help to protect Delta employees and our neighbor communities from plague resulting from bacteria with such expertise in janitorial habit over 30 years we have been being here. ♥

## Strong action with partnership

In addition to the IEAT's certificate process to affirm its close monitoring of Delta Thailand's environmental performance, the communication channels "[Whistleblow@deltathailand.com](mailto:Whistleblow@deltathailand.com)" and "[OHSC@deltathailand.com](mailto:OHSC@deltathailand.com)" are always available to the public to report any cases in violation of environment-related regulations or human rights. Delta's Safety Health and Environment Committee has established to drive, monitor, review and improve the company's environment-related issues. The committee also provides appropriate countermeasures for any confirmed cases. Up to 2018, there was no any case of non-compliance with environmental laws and regulations, significant fines for non-compliance with environmental laws and regulations, non-monetary sections for non-compliance with environmental laws and regulations nor Cases brought through dispute resolution mechanism.

Better together



# Better together

The contribution of innovation to natural resources conservation and responsible supply chain does not only create positive impact to Delta, but also create vital impact to Delta's stakeholders. The shared values have not limited to Delta's value chain, but spreads to partnership with global citizen to make a smarter and greener future. In long-term, to unceasingly maintain inclusive well-being against the global changing scenario, Delta personnel's potential and social voluntary participation must be unleashed. In addition to our internal society, sound sustainable development practices enables long-term mutual benefit to its externalities.

## Employment with care

According to customers and regulator engagement in 2018, Electronics industry characterized by organized labor, maintaining good relations with employees is particularly essential for the success of a business's operations and innovation. Delta's employees represent one of a company's most important assets. In addition to employees' capabilities development, Delta, as a multinational enterprise, endeavors its employees' wellness by providing a safe and healthy working environment, fair treatment and non-discrimination, fair remuneration and supporting freedom of association. The company always complies with local and international standards on labor and human rights. In addition, these

standards have applied equally across all operations within the organization. The key focus of the criterion is on companies' policies to manage labor relations, related KPIs, equal employment and development opportunities, human rights and freedom of organization.

As a world-class enterprise and responsible corporate citizen, **Delta Electronics (Thailand) PCL. commits to providing our employees with an environment to develop to their full potential.**

Delta's Labor & Human Right Risk Assessment including risk matrix and mitigation process has reviewed by Human right working team and SD committee on annual basis. To accomplish this objective, the Company has implemented the group-wide [Delta Employment Policy](#) (which in-line with ISO26000) and disclose on our website to facilitate the company's personnel to acknowledge their rights and obligation. Furthermore, the policy can be used by related business partner as the guideline for review the company's operation. **The 9 pillars of Delta's employment policy** to retain our innovative and skillful employees are as following:

### 1. Law & regulation compliance

To comply with applicable labor or employment laws and international standards wherever it operates. To fulfill this commitment, the Company constantly strives to comply

with local regulations and to meet international labor and human rights standards, including the Responsible Business Alliance Code of Conduct (RBA), Universal Declaration of Human Rights, International Labor Office Tripartite Declaration of Principles, [OECD Guidelines for Multinational Enterprises](#), and more. Minimum 1 month notice for relocation case; for instance, typically provided to employees and their representatives prior to the implementation of significant operational changes that could substantially affect them accordingly to [Thailand's Labor Act B.E 2541 clause 120](#).

Since 2016 to 2018, **no grievance** in the workplace such as, but not limited to, a breach of the terms and conditions of an employment contract, raises and promotions, or lack thereof, as well as harassment and employment discrimination had raised by employees towards Delta.

### 2. Freely chosen employment

To prohibit hiring forced labor or child labor, all jobs at Delta are voluntary and employees can voluntarily leave the company within a reasonable period after giving notice. The company prohibit hiring forced or child labor to ensure that all jobs are taken voluntarily and employees can voluntarily leave the company within a reasonable period after resigning officially.

Indicators	Unit	Boundary			2018			2017			2016		
		TH	SK	IN	Male	Female	Total/ AVG	Male	Female	Total/ AVG	Male	Female	Total/AVG
Employee turnover	head	•	•	•	215	375	590	177	271	448	125	183	308
Employee turnover rate	%	•	•	•	6.9%	4.7%	5.3%	6.7%	3.4%	4.2%	5.6%	2.3%	3.0%
Voluntary turnover rate <sup>8</sup>	%	•	•	•	95.3%	95.2%	95.3%	98.3%	92.3%	94.6%	94.4%	69.4%	79.5%
Employees turnover by area													
• Thailand	head	•			102	339	441	129	246	375	113	153	109
% to total workforce	%	•			3.3%	4.3%	4.0%	4.8%	3.1%	3.5%	5.1%	1.9%	1.1%
• Slovakia	head		•		25	29	54	36	25	61	6	14	20
% to total workforce	%		•		0.8%	0.4%	0.5%	1.4%	0.3%	0.6%	0.3%	0.2%	0.2%
• India <sup>2</sup>	head			•	88	7	95	12	0	12	6	16	22
% to total workforce	%			•	2.8%	0.1%	0.9%	0.5%	0.0%	0.1%	0.2%	0.2%	0.2%
Permanent employees turnover by age													
• Over 50 years old	head	•	•	•	10	18	28	3	21	24	7	56	63
% to total workforce	%	•	•	•	0.3%	0.2%	0.3%	0.1%	0.3%	0.2%	0.3%	0.7%	0.6%
• 30-50 years old	head	•	•	•	68	250	387	58	72	130	31	64	95
% to total workforce	%	•	•	•	2.2%	3.1%	3.5%	2.2%	0.9%	1.2%	1.4%	0.8%	0.9%
• Under 30 years old	head	•	•	•	137	107	175	116	93	209	87	63	150
% to total workforce	%	•	•	•	4.4%	1.3%	1.6%	4.4%	1.2%	2.0%	3.9%	0.8%	1.5%

#### Remark

1. Voluntary employee turnover rate = (headcount of total leavers - (headcount of over 50 years-old retired leavers + headcount of dismissal for disciplinary reasons) ÷ headcount of total leavers"

## 3. Humane Treatment



Delta refer to Universal Declaration of Human Rights (UDHR) and Responsible Business Alliance (RBA)'s guideline to prohibit any form of harassment or inhumane treatment, including sexual harassment, abuse, slavery, corporal punishment, threatening, exploitative, mental or physical coercion or verbal abuse of employees. As such, Delta have incorporated human rights principles, namely RBA's Code of Ethics and ILO's labor standards, into the Company's operations and developed our human rights policy based on the UN's Guiding Principles on Business and Human Rights – UNGP. **The company commits to protecting, respecting and supporting our employees, business partners and vulnerable individuals or groups in all our business processes** as outlined in the Company's [Human Rights policy](#). We will ensure that human rights are respected and that human rights violations in all forms are prevented throughout the Company and our value chain. In this policy; roles and responsibility of related functions, coverage of prevention, communication channels, Protection of whistleblowers and confidentiality, investigation and penalties and remedy guideline, had clearly communicated. In 2018, no any form of human right violation , harassment or inhumane treatment, violation of labor right had been noted raised through [whistleblow@deltathailand.com](mailto:whistleblow@deltathailand.com).

In January 2018, Delta Electronics (Thailand) PCL. held the "Human Rights in Business Process" training seminar at the company head office at Samutprakarn. Mr. Youngyut Pakdounjan, Delta Human Resources Development Director welcomed and Mr. Sarawut Saowapab and Mr. Nitipat Satapanasut, judges of the Samutprakarn Provincial Court, with three delegates from the Samutprakarn Provincial Courts to teach the program to 40 Delta employees representatives from operations and administrative positions. Employees' right, communication channels, grievance and remedy mechanism had been repeated to the participated employees.

## 4. Non-Discrimination



The company hires its employees based on their capabilities and not to discriminate based on race, religion, nationality, age, gender, sexual orientation, disability, or any other reason which is protected by law for recruitment, training, awards, promotion, termination, retirement, or other employment conditions.

Delta recruits, appoints and develops employees based on their capacities, and treats all in the same way, regardless of race, faith, color, nationality, age, gender, sexual orientation, marriage status, political affiliation or disability. Due to business expansion in 2018, official (monthly) employees account for 47% of the total while another 67% are in production, operation and other function positions. Employees are 25% males and 75% females. Direct employees account for 76%, and 41% of the employees are under the age of 30. For management, 67% are native to the country where they are employed and 42% are female. 96 disabilities work and get vending stalls at Delta to ear.

Delta believes that diversity of workforce By the end 2018, Delta Thailand and its subsidiaries had a total workforce of around 11,000. The distribution of diversity in employee composition can be illustrated as followings

Indicators <sup>3</sup>	Unit	Boundary			2018			2017			2016		
		TH	SK	IN	Male	Female	Total/AVG	Male	Female	Total/AVG	Male	Female	Total/AVG
Salary-based workers	head	●	●	●	2,524	1,088	3,612	2,297	1,254	3,551	1,679	1,130	2,809
Daily wage workers	head	●	●	●	602	6,874	7,476	363	6,777	7,140	553	6,862	7,415
Total permanent workforce (Sub- contract and other workers excluded)	head	●	●	●	3,126	7,962	11,088	2,660	8,031	10,691	2,232	7,992	10,224
Other workers <sup>1</sup>	head	●	●	●	48	78	126	43	75	118	40	71	111
Permanent Employees by areas	head	●	●	●	3,126	7,962	11,088	2,660	8,031	10,691	2,232	7,992	10,224
● Thailand	head	●			1,796	7,642	9,438	1,692	7,764	9,456	1,621	7,752	9,373
● Slovakia	head		●		329	242	571	316	229	545	321	209	530
● India <sup>2</sup>	head			●	1,001	78	1,079	652	38	690	290	31	321
Employees by age	head	●	●	●	3,126	7,962	11,088	2,660	8,031	10,691	2,232	7,992	10,224
● Over 50 years old	head	●	●	●	140	177	317	147	165	312	120	157	277
● 30-50 years old	head	●	●	●	2,261	5,688	7,949	1,862	5,557	7,419	1,576	5,473	7,049
● Under 30 years old	head	●	●	●	725	2,097	2,822	651	2,309	2,960	536	2,362	2,898
Employees by level					3,126	7,962	11,088	2,660	8,031	10,691	2,232	7,992	10,224
● Executives (level 10-12)	head	●	●	●	14	4	18	15	3	18	18	3	21
● Middle Management (level 7-9)	head	●	●	●	244	291	535	225	285	510	212	203	415
● Senior and Operative (level 3-6)	head	●	●	●	1,542	1,522	3,064	1,238	1,601	2,839	1,018	1,598	2,616
● Daily employees (level 1-2)	head	●	●	●	1,326	6,145	7,471	1,182	6,142	7,324	984	6,188	7,172
Total New Employees	head	●	●	●	480	624	1,104	277	371	648	165	583	748
New hire rate	%	●	●	●	15.4% <sup>6</sup>	7.8%	10.0%	10.4%	4.6%	6.1%	7.4%	7.3%	7.3%
Hiring cost	1,000THB : head	●	●	●			13.7			18.3			11.2
New Employees by areas	head	●	●	●	480	624	1,104	277	371	648	165	583	748
● Thailand	head	●			256	571	827	177	334	511	137	557	694

Indicators <sup>3</sup>	Unit	Boundary			2018			2017			2016		
		TH	SK	IN	Male	Female	Total/ AVG	Male	Female	Total/ AVG	Male	Female	Total/ AVG
% to total workforce	%	•			8.2%	7.2%	7.5%	63.9%	90.0%	78.9%	83.0%	95.5%	92.8%
• Slovakia	head		•		38	31	69	11	21	32	5	14	19
% to total workforce	%		•		1.2%	0.4%	0.6%	4.0%	5.7%	4.9%	3.0%	2.4%	2.5%
• India	head			•	186	22	208	89	16	105	23	12	35
% to total workforce	%			•	6.0%	0.3%	1.9%	32.1%	4.3%	16.2%	13.9%	2.1%	4.7%
New Employees by age	head	•	•	•	480	624	1,104	277	371	648	165	583	748
• Over 50 years old	head	•	•	•	2	0	2	0	0	0	0	0	0
• 30-50 years old	head	•	•	•	22	19	41	30	56	86	13	58	72
• Under 30 years old	head	•	•	•	456	605	1061	247	315	562	152	525	677
Number of employees entitled to maternity / parental leave <sup>7</sup>	head	•	•	•	323	7,338	7,661	316	8,031	8,347	321	7,992	8,313
• Number of employees taken maternity / parental leave <sup>4</sup>	head	•	•	•	0	273	273	1	276	277	0	374	374
• Number of employees return to work after maternity / parental leave	head	•	•	•	0	253	253	1	276	277	0	374	374
Parental leave retention rate <sup>5</sup>	head	•	•	•	NA	93%	93%	100%	100%	93%	NA	100%	93%
Ratio of basic salary and remuneration to total compensation	%	•	•	•	41%	59%	100%	31%	69%	100%	30%	70%	100%

Remark:

- Terminologies of employee categories are as follows
  - Permanent or Monthly employees refer to employees who are included in the salary-based payroll
  - Daily employees refer to employees who are included in the daily-wage payroll
  - Direct employees/laborers refer to employees whose working hours relate to manufacturing standard time and productivity and are mostly stationed in the production lines.
  - Indirect employees/laborers refer to employees in supporting functions which are not related to manufacturing standard time and productivity targets.
  - Other workers include canteen workers and nurses in the medical room which increase due to warehouse expansion to other warehouse building in Thailand. These workers work 8 hours a day and 6 day a week though the time they start and finish their works differ from Delta employees
- Additional manpower in India resulting from R&D & operation expansion (<https://bit.ly/2HYhCqJ>)
- Major employee-related information has collected from SAP system based on ISO 9001 standard.
- According to Slovakia labor law, maternity leave is entitle for male workforce.
- Return to work rate = Total number of employees that did return to work after parental leave
- Due to business expansion, recruitment of experienced research and development engineers, process engineers and male operators for labor-intensive tasks leading to higher hiring cost ratio of male employee.
- Up to the reporting period, Delta has no indigenous worker, no incidents of violations involving rights of indigenous people happen in our operation.

## 5. Working hours

To establish a management mechanism for working hours in line with labor laws and regulations. In spite of operating under special conditions required, employees allowed at least one day off for every seven working days. Delta refer to [Responsible Business Alliance \(RBA\) code of conduct](#) which refer to [Thailand's Labor Protection Act B.E. 2541](#) to monitor its employee's working day, working hours, overtime an holiday. Annually, Delta's working hours and holidays had informed to its employees not less than 30 days before the next fiscal year. The working calendar had announce and be available on the company's [intranet site](#) for employee to plan their schedule.

In the reporting period, the company had studied its worker's working hour by using sampling check method. Delta employee had not required to work overtime on a working day and/or holidays unless the employee's prior consent is obtained on each occasion, exceed overtime had found. In spite of validity of employees' voluntary OT applications, their

overtime records are not over 36 hours a week accordingly to Thailand's local regulation, Delta aim to align with RBA code of conduct regarding working hours by using following measures:

1. Before the working period, employees will raise their overtime requisition and/or RBA working hours waive request form through OA system. The forms must get approval by related supervisors, without the mentioned approval, the company will not responsible for their overtime pay and related supporting facilities.
2. Plant manager and operation vice president will have weekly OT summary from payroll system for workforce planning.
3. The company utilizes Delta Smart Manufacturing system and on-line application to shorten certain process while facilitating 24-hours operation run. Cloud-based real-time material stock balance check, auto component insertion, cloud-based production process simulation; for instance, can help to release labor-intensive tasks and shorten the reporting line for smooth operation.
4. The company keep training its operation to have overall skills through their related process. With clusters of multi-skill operators, skilled workforces can replace each other.
5. In certain/ urgent condition that exact employees is required for overtime work, the supervisors/managers will consider skilled labor overtime record. If that operators' OT excess the OT limitation, other operator will be replace to have the job done.

## 6. Compensation and Benefits

According to the company's [Remuneration and Welfare Policy](#) which is in-line with [Thailand's National Wage Committee Notification on Minimum Wage Rate \(No.9\)](#) Delta Electronics (Thailand) Public Company Limited places great importance on the remuneration package of its employees to ensure reasonable remuneration based on individual performance and in line with the Company's operation performance. Since the agreement signing day, all new employee will be informed about their role, working day, code of conduct, communication channel and their compensation and benefit by access [Welcome onboard!](#), a guidebook for new employees and will be repeated on the Orientation day. In addition, the Company also places importance on remuneration by market benchmarking so that remuneration is fair within the organization and competitive with other companies. The Company has set the following guidelines:

1. Employment and Hiring shall be conducted with consideration for the necessity and appropriateness of a job. The hired employee must have the academic background, experience and ability to fit the position. He/she must also possess qualifications in accordance with the Company's rules and regulations;
2. Command line and job division: The Company shall organize a command line and job division so that a job's scope of responsibility and position are clear and suitable to the nature of the Company's business operation. The Company shall regularly review this part of its policy.
3. The Company manages remuneration, salary and wages fairly by taking into account factors such as qualifications, experience, job grade, position, responsibility and individual performance; when benchmarking with the salary rate of other companies with a similar business nature; the domestic wage rate, market conditions and demand and the Company's operation performance. In addition, the Company reviews the remuneration package in collaboration with labor unions every year.

### Comparison of Delta Thailand employee's average base salary and Thailand's minimum wage



Daily-waged Employees	0.35	0.49
Operative employees	0.37	1.38
Management	0.84	1.70

- According to Thailand's Ministry of Labor's announcement No. 9 effective April 2019, minimum wage is 328 Thai baht per day x 30 days.
- Most of female employee in operative and management level are buyers, sales and business coordination while male are in engineering field.

4. Welfare: The Company has a policy to take care of its employees' health and working environment to ensure their performance and efficiency. The Company also has policy to lighten costs by providing welfare for the employees that is comparable with similar companies in the same industry or as prescribed by the laws. In addition, the welfare committee conducts monthly reviews of employee welfare.

	Employee benefit	Performance-based	Frequency					Eligible for			
			Daily	Monthly	Quarterly	Yearly	Irregularly	Daily employee	Staff	Management	Executive
Short-term	Diligent bonus <sup>1</sup>	●	●	●				▲	▲		
	Yearly diligent bonus <sup>1</sup>	●				●		▲	▲		
	Productivity achievement incentive	●		●				▲	▲	▲	
	Quarterly incentive	●			●			▲	▲		
	Language ability and experience surplus entry benefit <sup>2</sup>						●	▲	▲	▲	▲
	Patent reward	●					●	▲	▲	▲	▲
	Overtime	●		●				▲	▲		
	Holiday pay and holiday overtime pay	●		●				▲	▲	▲	
	Year-end bonus	●				●		▲	▲	▲	▲
	Annual increment	●				●		▲	▲	▲	▲
	Night shift allowance		●	●				▲	▲	▲	
	Transportation		●					▲	▲	▲	▲
	Uniform and anti-static slippers					●		▲	▲	▲	
	Job-based personal protection equipment		●				●	▲	▲	▲	▲
	Annual checkup					●		▲	▲	▲	▲
	Employees life insurance					●		▲	▲	▲	
	Self medical fee subsidy					●		▲	▲	▲	▲
	Self dental fee subsidy					●		▲	▲	▲	▲
	Living cost subsidy (daily meal)		●					▲	▲	▲	
	Free drinking water *	●	●					▲	▲	▲	▲
	Family funeral support						●	▲	▲	▲	
	Cemetery fund for fatality at work						●	▲	▲	▲	▲
	Meal allowance for business trip						●	▲	▲	▲	▲
Short-term	Breastfeeding facilities		●					▲	▲	▲	▲
	Vacation leave					●		▲	▲	▲	▲
	Training and work-outside expense subsidy						●	▲	▲	▲	▲
	Maternity leave						●	▲	▲	▲	▲
	Graduation leave						●	▲	▲	▲	▲
	Meal allowance for business trip						●	▲	▲	▲	▲
	Free EV car charger *		●					▲	▲	▲	▲
	Dormitory for foreign staff			●				▲	▲	▲	
	Islamic prayer room		●					▲	▲	▲	▲
	Facilities for disables		●					▲	▲	▲	▲
	Friend for friend emergency support						●	▲	▲	▲	
	Annual recreation trip					●	●	▲	▲	▲	▲
	Free alternative language courses (English,Thai, Mandarin)					●	●	▲	▲	▲	▲
Long-term	Family education bursaries					●		▲	▲	▲	
	Medical fee subsidy for family *					●		▲	▲	▲	
	Dental fee subsidy for family *						●	▲	▲	▲	
	Education fee subsidy (for post-graduate degree) *					●		▲	▲	▲	
	Provident fund					●		▲	▲	▲	▲
	Social assurance			●				▲	▲	▲	▲
	Voluntary early retirement package	●				●		▲	▲	▲	▲
	20 years disciplinary reward (2018)*	●					●	▲	▲	▲	▲

Remark:

\* Delta's new welfares introduced during 2016-2018. All Delta new employee will be notified

1. Managers and executive level's time records are not considered as compensation and benefit evaluation.

2. Included in salary base.

3. The stated benefits are not eligible for part-time employee

5. The company consider setting up compensation schemes for management and other employees to provide long-term incentives when appropriate, such as employee stock ownership plan (ESOP). In 2010, Delta raised the proposal of employee's stock option plan as agenda item 2 into its 1/2010 [Extraordinary General Meeting of Shareholders](#). The proposed stock option is to create unity among directors and employees in many locations of the company and its subsidiaries as one team, one company. With the company's significant growth at that time, there will be many new businesses and new teams to add to create more value. As in the past 2 ESOP scheme in year 2000 (DELTA-W1) and year 2005 (DELTA-W2), providing directors and employees with additional incentives through the grant of warrants has been a proven effective tools in maintaining and promoting loyalty as well as improvement of personal competency for continued success and growth of the Company.

This agenda item must be approved with not less than three-fourths of the votes of the shareholders attending the meeting and having the right to vote. On the other hand, shareholders holding an aggregate number of shares exceeding 10 percent of the votes of shareholders attending the meeting must not oppose the offering of warrants to the directors and employees of the Company and its subsidiaries under ESOP 2010. Finally, the objection of this Agenda item was made by the amount of 117,875,122 votes, representing 10.74% of the total votes of the shareholders attending the meeting, this Agenda item was disapproved. However, due to the company's healthy growth, the company keep studying ESOP

In addition to public information available at <https://www.deltathailand.com/en/careers>, Delta employee benefit has described in above table. The company provides employee compensation and benefits that meet applicable laws, including industry-comparable wages, holidays with pay and legally stipulated welfare. In addition to standard life insurance and healthcare (including disability and hospital admission), operative and executive staff are eligible for short-term and long-term incentives based on their years of service and ESG performance. According to the 2016-2018 financial statement, the company's provision for long-term employee benefits is set at an average of 3% of consolidated revenue (7% of basic salary). To optimize benefit and maintain transparency, the jointly-establish fund has managed by TMB Bank Public Company Limited. (Find 2018 [Annual report](#) page 119 and 164). As at December 2018, the weighted average duration of the liability for long-term employee benefit of the company and its subsidiaries is 9-21 years (Delta Thailand only : 13 years )

## 7. Freedom of Association



To respect the rights of the employees to associate on a voluntary basis, to organize labor unions and to establish employee communication channels according to the local regulations.

According to Delta's Human Right policy clause no. 1.6 The Company allows its employees the freedom to associate or have affiliation with groups whose activities are not in conflict with the company's code of ethics and will not have negative consequences on the Company's image or economic results. In the reporting period, Delta supported various affinity groups activities ran by its employees. Sample of Delta affinity group's key activities happened in 2018.



**Paint for Good Deed by OOm Plaeng group:** OOm plang group founded by Delta's engineers and technicians since 2012. The name Oom Plaeng means "support the better change". When Delta brand has not renowned, the group leader was asked for help by a temple in his hometown to re-paint the building since the abbot misunderstanding that Delta is the brand of paint manufacturer company. However, this misunderstanding has guide the group to additional opportunity to bring up volunteer spirit among the members while maintain religious spirit in rural society.

After the first activity, the group had continuously helped to paint other temples. 60 members from manufacturing-orient functions pay their holidays in turn to paint over 10 temples a year. All the resources used by this activity are donated and voluntary supplies by the group's participant. To keep group's outstanding result and strong action, Delta partially support the paint expense and arrange free transportation to the group. In 2018, Oom Plaeng's activities had shared in Happy Workplace Network's session and pursue over 10 additional members to join activity in Ratchaburi and Nan provinces.



**Delta Credit Union Limited:** To boost up Happy money, part of Happy workplace initiative, Delta supports credit union offices and related facilities since Delta Credit Union Limited's registration in [2011](#). The organization complies with The Coperative Act of Thailand B.E 2542. Since 2015, Delta Credit Union has recognized by the Cooperative Audit Department as TOP 10 co-op in central Thailand highest number of regular member records of 3,101 members and reach approximately 3,200 members in 2018.



**Hindi group in Delta India:** India is a land where people of different religions and cultures live in harmony and so as our plant in Rudrapur (Uttarakhand). Holi Festival takes place across India each year to celebrate the arrival of

spring and to signify the victory of good over evil. Though it is a Hindu festival, Delta employees who respect Hinduism, Islam, Sikhism, Christianity, Buddhism, and so on celebrate Holi such a vibrant and festive occasion together.

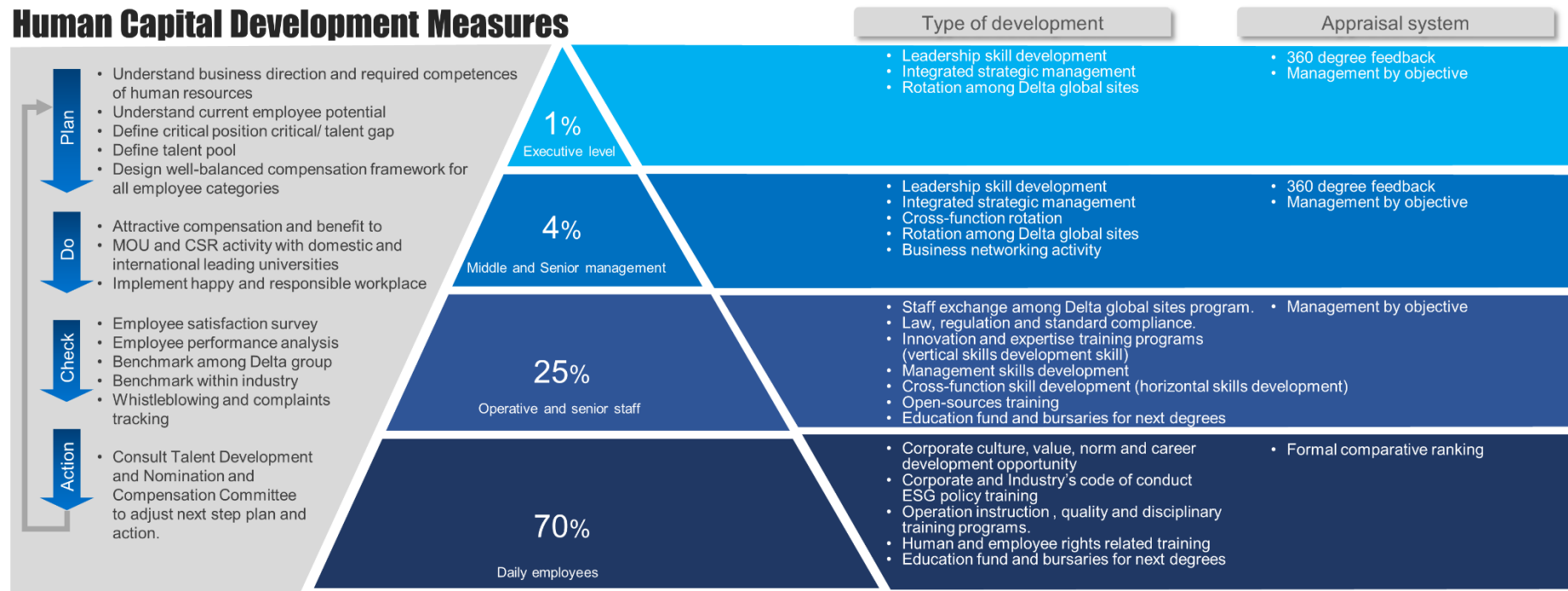


**Athletic groups:** Delta supports various athletic groups founded by its employee according to happy workplace and White factory guideline. Delta football, Volleyball, sepak takraw and running club has continuously supported by the company. The accomplishment of such support is only employees' health, but also the healthy relationship across the organization and industry. In 2018, Delta's male and female volleyball team won first prizes from Bangpoo Industry Society Leagues.

Affiliation or association with a political group by the Company's employee is regarded as a personal decision which is a personal right. The Company has no policy to support or associate itself with any political groups or parties at any level. Since the company start its operation in Thailand, none of political parties are allowed to run their political or election campaign at any Delta operation site or on-line platform.

## 8. Training opportunity

To ensure equal opportunity for employee development and provide job-related training to enhance employee capabilities and skills. The company aligns its employees capabilities with the company's innovation and eco-efficient operation, Delta keeps developing our employees' both hard skills and soft skill. The company doesn't not only keep focusing on deepening employees' capability, but also inspiring employees' motivation and potential to fulfill continuous growth.



To realize organization's long-term development and conquer future challenges, we provide a comprehensive and solid training platform to our employees. These training resources are distinguished into several different approaches according to different strategies and goals. On one hand is to diminish the gap between individual contribution and organization's need, on the other hand is to incubate core advantages for business's future transformation and environment challenges. According to level-based human development scheme 100% of our employee receiving regular performance and career development reviews annually.

2018 Training performance	Unit	Male	Female	Total/ AVG
In-house training hours <sup>3</sup>	hours	38,114	80,263	118,377
• Salary-based workers	hours	31,233	17,907	49,140
• Daily wage workers	hours	6,880	62,357	69,237
Off-site learning hours <sup>4</sup>	hours	6,447	3,608	10,056
<b>Total Training hours</b>	<b>hours</b>	<b>44,560</b>	<b>83,871</b>	<b>128,431</b>
• In-house training hours <sup>3</sup>	hours	38,113	80,263	143,694
- Salary-based workers	hours	31,233	20,914	52,147
- Daily wage workers	hours	29,190	62,357	91,547
• Off-site learning hours <sup>4</sup>	hours	6,447	3,608	10,056
<b>Average training hours per total employee</b>	<b>hours</b>	<b>46.0</b>	<b>21.5</b>	<b>13.6</b>
• Average training hours for salary-based worker	hours	17.39	2.34	19.7
• Average training hours for daily-wage worker	hours	-		0
• In-house training hours <sup>3</sup>	hours	38,114	80,263	118,377
- Salary-based workers	hours	31,233	17,907	49,140
- Daily wage workers	hours	6,880	62,357	69,237
• Off-site learning hours <sup>4</sup>	hours	6,447	3,608	10,056

## Orientation:

Delta provide new employee a general understanding of code of conduct, company regulation and policy aiming that employee in all level will produce better work performance, provide better products to customers, and observe laws and code of ethics to help uphold the company assets, interests and image and contribute to the sustainable operation and development of the company.

In addition to ethic-related subjects, organization value and sustainable development direction, environment and safety regulations, employees' rights, human rights, welfare and benefits, Information security measures, had included into the orientation program for 100% of new-hired employees. In 2018, 2,441 training hours of orientation had provided to Delta new employees.

## Fundamental training:

This type of training regards to computer skills, language skills and other interpersonal skills training to help employees perform in a decent manner.

## Statutory training:

Provide a series of timely training according to statutory requirement and RBA regulation. Every employee shall attend at least 1 hour annual training regarding to RBA regulation (including to uphold Human Right).

In 2018, 17,396 statutory training hours had recorded. Key courses related to this category of training included training of Labor Relation Act, Workmen's Compensation Act, Labor protection Act, Social Insurance Act and Responsible Business alliance Code of Conduct.

## Professional competency-based training

Delta prepare employees for equipping qualified capability by different segment, including Manufacturing related, Sales and Marketing related, supporting related and managerial related training programs. A training roadmap and a clear career roadmap are also delivered to employee during performance management cycle.

In 2018, advance skill and training course such as statistical process control, why-why analysis and OHSAS18000 internal auditor courses had arranged to strengthen our expert in various functions.

## Leadership competency-based training

Design for front-end Research and Development leaders, entry-level supervisor, middle and high level manager. Focus on corporate's strategic goals, core value and competency delivery aligned with Corporate Multi-language training programs is also delivered.

## Self-learning and experience-based learning



To boost up expert and professional pools in various functions, Delta encourage our employees to attend advanced or continuing studies, provide a sponsorship and flexible working hour program for employees. Delta leverage Corporate and outside learning platform to provide employees an open learning resources so that employees can learn along with individual needs without time or location limitation. Travel fare, accommodation expenses and meal allowance for supporting employee's domestic and oversea learning for each level of employees had clearly announced and [available on Delta's intranet](#). With IT security practice, internet access authority had granted to Delta's talent and specialists when specific on-line learning channels required.

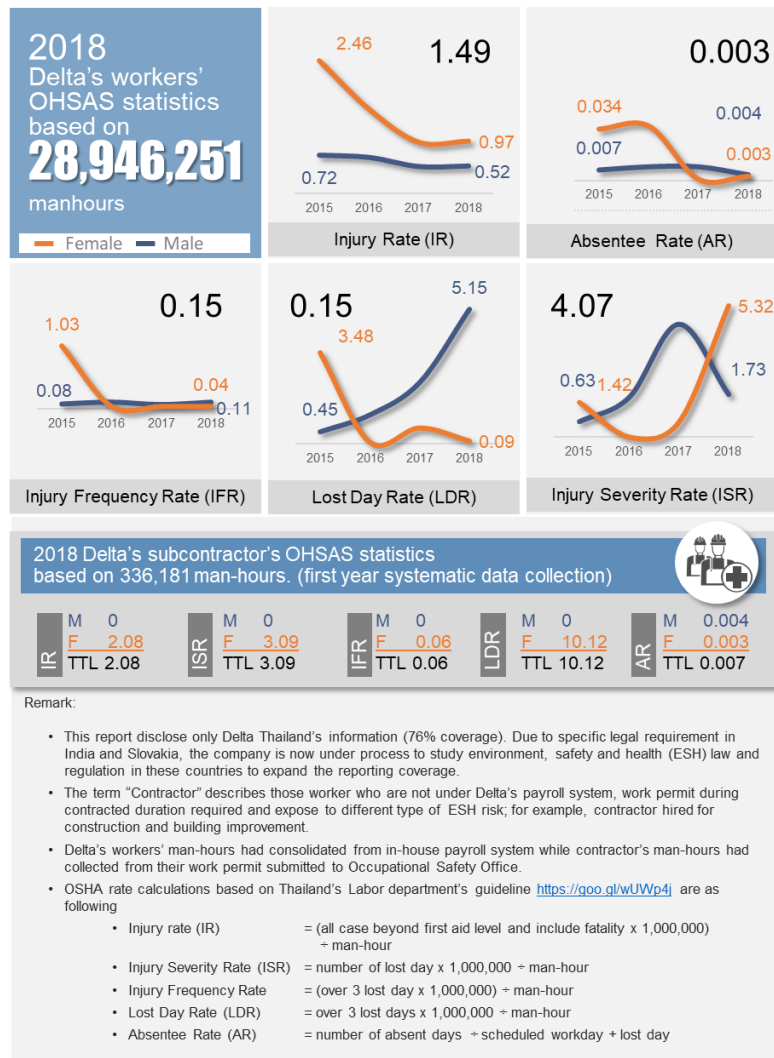
To ensure employee's career development, Delta assess the various tools to 100% of our employees that companies use to measure individuals' performance and to what extent these tools are applied throughout the organization.

## 9. Health and Safety

To provide a safe and healthy working environment that is in accordance to the required safety and health regulations. Furthermore, we strive to establish and maintain an occupational health and safety management system that defines operational procedures and monitors the implementation of continuous improvements in the safety and health performance. The company organizes internal occupational safety health and environment inspections carried out at each plant in accordance with the [Ministerial Regulation on the Prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment B.E. 2549 \(A.D.2006\)](#) which in-line with [ILO's Code of Practice on Recording and Notification of Occupational Accidents and Diseases \(Code of Practice\)](#). Delta also organize cross-site audits conducted jointly by the OSH committee members and audit personnel accordingly to formal agreement. Complete audit plans, the task force audits Environment, Safety and Health (ESH) documents, the results of risk assessments, Safety Health and Environment control and operations, monitoring and measurements, as well as the work environment, wasted water quality, air quality, noise level, lighting sufficiency, the equipment and onsite operations, has implemented as due diligence to ensure OHSAS 18001 management system fulfilled.

	Daily	Weekly	Monthly	Yearly	Irregularly
Safety	<ul style="list-style-type: none"> <li>Morning talk (in production line)</li> <li>Stationary 6S audit</li> <li>ESD discharge before operation process</li> <li>Machine and working area safety inspection</li> <li>Forklift and its route inspection</li> <li>Personal protection equipment inspection</li> <li>Sub-contractor's work permit review</li> <li>Security personnel meeting</li> </ul>	<ul style="list-style-type: none"> <li>Facility team (+6S team) meeting</li> <li>Operation weekly meeting</li> </ul>	<ul style="list-style-type: none"> <li>New staff orientation</li> <li>First aid kits, medicine and stretcher inspection</li> <li>Eye-wash basin at chemical storage inspection</li> <li>Risky workstation and injury rate review</li> <li>ESHMR Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder engagement (labor union meeting, safety week, safety home trip activity, community interview, regulator activity participation, occupational and executive safety personnels training, supplier safety audit, sub-contractor training)</li> <li>OHSAS18001 standard compliance review</li> <li>Building and alarm system inspection</li> <li>Fire drill and evacuation rehearsal</li> <li>Emerging risk, risky workstation and injury rate review</li> <li>Radiation inspection</li> <li>Work environment inspection</li> <li>Transportation condition inspection</li> </ul>	<ul style="list-style-type: none"> <li>New employee health check</li> <li>Civil construction approval process</li> <li>Sub-contract work permit sampling check</li> <li>Emergency case meeting</li> </ul>
Health	<ul style="list-style-type: none"> <li>Drinking water quality inspection</li> <li>Canteen, food and cooking areas hygiene inspection</li> <li>Clinic and ambulance readiness inspection</li> <li>Breastfeeding corner inspection</li> </ul>	<ul style="list-style-type: none"> <li>OHSAS team meeting</li> <li>Operation weekly meeting</li> </ul>	<ul style="list-style-type: none"> <li>New staff orientation</li> <li>Emergency route and related facilities inspection</li> <li>Quality pregnancy knowledge training</li> <li>Pest control inspection</li> <li>Injury and disease rate review</li> <li>ESHMR Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder engagement (safety week, injury case interview, regulator activity participation, supplier health and welfare audit)</li> <li>OHSAS18001 standard compliance review</li> <li>Influenza and cervical cancer voluntary checkup</li> <li>Injury and disease rate review</li> <li>General, emerging risk and risky group health checkup</li> <li>Social security rights training</li> </ul>	<ul style="list-style-type: none"> <li>Non communicating and emerging diseases training</li> </ul>
Environment	<ul style="list-style-type: none"> <li>Incoming hazardous substance inspection</li> <li>Chemical storage inspection</li> <li>AHU system inspection</li> <li>Air pollution and related factor inspection*</li> <li>Scrap room inspection</li> <li>Waste and effluence record</li> </ul>	<ul style="list-style-type: none"> <li>Environment team meeting</li> <li>Operation weekly meeting</li> </ul>	<ul style="list-style-type: none"> <li>New staff orientation</li> <li>Stationary 6S audit</li> <li>Chemical spill inspection</li> <li>Energy, water and waste management performance review</li> <li>ESHMR Meeting</li> </ul>	<ul style="list-style-type: none"> <li>Transportation condition inspection</li> <li>Energy, water, waste, effluence and GHG management performance review</li> <li>Supplier natural resource and environment management audit</li> <li>Chemical spill case summary</li> <li>ISO14064 and 14001 compliance review</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder engagement (education week, community interview, regulator activity participation)</li> </ul>
Reporting line / communication channels	<ul style="list-style-type: none"> <li>Supervisor</li> <li>Related -department manager</li> </ul>	<ul style="list-style-type: none"> <li>Department managers</li> </ul>	<ul style="list-style-type: none"> <li>Plant manager</li> <li>EHSMR committee</li> <li>Operation vice president</li> </ul>	<ul style="list-style-type: none"> <li>Labor union</li> <li>Related department managers</li> <li>EHSMR committee</li> <li>Sustainable development committee</li> <li>Regulator and public</li> </ul>	<ul style="list-style-type: none"> <li>Sustainable development committee</li> <li>Regulator and public</li> </ul>

Delta established various periodic activities and audits to ensure inclusive safety and well-being through our operation



## SHE Compliance

The Company complies with [Ministerial Regulation on the Prescribing of Standard for Administration and Management of Occupational Safety, Health and Environment B.E. 2549 \(A.D.2006\)](#), Environment Management standard ([ISO14001](#)), occupational health and safety standards ([OHSAS18001](#)), standards of the industrial sector ([Responsible Business Alliance-RBA](#)) by ensuring the safety and health standards of food, water and overall employee well-being at the workplace. To ensure safety, health and environment related negative impacts either for Delta employees or our surrounded community has systematically mitigated, and reporting directly to the highest management in charge. 9,438 employees in plants of Delta Thailand (85% of Delta global workforce) is controlled by the organization that are represented by formal joint management worker and Environment Health and Safety Management Representatives (EHSMR) Committee. This exclusive committee consisting of 61 employer, employee and labor union representatives shall be established and measures implemented for the prevention, investigation, audit and management of emergencies, work-related accidents, illnesses or injuries. The committee will also implement safety procedures for risk-exposure processes, machinery and labor-intensive tasks.

The Company has safety officer in professional level who had trained in human rights policy and procedure to tracked injury frequency rate (IFR.) and Injury Severity Rate (ISR.) the main safety and health management indicators. Annual plan and targets for each plant have been set along with safety & health audits, safety and health education, regular work environment inspections and improved information exchange to effectively reduce the frequency of safety and health incidents.

Although no work-related disability and work-related fatality had report in 2015-2018, Delta strives to reduce accidents to zero to meet our "Zero Accident" target in 2023. The annual industrial safety management goal of 2018 in Thailand, was Injury Frequency Rate < 0.5 and Injury Severity Rate (I.S.R)) < 6. The results for 2018 were I.F.R = 0.15 and I.S.R = 4.07 where standard target had met.g

In 2018, the total injury rate (including minor injury and fatality) was **0.51** cases per 1 million working hours. There were 55 injury cases in 2018, increase from 46 cases in 2017. Of these beyond-first-aid 55 cases, 40 cases caused less than 3 days of work loss, 2 cases led to work loss of over 3 days and another 2 case of Delta female operators and 1 sub-contractors faced machine clamping and knife injury respectively but not lost any body part. For the mentioned cases, Delta fully take responsibility in this

operator's medical expense and his legal process as remedy action. Finally, the operator had received lost working day compensation from the Social Security Office accordingly.

The number of severe injuries cases (with work absence of 3 scheduled work days or more) declined by 25% or represented only 0.03% of total employees. No occupational disease and fatality cases at work were recorded for Delta employees, subcontractors and other related workers.

Analysis of the major reasons for failing to fulfill preset goals as well as avoid repeat occurrence revealed that the number of days for employees on industrial injury leave was longer than expected. To help employees recover quickly from injuries with a reasonable number of days for industrial injury leave, the company will reinforce its re-examination mechanism while employees are on industrial injury leave and will include the number of leave days as part of periodic follow-ups.

Targeted accident prevention audits are also implemented at the plants for special or critical equipment. Examples include electrical safety audits using thermal imaging to check for the potential electrical hazards, soldering pots, chemical use, surface mount technology (SMT) equipment, specialist equipment, ventilation equipment, contractors' specialist operations such as cranes and fire, RBA- OSH execution, and other specialist checks. The Executive Directors on each site also convene monthly OSH meetings to review OSH performances. On top of daily 6Ss Safety audits are performed on a yearly basis. Departments found with deficiencies are asked to analyze the causes and improve. Auditors confirm improvement results in subsequent follow-up audits.



At the monthly interplant safety and health meetings, representatives from each plant discuss incidents related to employees, analyze the reasons and propose improvements or engineering changes to prevent incidents in the future. In addition, Based on [Thailand's Social Security Office's](#) guideline of injury data collection, 8 major types of injury had recorded by Delta in 2018.

	2016			2017			2018		
	Male	Female	TTL	Male	Female	TTL	Male	Female	TTL
Electrocuted	2%	2%	3%	2%	2%	5%	0%	0%	0%
Knife	8%	14%	22%	9%	7%	16%	10%	6%	15%
Machinery	2%	10%	12%	7%	23%	30%	8%	37%	44%
Slip, trip, fall	3%	8%	12%	7%	9%	16%	4%	8%	12%
Chemical	10%	15%	25%	0%	11%	11%	2%	6%	8%
Transportation	3%	8%	12%	0%	5%	5%	0%	8%	8%
Fire and heat	0%	3%	3%	0%	0%	0%	0%	0%	0%
Others	2%	8%	10%	7%	11%	18%	8%	6%	13%

Due to Zero accident target and 2015-2018 collective statistics, electrocuted and fire and heat injury had successfully eliminated in 2018. Most significant risks for Delta employees, subcontractors and workers were 2 major causes; working with machine and knife

instruments. To relief these man-made failures, Delta embed following measures into its routine operation.

1. Training: In 2018, Occupational safety and health and work instruction trainings was 46% of our total training hours. 65,177 OSH-related training hours had provided to our employees which 4,399 hours increased from 60,778 in 2017 and 11,584 hours in 2016. 20:80 is the ratio of work instruction and specific training hours recorded. The company realized that the higher injury severity rate caused by machinery-related activity. Hence, intensive courses of work instruction; for instance, 8,671 hours of training coursed of overhead crane operation, Print circuit board cutting machine operation, trimming and stamping machine operation had organized to ensure employees' sufficient knowledge and awareness of hazardous at their work. In addition to the company's new staff orientation and in-house training, 1,107 hours of public course of ergonomics in workplace, radiation management, advance occupational safety officer; for instance, had provided to enhance Delta's OHS standards.
2. Improper work place and process management : 6S audit, workstation safety, personal protection equipment and operator's readiness checkup has carried out daily in operation morning talk. In addition to regular OSH committee meetings, the OSH department uses the company intranet and suggestion boxes to convey OSH messages to the employees and boost the exchange of OSH information in a timely manner. Employee feedback on OSH issues is also collected and studied. We hope that the creation of a smooth, two-way communication channel will help increase employee safety awareness and involvement and in turn, help ensure the safety and health of all the employees.
3. Human failure resulting from insufficient knowledge and improper work condition. To ensure our employees are awareness of all initial policies and procedures and kept aware of any changes on a formal basis, create feedback loop and continual improvement and a safer workplace, Delta Environment and Occupational Health and Safety Management Representative Committees initiated various activities in 2018. In parallel, the company's Happy Workplace activities and other affinity groups activities help to release the operators' stress. The result of these activities reflect in better trend of reported case.

## Emergency and Recovery Plan

Due to the changing context of the world and business, precaution of all the possible emergency case is to ensure well-being of our employees and those who work at our site including business continuity. Delta is spotting, allocating resource and plan preventive action for hazards from potential emergencies which include fire, accident, chemical spill & chemical waste, explosion, flood, labor strike, earthquake, tsunami, sabotage and terrorism, hurricane, depression, thunderclap, radiation spill and plague. To evaluate, remove and control these risks before any possible harm, Preparedness Procedure has established as regulation and legislation for preventing To localize any emergencies that may arise and if possible eliminate them; (b) to minimize the harmful effects of an emergency on people, property and the environment. According to the company's public [Human Right policy](#), Delta factories in Thailand has fully incorporated human rights principles, namely RBA's Code of Ethics and ILO's labor standards, into the Company's operations and developed our human rights policy based on the UN's Guiding Principles on Business and Human Rights – UNGP.

## 2018 Emerging issue

According to Delta's [Environment, Safety and Health Policy](#), Delta commit to identifies and manages environmental, safety and health risks to create a work environment that promotes personnel health and prevents occupational injuries and disease. In spite of our serious action to control on its emission discharged to mitigate global warming and rapid urbanization, Delta experienced the rising PM2.5 pollution situation in Bangkok in 2018. The SMOG pollution possibly impact to our employees' health and safety which could be able to enlarge to our productivity, on-time delivery and even our recognition.

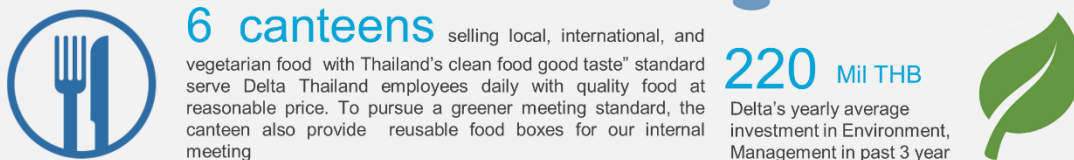
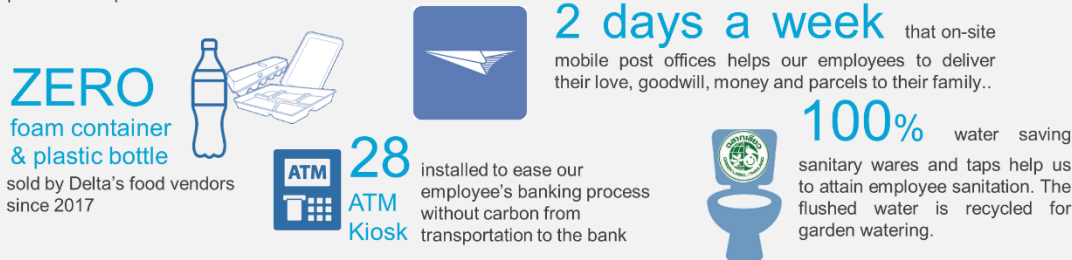
### Emergency Preparedness and Response: Particulate Matter 2.5

PM 2.5 Level	Impact	Measurement	Responsible
<b>Good</b> (00 – 50 µg : m <sup>3</sup> )	<ul style="list-style-type: none"> <li>Air quality is considered satisfactory, and air pollution poses little or no risk</li> </ul>	<ul style="list-style-type: none"> <li>Daily Investigation via government/ public organization's on-line platforms</li> <li>N95 Mask sourcing</li> <li>Air quality and related factor watching up and update to on-site stakeholders via digital signage board daily.</li> </ul>	Environment, OHSAS, Facility, Purchasing
<b>Moderate</b> (51 – 100 µg : m <sup>3</sup> )	<ul style="list-style-type: none"> <li>Air quality is acceptable, however, for some people there may be a moderate health concern.</li> </ul>	<ul style="list-style-type: none"> <li>Daily Investigation via government/ public organization's on-line platforms</li> <li>N95 Mask supply</li> <li>Air quality and related factor watching up</li> <li>Spare N95 mask @ Clinic and open-space eg. warehouse, guard houses, solar roof operation team.</li> </ul>	Environment, OHSAS, Purchasing, Operation
<b>Unhealthy for sensitivity group</b> (101 – 150 µg : m <sup>3</sup> )	<ul style="list-style-type: none"> <li>Members of sensitive groups may experience health effects. The general public is not likely to be effected.</li> </ul>	<ul style="list-style-type: none"> <li>Distribute N95 or higher series of pollution mask <u>when requested</u>.</li> <li>Training all employee of how to apply nearby stuff to make emergency mask</li> <li>Inform place for medical inspection and medical treatment.</li> <li>Announce employee's right of taking vacation leave.</li> <li>Factory clinic to prepare necessary facilities for first aid and medical treatment</li> </ul>	Environment, OHSAS, Facility, Corporate Communication, HRA, Operation
<b>Unhealthy</b> (151 – 200 µg : m <sup>3</sup> )	<ul style="list-style-type: none"> <li>Everyone may start experiencing health effects; member of sensitive group may experience more serious effects.</li> </ul>	<ul style="list-style-type: none"> <li>Same evacuation plan and route as fire drill rehearsal to be reminded to all employee.</li> <li>EHSMR meeting to get approval of reporting plan and announcement rehearsal</li> <li>All plant managers and support function managers to download application air4thai to closely monitor pollution situation hour by hour</li> </ul>	Environment, OHSAS, HRA, Operation
<b>Very unhealthy</b> (201 – 300 µg : m <sup>3</sup> )	<ul style="list-style-type: none"> <li>Health warning of emergency conditions. The entire population is more likely to be affected.</li> </ul>	<ul style="list-style-type: none"> <li>Standby personnels, facilities and transportation for evacuation plan.</li> <li>Announce employee's right of taking vacation leave.</li> <li>Announce whistleblow policy and communication channel in let employee complain if their supervisor doesn't approve their leave according to pollution concern.</li> </ul>	Environment, OHSAS, HRA, All function
<b>Hazardous</b> (301 – 500 µg : m <sup>3</sup> )	<ul style="list-style-type: none"> <li>Health alert: everyone experience more serious health effects</li> </ul>	<ul style="list-style-type: none"> <li>Announce <u>offday</u> to related stakeholder and inform communication channels.</li> <li>Immigrate employees, workers on site stakeholders through the same route and assemble points as fire drill evacuation plan.</li> <li>Communicate DET <u>offday</u> with suppliers and customers.</li> <li>Announce recovery plan</li> </ul>	Environment, OHSAS, All function

Sustainable Development Committee. From the SMOG pollution issue, Delta found new business opportunity "[Uno](#)", air quality sensor, which response to social emergency needs. The emerged climate change impact leads to change in demographic behavior and new business segment for Delta. Instead of wearing protecting mask when the pollution matter, citizen in metropolitan and manufacturing intensity area require their health security. By close monitoring to pollution-related factors such as humidity, temperature, total volatile organic compounds and quantity of PM 2.5; user will be able to forecast pollution situation in their area leading to proper preparation to save themselves.

For additional information, suggestion and complaints on environment, health and safety issue; our Environment, health and safety team is ready to help at [OHSC@deltaww.com](mailto:OHSC@deltaww.com)

In parallel with emergency preparedness and response plan, Delta implements business recovery plan for business continuity. Though the pollution issue in 2018 pass without any impact to our employee's health nor Delta's operation, the company prepares 5-year roadmap to prepare the organization to be ready for such issue. This roadmap includes focusing on science-based study, disseminating eco-efficient practice to the company's stakeholders, setting routine environment-related inspection and additional performance indication to be report in



From eco-efficient operation to eco-friendly lifestyle

## Eco-friendly habit cultivation

Delta [corporate social responsibility commitment](#) does not mean only natural resources saving in our operation process, but also our the devotion to the progress of human culture and technology, the development of society and the economy, as well as the sustainable development of the Earth and its environment.

From manufacturing-based practices, the result of our sustainable practice had embedded into every single actions at Delta in both organization and individual level.

### 1. Eco-friendly work environment

Delta's work environment and facilities are not only managed for employee's safety, health and well-being, we also manage our work environment to minimize waste and pollution which may occur from our daily personal life too.

Green purchasing products and services that cause minimal adverse environmental impacts. It incorporates human health and environmental concerns into the search for high quality products and services at competitive prices. In 2018, 59% of 194 million baht of our spending solar power and burn in recycling system, 20% was spent for energy star computing devices and testing equipment, 11% spent for high efficiency chiller while another 9% had spent for paper from responsible sources and process, green printing ink, eco-friendly cleaning agent and LED lighting.



On June 5, 2018, Delta Electronics (Thailand) PCL. announced its Green Meeting Initiative to employees on the United Nations (UN) June 5 World Environment Day. This year people around the world strive to change their everyday lives to reduce plastic pollution for the 2018 theme- “Beat Plastic Pollution”. Delta’s Sustainable Development (SD) Team announced the non-compulsory [Delta Eco-Friendly Meeting Guideline](#) to minimize the environmental impact of company meetings.

The guideline gives recommendations for event hosts and participants in the areas of accommodation and transportation; food and drinks; conference venues and facilities; and support for local communities. Delta also gives actionable recommendations to support the UN’s goal to free communities from over-reliance on plastic disposables.

## 2. Extension of stuff useful life

Next to transparency, eco-efficient lifestyle turns to be everyone’s norm at Delta. We realized decline trend of cash donation request to SD Committee while the trend of circular economy initiative to optimize stuff usage was higher. Various activities had initiated and run by our

employees while SD committee and the company played supporting role for sundry facilitations backup. Following are sample of key activities to extend usage of stuff in collaborative manner.



January 16, 2018 Mr. Thanayot Samanvorakij, Delta Component Senior Engineer, leads Delta employee representatives to distribute approximately 700 donated calendars to over 60 students at SDCB. Inspired by Delta’s passion in a green future for all, Delta employees have organized annual volunteer activities on their own initiative that extend eco-efficient consciousness beyond their work and to the community. This activity was a visible way for Delta to demonstrate its employees’ eco-friendly and social care mindset. Delta supported its volunteers with resources and transportation.



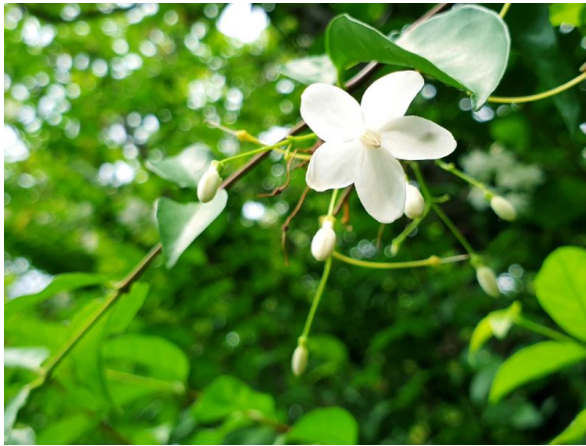
April 21, 2018 - Delta Electronics (Thailand) PCL. provided volunteer labor and materials to paint a covered multipurpose sports stadium at the Samut Prakarn School. Founded in 1883, the public school is a key educational institution in Samutprakarn province that offers junior high school and high school education to 3,250 students.

The renovation project gives students a new place to enhance learning experiences, improve health and boost well-being through sports and physical education. In addition, the stadium will serve as a venue for community activities during school holidays



November 2018 Initiated by Sustainable Development (SD) Week organize on annual basis, over 2 tons of Delta employees’ used personal stuffs in good condition had passed over to Yuvabaddhana Foundation. The donated stuff will be categorized and sold at Pun-Gun shops. The gained money will handed over to poor students to support their education fund. From simple initiative to our culture, SD Week and New Year Festival has emphasized the genuine meaning of “Season of Giving” at Delta since 2017.

### 3. Regeneration of natural systems



In addition to well-managed integrative process, location and transporation, water efficiency, energy and atmosphere, material and resources, indoor environment quality, innovation and regional priority, Sustainable site is another significant factor that drive Delta to the first manufacturing factory with LEED EBOM certified From LEED standard, Delta had learned importance of native plants that provide shelter and food. On the other hand, native plants are the determining factor for what local birds, insects, and animals can live within the community. During 2017-2018, Delta replaced its ornament plants by local plants. Turf area had limited to 25% of the total vegetated onsite area.

Though the company does not use water as its manufacturing factor, our awareness of water conservation had raised frequently by our investors. In 2018, the company had consolidates information about the [rivers](#)

[near Delta's major operation sites](#). This information is presented without any right of ownership. All the information in this booklet is from Wikipedia, the world's largest free online encyclopedia, to be used as reference for the Delta Group's sustainable development study and performance improvement on natural resource management tracking.



Since Delta's headquarter is based in Samutprakarn, one of the coastal provinces located along the Gulf of Thailand. We are well aware that mangrove forests are highly diverse coastal ecosystems that play a crucial role as a nursery for marine life, thus ensuring bountiful fishing in the future. Without waste water from our production process discharged to public water basin and well-control of emission, the company collaborate with Bangpoo Industrial Estate to reforest Bangpoo coastal mangrove forest yearly.

In 2018, 18 Delta employees joined 1,300 participants to reforest *Avicennia alba* at Bangpoo Recreation Center. Bangpoo Industrial Estate organize this activity annually to

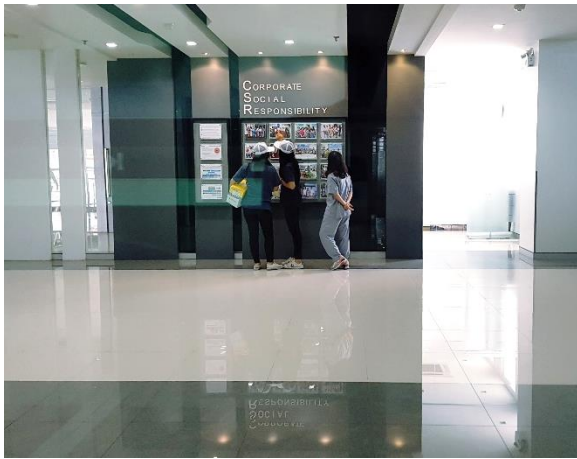
sustain coastal ecosystem and biodiversity with collaboration from business and local communities.

### 4. Sharing best practices

Employee Relation Internal communication is vital for Delta as it enables exchange of information within our organization. Information sharing can also foster a healthy relationship between two or various parties and improve our business performance across the board. Delta Thailand's labor union was established in 1998 to represent its employees and to encourage effective information exchange between Delta's Employees and Management through various communication channels. This approach does not only promote the participation of multiple parties in collaboratively solving issues, but it also strengthens our unity and contributes to our growth.

Delta uses Intranet to communicate with the Employees via our internal portal where information about Delta including its subsidiaries and Delta Group in both local language and English can be accessed and speedy top-down information transfer is possible. In addition to the Company's information, Employees can find out about latest announcements, policies, updates, good practices, code of ethics, guidelines and specific technical information for self-learning on the Intranet. For the convenience of our Employees, Delta's Office Automation (OA system) is accessible through our Intranet to provide an easy-to-access platform for various types of employee benefits offered, such as leave requisition, medical expense reimbursement and travel claim.

In addition, since 2016 the company has established its official Facebook page and official Youtube channel to be alternative communication channels for the company's personnel and our business related parties which can be easily accessed. ESG stories, business move, events and CSR activities can be access easily by our internal and external stakeholders. From 1 January to 31 December 2018), our [facebook](#) posts reached 15,055 organic reaches by our employee and stakeholders.



To boost up non-office employee's participation, Delta separate CSR board from general announcement boards in 2018. With classy design, proper locations including photos with simple captions; latest activity, statistics, awards, projects, global CSR trend and simple but effective practices had communicate to all level of passerby. Our employees are encouraged to suggest and report their activities by using this channel.



The same communication theme had applied to digital sustainable development (SD) panels located at various path to work stations. In addition to Delta friends' SD-related practices and performances, digital SD panel had utilized for sharing the others' responsible practices both in domestic and international level. Videos of global eco-friendly movements, social actions and simple method to reduce environmental footprints had inspired non-computer-user employees.

With [NovoDS Studio](#), Delta's own cloud-based digital signage solutions, non-computer-user employees can learn of global eco-friendly milestones, best practices and tons of how-to available on open sources. Stories of electronic waste recycling, PM 2.5 cause and effects, design for the dump, importance of renewable energy and waste categorization; for instance, had shared through the platform to raise operators' awareness without any violation to any intellectual properties.



In addition to one-way communication, periodical face-to-face activities like Safety Week and SD week had organized more frequent. In 2018, SD team initiate [DETTalk](#) activity to encourage our employee to share their simple ideas for a better tomorrow to their friends. The 5 finalists did their speech in person for the judge panels ad 80 audiences on 9 November 2018 at DET5 conference hall. The speech time limit was 10-15 minutes. There are no restrictions for media or presentation methods during the speech.

To amplify the impact of the speaker's first-hand experiences, videos of the finalists had posted on the Delta Thailand Facebook account. The clip's number of Likes (1 point) and Shares (5 points) will be included with the judges' final score. The 5 videos had published on Delta Thailand's Facebook had reached 11,992 times, 3,057 engagement, 1,009 shares and 1,900 likes in 3 days. Meanwhile, the same clips broadcasted on Delta Thailand's Youtube channel had view 731 times in 3 days.

## Employee Retention



While Delta works over its fair employment policy and various program to ensure our skilled personnel with eco-efficient awareness will be with us in long term, Delta organize the first Global Employee Engagement Survey in 2018. With 100% coverage, the standard method survey had conducted by renowned external consultancy to provide independent and fair analysis.

From basic survey regarding Delta Thailand's employees' satisfaction on their work environment infrastructure which cover 28% of global employee in 2014 and 70 since 2016, Delta expand the survey coverage to its subsidiary in Slovakia, India and South East Asia business units to meet 100% coverage in 2018.

The objective of the survey had adjusted to realize its employees' understanding in the company and employee's value, ideals and team-work which reflect their willingness to stay with us in long-term. For timely response to employee's expectation, Delta plan to conduct this survey every 2 year to retain our healthy retention rate. From our

latest study employee retention rate is significantly relative to the company's strong return of human capital rate at 6.5 in average in past 3 years.



In 2018, 1,935 employees or 50% of Delta Thailand's global staff had actively engaged. Ratio of male to female of participant were 70:30 accordingly to staff's gender diversity proportion. These staffs' year of service had considered as selection criterion as well. 1,238 employee's feedbacks corresponded to 64% response rate which was in line with participation rate of large enterprises based on the standards of the consultancy company's advice to the analysis.

From 4 point scale plus 1 NA scoring system, Top 3 most favorable and least favorable areas including in-depth analysis had reported to the CEO, Sustainable Development Committee. Thereafter, the result had discussed and followed up closely by Delta's executives.

In spite of competitive turnover rate compared to industry peers at 5.3 in 2018, Delta keeps monitoring the reason why our employees made their decision to go.



In 2018, 95.3% of leavers are voluntary turnover. As every single reason of leaving does matter for effective management of human resources, 2018 exit interview information had collected accordingly. When over 50 years-old retired leavers and headcount of dismissal for disciplinary reasons is not considered, 95.3% of our leavers are voluntary. From exit interview in 2018, It is found that 23% of our employees enjoy the company's fair early retirement program. Another 18% found their potential from gained knowledge and experiences, they challenges themselves with new career and their own business. 30% of leavers made decision to back to hometown and take care of their family, 25% continue their study for higher degree while 4% of this group of leavers need time for taking care of their health issues.

## Inclusive well-being

Delta Thailand, as an active corporate citizen, carries specialism of making smarter and greener life on its social responsibilities through various CSR activities, projects, and programs which our catering to the needs of its stakeholders. In addition to continuous effort to take care of its customers, employees, suppliers, creditors, societies and environment simultaneously with fair competition to our competitors accordingly to the Company's Fair Treatment Policy; Delta Thailand broaden our effort to enrich its corporate citizenship in equivalent view and extended view accordingly to the UN Sustainable Development Goals guidance. Hence, the Company's CSR activities has developed, more impact to larger group of stakeholder and more in-line with external society's directions.

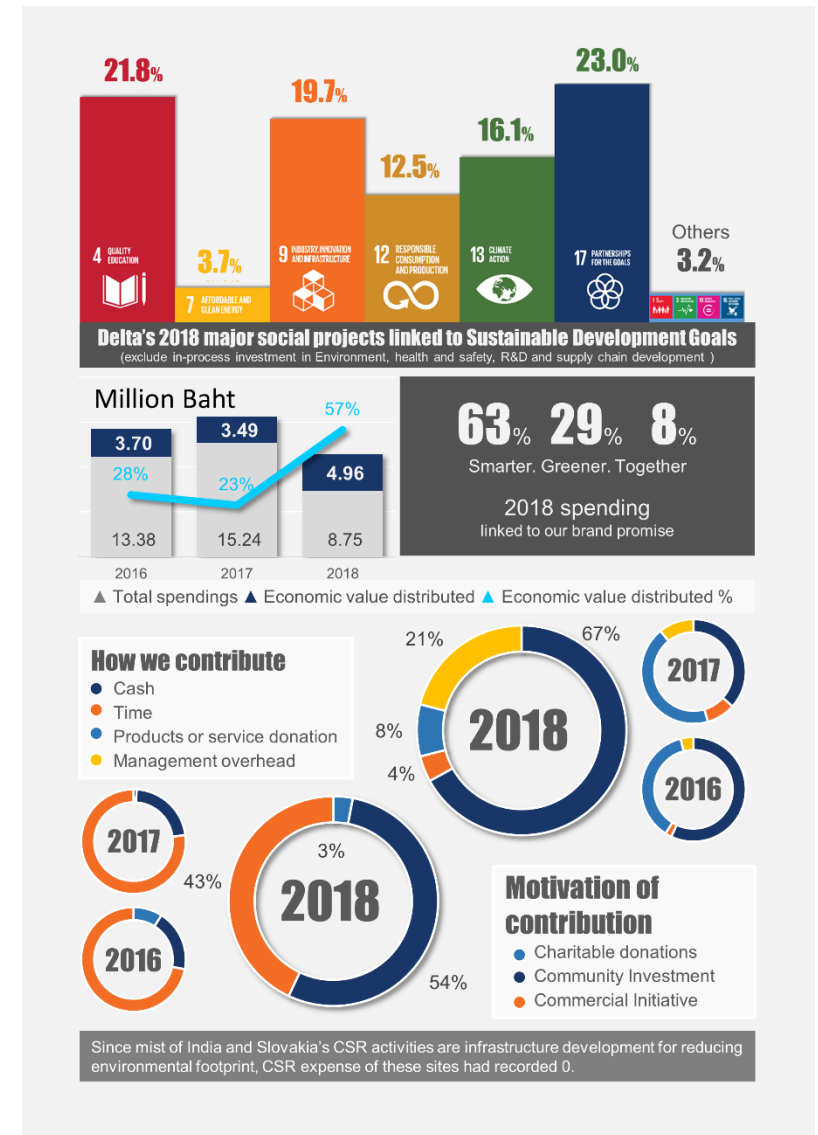
In 2018, Delta management and SD team have realized that the years of efforts invested in SD have reached a milestone especially with the recognition by Dowjone Sustainability Indices' outstanding assessment results. Therefore, Delta has derived a more focused strategy that will align our corporate mission and brand promise (Smarter. Greener. Together. with all of the company's SD endeavors. This will ensure a clear and consistent message and action reaching and influencing every level of employees in the company.

To amplify our effort to **mitigate** global agenda of **climate change**, Delta disseminate its innovation to and eco-efficient operation expertise to navigate greener communities by make it ; Smarter- Creating innovations that will benefit the society and environment; Greener- energy and environmental conservation and; Together- actively work with our stakeholders for a better tomorrow.

Quality education, affordable and clean energy, industry innovation and infrastructure, responsible consumption and production and partnership to sustainability had taken as our prioritized goals based on our core competence. In 2018 Delta Thailand contributed approximately 8.75 million Baht which decreased from 15.4 million Baht in 2017 as measured by the London Benchmarking Group (LBG) guidelines.

57% of the reported amount had contributed to the local and national communities to enhance industry innovation, eco-efficient living and climate action initiatives. This is made up of 3% cash donations, (charitable and other donations), and 54% non-cash donations, (which include employee time, in kind donations, and certain management costs). Full list of our 2018 philanthropic programs is available at

<https://bit.ly/2lmbW44>



## Participation and Membership

Delta Thailand's total contributions and spending for association memberships in 2018 was 159,000 THB 85% of the spending goes to business related associations while 15% goes to governance, leadership enhancement and sustainable development related associations. Major purpose of these spending is to exchange and advocate emerging trend, climate change and innovation issues and sustainable development matter.

Item	Name	Membership purpose				Organizational level role			Type of spending		Contribution and other Spending (Thai Baht)				
		Business	Politic	Tax exemption	Trade association	Management Role	participate in projects or	Member	Routine membership due	Others	2018	2017	2016	2015	2014
1	Thai Chamber of Commerce	-	-	-	▲	-	-	▲	▲	-	24,610	24,610	24,610	24,610	24,610
2	Thai Photovoltaic Association)	▲	-	-	-	-	▲	▲	▲	-	5,000	5,000	-	-	-
3	Electricity Vehicle Association of Thailand	▲	-	-	-	-	▲	▲	▲	-	10,000	10,000	-	-	-
4	Thai Automotive Institute	▲	-	-	-	▲	▲	▲	▲	-	100,000	-	-	-	-
5	Thai Listed Company Association	▲	-	-	-	▲	▲	▲	▲	-	7,000	7,000	7,000	7,000	7,000
6	Thai Institute of Directors	▲	-	-	-	▲	▲	▲	▲	-	12,000	12,000	12,000	12,000	12,000
7	Thai IoT Association	▲	-	-	-	▲	▲	▲	-	-	-	-	-	-	-
8	SDG-Friendly Business (with Thaipat Institution)	▲	-	-	-	▲	▲	▲	-	-	-	-	-	-	-
9	Happy workplace Network	▲	-	-	-	-	▲	▲	-	-	-	-	-	-	-
10	Thai Breastfeeding Center Foundation	▲	-	-	-	-	▲	▲	-	-	-	-	-	-	-
Total contributions and other spending											158,610	58,610	43,610	43,610	43,610

Remark:

1. Delta member fee expenses systematically recorded in SAP system.
2. Delta's payment and reimbursement system modules had design in accordance with Thai Financial Reporting Standard (revised 2017) aligning with the corresponding International Financial Reporting Standard (IFRS).
3. None of these amounts had paid for lobbying, interest representation or similar purposes.
4. Delta does not have any payment to local, regional or national political campaigns / organizations / candidates.
5. All the stated organization locates in Thailand where Delta generate 72% of Delta Thailand Group total revenue.

## We learn and Share

According to our commitment to invest innovation and research, develop intellectual property rights, and **devote ourselves to the progress of human culture and technology, the development of society and the economy, as well as the sustainable development of the Earth and its environment**, Delta has performed various activities to disseminate what we've learned from our long journey in ITC Industry. On the contrary, Delta realized that communities sustain innovation because as they share ideas they can mutate and grow, especially as they adapt to new conditions. From both business and non-business simple visits, projects and discussion, we have learned what we can do more to balance our passion for betterment with the communities' requirement.



Delta Electronics (Thailand) Public Company Limited, develop Delta Energy Education Program (DEEP) to build

awareness of energy and environment conservation. The program targets elementary students nearby Delta's Bang Poo factory, some of whom are Delta employees' children. In 2018, with strong support from 64 Delta (accumulated 116 ) volunteers, 5,516 students from 7 schools had educate; Wat Klong Kao School, Eamsuree School, Wat Tamru Mittaphap Thi 65 School, Piboonpachaban School, Wat Prackasa School, Praksawited School and Nakdee Anusorn School.

In 2018, the program created 11,032 training hours. In addition to quantitative measurement, simple questionnaire has designed to get qualitative achievement from participated student feedback. The impressive result from 359 students sampling size at confidence interval 5 expresses that 93 % of participated students will disseminate the gained knowledge to their family and friends, 91% will adopt the gained knowledge to their daily life and overall satisfaction is 96%.



March 8, 2018- Delta Electronics (Thailand) PCL. welcomed 40 delegates from the Metropolitan Electricity Authority (MEA) Bangkok head office to Delta headquarters, a LEED Gold certified Green Building, at Samutprakarn. The MEA is a state enterprise under Thailand's Ministry of Interior that supplies municipal electricity to the Bangkok Metropolitan Area.

The main aim for MEA's visit was to seek partnership with Delta to boost market demand for renewable and clean energy in Thailand, collaborate on an MEA smart-grid project and explore Delta clean energy products and solutions in-depth. Mr. Kittisak Ngoenngokngam, Delta SEA Business Director, led the delegation headed by Mr. Jumpote Himacharoen. MEA Director of Research and Development Division, on a company tour that showcased Delta green solutions including Delta solar inverters used in the plant's rooftop PV energy system and the EV charger in the company parking area.

Delta and MEA then discussed specific Delta solutions that curb pollution and reduce energy consumption including Delta Ultra Fast Charger 150kw, the company's flagship EV charging station model, and the Delta Energy Storage System (ESS) with Delta Power Conditioning System (PCS) solution that offers top power efficiency.



March 30, 2018- Delta Electronics (Thailand) PCL. welcomed a Thailand Automotive Institute (TAI) delegation, with 25 instructors from the campuses of Automotive Industry Technical College (AITC), to see Delta's latest EV technology at the company's Samutprakarn headquarters. The TAI is Thailand's leading organization for automotive and auto parts industry development with a focus on environment-friendly business, ecosystems and modernization.

The main aim of the TAI delegation's visit was to explore Delta's best-in-class EV products and technology and the company's advanced automotive production.. The visit to Delta's headquarters and automotive production inspired the TAI delegation to plan improvements to their education syllabus and student career development programs. Delta collaborates with the TAI to promote development Thailand's EV sector with industry seminars and donation its state-of-the-art DC and AC EV chargers to the TAI Technology and Innovation Learning Center for EVs.



March 17-18, 2018- Delta Electronics (Thailand) PCL. held the Delta Industrial Automation Camp 2018 for students from top Thai universities at the Delta Training Center, Chachoengsao. Delta hosted the training camp to bolster the Delta-sponsored Thai teams' performance at the Delta Cup 2018.

The Thai teams that are qualified by the Delta Cup Committee to compete will face fierce competition from elite engineering student teams from Taiwan, China, India and Vietnam in the contest's 5th Delta Advanced Automation Design Contest held during July 24-26 at Wujiang, China. Delta Thailand's business associate, Delta Electronics Inc. organizes the annual Delta Cup contest, in collaboration with China's Ministry of Education, to serve as an international platform for students to showcase their innovative automation inventions. The three categories for the Delta Cup 2018 are Smart Robots, Smart Machine and Smart Manufacturing for Industry 4.0.



May 4, 2018- Delta Electronics (Thailand) PCL. welcomed the Ministry of Digital Economy and Society (MDES) delegation to the Delta headquarters at Samutprakarn. The MDES's current vision is to encourage Thailand's industry sectors to use digital technology to drive the country's economy and society within the next five years. Dr. Pichet Durongkaveroj, Ministry of Digital Economy and Society Minister, and seven delegates to explore how Delta's smart green solutions can support the MDES's strategic goals of Smart Network, Smart Government, Smart Business and Smart People in Thailand.

After the tour, the visitors explored Delta's extensive product and solutions portfolio at the company showroom that can seamlessly integrate for Smart City applications. Delta and MDES then held an open discussion. Dr. Pichet said the Thai government's key focus is to boost innovation and training for skilled manpower needed to usher in the Thailand 4.0 era. He acknowledged that enacting government policies requires sustainable talent development and expressed his appreciation for the Delta Automation Academy and Delta Cup programs that focus on driving innovation and fostering talent at top Thai universities.



July 10, 2018-Delta Electronics (Thailand) PCL. welcomed over 100 suppliers and representatives of companies in the Bangpoo Industrial Estate to an open house and investment seminar at its Samutprakarn headquarters. The special event was an opportunity to showcase Delta's smart green operations to its business associates and offer global opportunities at the company's new manufacturing plant in Krishnagiri, Tamil Nadu.



August 9, 2018- Delta Electronics (Thailand) PCL. welcomed a group from Samitivej Hospitals to explore Delta's energy saving solutions and building automation

solutions. Mr. Johnny Tam, Delta's Senior Business Development Director, welcomed the delegation led by Dr. Chairat Panthuraamphorn, CEO of Samitivej and BNH Group to the company's Bangpoo headquarters.

Delta management took the delegation to see the company's highly automated production lines and the wide array of energy saving building solutions used around the LEED-certified green building. Delta managers highlighted how the company integrates energy-saving solutions for elevators and HVAC systems with building automation control software to make a more efficient and comfortable green building.

The visitors then explored Delta's extensive portfolio of products and solutions including ventilation and building automation products and solutions used by top Thai property developers.



September 13, 2018- Delta Electronics (Thailand) PCL. welcomed the Japan Embassy in Thailand to explore Delta's green energy and smart factory solutions. Mr.

Hsieh Shen-yen, Delta President, welcomed H.E. Mr. Shiro Sadoshima, Japanese Ambassador to Thailand, and the embassy delegation to the company headquarters in Samutprakarn.

The aim of the Japan Embassy visit was to establish cordial relations with Delta and explore opportunities for collaboration. Mr. Johnny Tam, Delta's Senior Business Development Director, introduced Delta and highlighted the company's energy-saving solutions for smart factories and green buildings. Next, Mr. Hsieh and Delta management led the ambassador and his delegation to tour the company's highly automated production lines, energy-efficient data center and innovative rooftop solar energy system.

Delta's industrial automation team explained to the delegation how the company integrates its automation controls and devices in its Delta Smart Production system. Finally, the delegation explored Delta's extensive portfolio of products and solutions used by leading global companies.



December 8, 2018- Delta Electronics (Thailand) PCL. held a ceremony to award scholarships and internships to outstanding Thai students at Delta's headquarters at Bangpoo Industrial Estate. The fresh round of talent development comes as part of Delta's innovation incubation program expansion which offers training and funds to more Thai engineering students.

Mr. Youngyut Pakdounjan, Delta Human Resource Development Director, hosted students and professors from Chulalongkorn University, Kasetsart University, King Mongkut's Institute of Technology , King Mongkut's Institute of Technology, Ladkrabang and King Mongkut's University of Technology (Thonburi and North Bangkok campuses). Students taking part in the program prepared an engineering project of products or solutions to meet social needs and deliver on the Delta brand promise: Smarter. Greener. Together.

At the ceremony, participants presented their projects to Delta's judging panel of senior management and technical specialists from various fields including business strategy, R&D and Industrial Internet of Things (IIoT) solutions. The winning products and solutions had real market applications including aged care products and agricultural production solutions. The Delta judging panel awarded four students with a oneyear internship contract, a certificate of achievement and a 100,000 THB scholarship. In addition, nineteen students received a certificate and a 20,000 THB scholarship.



As part of its commitment to the community, Delta leverages its innovation to respond to social needs. The rapid urbanization in the coastal Bangpoo and Praksa areas have disrupted the water flow in the local canal network. In 2015, unseasonal rainfall brought on by climate change caused floods in the Export Zone of the Bangpoo Industrial Estate. To address this issue, Delta proposed an innovative industrial cloud water pump control solution, which includes design, hardware, software and service.

The company donated its industrial cloud router as part of the control solution which operates in Bangpoo.

April 19, 2018- Delta Electronics (Thailand) PCL. welcomed Mr. Tada Soontonphan, Office of Bangpoo Industrial Estate's Director, and Ms. Nantawadee Kitisri, Global Utilities Services Company Ltd. (GUSCO) Head Office's Operations Manager, with 17 delegates from IEAT and Gusco to the company's Samutprakarn headquarters. Mr. Anusorn Muttaraid, Delta Executive Director, opened the donation ceremony to present Delta's industrial cloud water pump control solutions as a contribution to the Bangpoo Industrial Estate's Eco Green Network. In 2016, Delta joined the network, which includes the IEAT Bangpoo and 352 companies, to synergize environment protection efforts and boost the collaboration between the government and private sectors to mitigate the impact of floods and other natural disasters.

At the donation ceremony, Mr. Kasemson Kreuatorn, Delta's Senior Regional Manager for industrial automation, gave a detailed presentation of how [Delta's industrial cloud router](#) and its DIACloud service offer a precise monitoring and control solution for pump stations in the Bangpoo Industrial Estate's canal network to counter flooding. After the ceremony, Delta managers gave the visitors a tour of the company's rooftop solar energy solutions and highlighted the company's green products and solutions in its showroom. In addition, the delegation visited an IEAT water pump station in Bangpoo to see Delta's industrial cloud solution in operation.

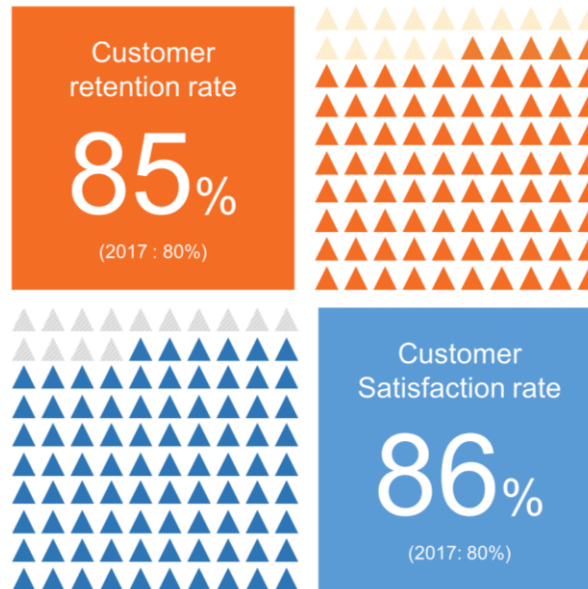
## Your satisfaction, our pride

Paradigm shift in sustainability requirement turns to be a new normal for long-term business relationship. From the changing scenario of global business, 4Ps (Product, Price, Place and Promotion) are not sufficient customer satisfaction and loyalty.

Plenty of non-financial dialogues between Delta and its world-class customers had opened in recent year. In 2018, Delta's sales representative and Sustainable Development Office receives a numbers of questionnaire from the company's customer. Code of conduct, Anti-corruption progress, human rights in supply, hazardous substance control and environmental management; for instance, had repeatedly engaged by our customers.

Customer satisfaction is positioned as the central driving force for all the factors, including Innovation, Quality, Agility and Teamwork accordingly to our corporate culture all Delta family aim for. As a result, Delta is constantly driven to foster worldclass standard level not just in product and technology but also in social and environmental inclusiveness to meet expectation.

In 2018, Delta conducted [Customer Satisfaction survey](#) by using on-line questionnaire to ensure our business really suit our customer's needs. The candidates had select accordingly to their contribution percentage of Delta's 43% sales revenue in the reporting cycle. The survey help to reflect the customer satisfaction level on the company's product, service and business ethics, etc. in different aspect. With 72% response rate, the 2018 customer satisfaction survey showed that customer rated high satisfaction 84% while moderate satisfaction 16%.



Our outstanding customer satisfaction rate correlates with our high customer retention and lifetime value (LTV)\*. From the standpoint of customer satisfaction, Delta gains from value-add to its core competencies, including cost-effectiveness, low service requirements, partnerships for sustainability and business that generates referrals for business growth. To help maintain its steady business growth, Delta has tracked the annual customer retention rate of its top 20 clients since 2014. During this reporting period, the company's annual customer retention rate was an impressive 85%.

*Remark:\* Due to customer's privacy and confidentiality agreement, Delta is not allow to publicly disclose this information*



General Motors Supplier Quality Excellence Award; for instance, can be concretely illustrate Delta's effort to response to customer's requirement. The award recognizes the achievements of General Motors (GM) valued business partners. Delta has been working with GM to develop onboard charging modules (OBCM) since 2007. Over the years Delta Automotive has continuously improved its performance in quality and delivery. Delta Automotive Plant Cross Functional Team (CFT) received a Certificate of Recognition for "Excellent teamwork to drive quality improvement with 100% Problem Reporting and Resolution (PRR) reduction from Y2016" from General Motors (Thailand) Ltd. Mr. Thawatpong Romkaew, Delta Automotive Quality Manager, also received a Certificate of Recognition as "Key person to drive quality system improvement and lead quality review during GM Vehicle Launch". Following the certificate, Delta Automotive met the criteria to win the coveted General Motors Supplier Quality Excellence Award.

# Appendix



# Independent Limited Assurance



## LRQA Assurance Statement

Relating to Delta Electronics (Thailand) Public Company Limited's within the Sustainability Report for the calendar year 2018

This Assurance Statement has been prepared for Delta Electronics (Thailand) Public Company Limited (DELTA) in accordance with our contract but is intended for the readers of this Report.

### Terms of Engagement

Lloyd's Register Quality Assurance Ltd. (LRQA) was commissioned by Delta Electronics (Thailand) Public Company Limited (DELTA) to provide independent assurance on its Sustainability Report 2018 (the Report) against the assurance criteria below to a moderate level of assurance and at the materiality of the professional judgement of the verifier using Accountability's AA1000AS (2008) Type 2 approach.

Our assurance engagement covered DELTA's operations and activities in Thailand only and specifically the following requirements:

- Evaluating the nature and extent of DELTA's adherence to all three AA1000 AccountAbility Principles - inclusivity, materiality and responsiveness.
- Confirming that the report is in accordance with GRI Standards and core option
- Evaluating the reliability of data and information for the selected economic, environmental and social indicators listed below:
  - GRI indicators 102-16 and 102-17 had been disclosed
  - Economics: Human Capital Return on Investment and Community investment (GRI201-1), Defined benefit plan obligations and other retirement plans (GRI201-3), Confirmed incidents of corruption and actions taken (GRI205-3)
  - Environmental: Recycled input materials used (GRI301-2); Energy consumption (GRI302-1); Direct GHG emissions (Scope 1) (GRI305-1); Energy indirect GHG emissions (Scope 2) (GRI305-2); Other indirect GHG emission (GRI305-3); and Waste by type and disposal method (GRI 306-2)
  - Social: Work-related injuries and Work-related ill health (GRI403-9 and 10).

Our assurance engagement excluded all of DELTA's operation outside of Thailand, excepted GHG emission which cover DELTA operations in India and Slovakia.

LRQA's responsibility is only to DELTA. LRQA disclaims any liability or responsibility to others as explained in the end footnote. DELTA's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the Report and for maintaining effective internal controls over the systems from which the Report is derived. Ultimately, the Report has been approved by, and remains the responsibility of DELTA.

### LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that DELTA has not:

- Met the requirements above
- Disclosed reliable performance data and information for the selected economic, environmental and social indicators as no errors or omissions were detected.
- Covered all the issues that are important to the stakeholders and readers of this Report.

The opinion expressed is formed on the basis of a moderate level of assurance and at the materiality of the professional judgement of the verifier.

**Note:** The extent of evidence-gathering for a moderate assurance engagement is less than for a high assurance engagement. Moderate assurance engagements focus on aggregated data rather than physically checking source data at sites.

### LRQA's approach

LRQA's assurance engagements are carried out in accordance with Accountability's AA1000AS (2008) Type 2 approach. The following tasks though were undertaken as part of the evidence gathering process for this assurance engagement:

- Assessing DELTA's approach to stakeholder engagement to confirm that issues raised by stakeholders were captured correctly. We did this through reviewing associated records.
- Reviewing DELTA's process for identifying and determining material issues to confirm that the right issues were included in their Report. We did this by benchmarking reports written by DELTA and its peers. We also tested the filters used in determining material issues to evaluate whether DELTA makes informed business decisions that may create opportunities that contribute towards sustainable development.



- Auditing DELTA's data management systems to confirm that there were no significant errors, omissions or mis-statements in the Report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems. We also spoke with those key peoples responsible for compiling the data and writing the Report.
- Sampling the consolidated data and information at DELTA's head office and Plants in Samutprakarn and Bangkok.

### Observations

Further observations and findings, made during the assurance engagement, are:

- Stakeholder inclusivity:  
We are not aware of any key stakeholder groups that have been excluded from DELTA's stakeholder engagement process.
- Materiality:  
We are not aware of any material issues concerning DELTA's sustainability performance that have been excluded from the Report. DELTA reviews regularly their material issues, against their established and extensive criteria for determining material issues, to reconfirm that their material issues are still relevant. The criteria for determining materiality are not biased to DELTA.
- Responsiveness:  
DELTA has processes for responding to various stakeholder groups, included disclosure of GHG related information to its clients and investors.
- Reliability:  
DELTA uses spreadsheets together with ERP to consolidate data and information associated with the selected economic, environmental and social indicators. DELTA should apply periodically internal verification to enhance the data quality and promote awareness of data and information disclosure throughout the operations.

### LRQA's competence and independence

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

This verification is the only work undertaken by LRQA for DELTA and as such does not compromise our independence or impartiality.

Signed

Opatt Charuratana  
LRQA Lead Verifier

On behalf of Lloyd's Register Quality Assurance Ltd.  
Lloyd's Register International (Thailand) Limited  
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LRQA reference: BGK405232

Dated: 18 September 2019



**AA1000**  
Licensed Assurance Provider  
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# About the report

Delta Electronic (Thailand) Public Company Limited or “Delta Thailand” or “Delta”’s disclosures annually disclose its Sustainable Development report to transparently communicate our continuous effort to ensure our stakeholder mutual benefit. Since our first stand-alone Sustainable development report launched with GRI-G4 standard in 2016, the company keep improve the accuracy of the report until our previous release with GRI Standard in June 2018.

## Reporting cycle

Annually, in June, Delta Thailand’s annual performance of economic, social, environmental and related achievements between January 1<sup>st</sup> and December 31<sup>th</sup> of 2018.

## Coverage

Delta’s fiscal year is from January to December. The report therefore covers performance over 1 year period, in accordance with the methodology used in Delta’s 2018 consolidated financial statements that covered a 12-month period. The scope of this report includes Delta and its subsidiaries in **Thailand and its overseas subsidiaries and associates in India and Slovakia** whose nature of business are **manufacturing and assembly factories**. Social and Environmental performance was consolidated from 7 factories in said 3 countries.

## Reporting standard

This report has been prepared **in accordance with the GRI Standards: Core Option** in both Thai and English. The material issues of this report has been selected as per the Company’s stakeholders’ feedback via our on-line questionnaire published on <https://goo.gl/HKsqeV> and also through face-to-face random interviews including emerging risk and issues consideration. The Company bases on Global Reporting Initiative’s [GRI Standards](#), Dow Jones Sustainability Index and SET Sustainability Awards frameworks to identify the questionnaire’s aspects per sustainability context, data collection as well as the report implementation.

The report qualitative and quantitative contents can be obviously indicated with GRI Content Index which shows in the final page after table of Company’s performance. In addition, to boost up both internal and stakeholder participation, Delta add the linkage of this report to related sustainable business practices into its GRI content table. Delta has engaged Lloyd’s Register, an independent third party, to provide external assurance for selected environmental and social indicators and ensure the accuracy and reliability of the data reported herein.

## Restatements of information

There was no major changes resulting from business merger and acquisition, base year change, nature of business nor measurement method during the reporting cycle.

### What u think?



Scan to voice us

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- website | [www.deltathailand.com](http://www.deltathailand.com)
- Sustainability Development webpage | [http://www.deltathailand.com/about\\_SD.php](http://www.deltathailand.com/about_SD.php)
- Delta Thailand’s Corporate & CSR News | <http://www.deltathailand.com/news.php>
- Share your suggestion on this report and the Company’s Sustainable Development.  
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# GRI Content Index

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
102-1	Name of the organization	<ul style="list-style-type: none"> <li>This report page 6</li> <li><a href="#">Annual report</a> page 4</li> </ul>			6.4.1, 6.4.2			
102-2	Activities, brands, products, and services	<ul style="list-style-type: none"> <li>This report page 6,8,9, 29</li> <li><a href="#">Annual report</a> page 6, 18-26</li> </ul>			6.4.1, 6.4.2			
102-3	Location of headquarters	<ul style="list-style-type: none"> <li>This report back cover</li> <li><a href="#">Annual report</a> page 4</li> </ul>			6.4.1, 6.4.2			
102-4	Location of operations	<ul style="list-style-type: none"> <li>This report page 55</li> <li><a href="#">Annual report</a> page 4, 12-16</li> </ul>			6.4.1, 6.4.2			
102-5	Ownership and legal form	<ul style="list-style-type: none"> <li>This report page 7</li> <li><a href="#">Annual report</a> page 4, 12-16</li> </ul>			6.4.1, 6.4.2			
102-6	Markets served	<ul style="list-style-type: none"> <li>This report page 10,24</li> <li><a href="#">Annual report</a> page 40, 42-44</li> </ul>			6.4.1, 6.4.2			
102-7	Scale of the organization	<ul style="list-style-type: none"> <li>This report page 7, 55</li> <li><a href="#">Annual report</a> page 17, 26, 32</li> </ul>			4.4, 6.4.1, 6.4.2			
102-8	Information on employees and other workers	This report page 73			4.4, 6.4.1, 6.4.2		principle 6	8.5, 10.3
102-9	Supply chain	This report page 4850-56			4.4, 6.4.1, 6.4.2			
102-10	Significant changes to the organization and its supply chain	This report page 7, 34, 48, 50, 55, 57			4.4, 6.4.1, 6.4.2			
102-11	Precautionary Principle or approach	This report page 19, 23, 29, 31, 36-39			4.4, 6.4.1, 6.4.2			
102-12	External initiatives	This report page 25, 35, 41			4.4, 6.4.1, 6.4.2	CC2.3 b , CC2.3c, CC 2.3 d		
102-13	Membership of associations	<ul style="list-style-type: none"> <li>This report page 32</li> <li><a href="#">Full Major social contribution list</a></li> </ul>			4.4, 6.4.1, 6.4.2			

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
102-14	Statement from senior decision-maker	This report page 5			4.4, 4.7, 6.2	CC2.2, CC2.2a, CC3.1, CC3.1e, CC3.1f		
102-15	Key impacts, risks, and opportunities	This report page 19, 36-39			4.4, 6.2	CC2.1, CC2.1a, CC2.1b, CC2.1c, CC2.2, CC2.2a, CC3.1a, CC3.1b, CC3.1c, CC3.1d, CC3.1e, CC3.1f, CC5.1, CC5.1a, CC5.1b, CC5.1c, CC6.1, CC6.1a, CC6.1b, CC6.1c		
102-16	Values, principles, standards, and norms of behavior	<ul style="list-style-type: none"> <li>This report page 4, 32-35</li> <li><a href="#">Corporate Governance Policy</a></li> <li><a href="#">Code of Conduct</a></li> <li><a href="#">Anti-corruption policy</a></li> <li><a href="#">Delta's membership on Thai CAC site</a></li> <li><a href="#">Supplier SR Management Measure</a></li> </ul>		✓	4.4		principle 10	16.3
103-1	Explanation of the material topic and its Boundary	This report page 27		✓	4.4, 5.2			
103-2	The management approach and its components	This report page 27,29		✓	4.4, 5.2			
103-3	Evaluation of the management approach	This report page 27,28,29,31,32,33		✓	4.4, 5.2			
102-17	Mechanisms for advice and concerns about ethics	This report page 33		✓	4.4		principle 10	16.3
102-18	Governance structure	<ul style="list-style-type: none"> <li>This report page 11, 27-31</li> <li><a href="#">Corporate Governance Policy</a></li> </ul>			4.4, 6.2	CC1.1, CC1.1a		
102-19	Delegating authority	This report page 11,24,29			4.4, 6.2			
102-20	Executive-level responsibility for economic, environmental, and social topics	This report page 24, 29			4.4, 6.2	CC1.1a		
102-21	Consulting stakeholders on economic, environmental, and social topics	This report page 16-18, 24			4.4, 6.2			16.7
102-22	Composition of the highest governance body and its committees	This report page 27, 29			4.4, 6.2			5.5, 16.7
102-23	Chair of the highest governance body	This report page 28			4.4, 6.2			16.6
102-24	Nominating and selecting the highest governance body	This report page 27-28			4.4, 6.2			16.7 5.5

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
102-25	Conflicts of interest	This report page 27-30			4.4, 6.2			16.6
102-26	Role of highest governance body in setting purpose, values, and strategy	This report page 29			4.4, 6.2			
102-27	Collective knowledge of highest governance body	This report page 27			4.4, 6.2			4.7
102-28	Evaluating the highest governance body's performance	This report page 29			4.4, 6.2			
102-29	Identifying and managing economic, environmental, and social impacts	This report page 11,24,29			4.4, 6.2	CC2.1, CC2.1a, CC2.1b, CC2.1c		16.7
102-30	Effectiveness of risk management processes	This report page 11-31, 36-39			4.4, 6.2	CC2.1, CC2.1a, CC2.1b, CC2.1c		
102-31	Review of economic, environmental, and social topics	This report page 29			4.4, 6.2	CC2.1, CC2.1a, CC2.1b, CC2.1c		
102-32	Highest governance body's role in sustainability reporting	This report page 5, 24			4.4, 6.2			
102-33	Communicating critical concerns	This report page 5, 24			4.4, 6.2			
102-34	Nature and total number of critical concerns	This report page 14-19, 29, 31			4.4, 6.2			
102-35	Remuneration policies	<ul style="list-style-type: none"> <li>• This report page 19, 29, 30</li> <li>• <a href="#">2018 AGM Minutes</a> page 7, 8</li> <li>• <a href="#">Annual report</a> page 141</li> </ul>			4.4, 6.2	CC1.2, CC1.2a		
102-36	Process for determining remuneration	This report 14-19, 36-38			4.4, 6.2			
102-37	Stakeholders' involvement in remuneration	<ul style="list-style-type: none"> <li>• <a href="#">2018 AGM Minutes</a> page 7, 8</li> </ul>			4.4, 6.2			16.7
102-38	Annual total compensation ratio	<ul style="list-style-type: none"> <li>• This report page 29, 30</li> <li>• <a href="#">2018 AGM Minutes</a> page 7</li> </ul>			4.4, 6.2			

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
102-39	Percentage increase in annual total compensation ratio	This report page 30			4.4, 6.2			
102-40	List of stakeholder groups	This report page 16-18			4.4			
102-41	Collective bargaining agreements	This report page 77			4.4		principle 3	8.8
102-42	Identifying and selecting stakeholders	This report page 16-18			4.4			
102-43	Approach to stakeholder engagement	This report page 16-18			4.4			
102-43 102-44	Approach to stakeholder engagement Key topics and concerns raised	This report page 16-19			4.4			
102-44	Key topics and concerns raised	This report page 19			4.4			
102-45	Entities included in the consolidated financial statements	This report page 57			4.4			
102-46	Defining report content and topic Boundaries	Appendix, About this report			4.4			
102-47	List of material topics	This report page 19		✓	4.4			
103-1	Explanation of the material topic and its Boundary	This report page 15-19		✓	4.4, 5.2			
103-2	The management approach and its components	This report page 15-19		✓	4.4, 5.2			
103-3	Evaluation of the management approach	This report page 15-19		✓	4.4, 5.2			
102-48	Restatements of information	Appendix, About this report						
102-49	Changes in reporting	This report page 99						

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
102-50	Reporting period	This report page 99						
102-51	Date of most recent report	This report page 99						
102-52	Reporting cycle	This report page 99						
102-53	Contact point for questions regarding the report	This report page 99						
102-54	Claims of reporting in accordance with the GRI Standards	This report page 99			4.2			
102-55	GRI content index	This report page 100						
102-56	External assurance	This report page 98			4.2	CC8.6, CC8.6a, CC8.6b, CC8.7, CC8.7a, CC8.8, CC14.2, CC14.2a		
201-1	Direct economic value generated and distributed	<ul style="list-style-type: none"> <li>This report page 27</li> <li><a href="#">Annual report</a> page 10,13-13, 27-28, 89,119-120</li> <li><a href="#">Full Major social contribution list</a></li> </ul>		✓	6.8.1, 6.8.2, 6.8.3, 6.8.7, 6.8.9	material issue		2.a, 5.1, 5.4, 7.a, 7.b, 8.1, 8.2, 9.1, 9.4, 9.5, 9.a
103-1	Explanation of the material topic and its Boundary	This report page 27, 32		✓	4.4, 5.2			
103-2	The management approach and its components	This report page 27, 32, 35		✓	4.4, 5.2			
103-3	Evaluation of the management approach	This report page 23		✓	4.4, 5.2			
201-2	Financial implications and other risks and opportunities due to climate change	This report page 27, 39			6.5.5	CC5.1, CC5.1a, CC5.1b, CC5.1c, CC6.1, CC6.1a, CC6.1b, CC6.1c	principle 7	13.1
201-3	Defined benefit plan obligations and other retirement plans	This report page 30, 75-76		✓	6.8.7			

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
201-4	Financial assistance received from government	This report page 34						
202-1	Ratio of entry level wage by gender compared to local minimum wage	This report page 75			6.3.7, 6.3.110, 6.4.3, 6.4.4, 6.8.1, 6.8.2		principle 6	1.2, 5.1, 8.2, 8.5
202-2	Proportion of senior management hired from the local community	This report page 73			6.4.3, 6.8.1, 6.8.2, 6.8.5, 6.7		principle 6	8.5
203-1	Infrastructure investments and services supported	This report page 42, 85, 90			6.3.9, 6.8.1, 6.8.2, 6.8.5, 6.8.7, 6.8.9			11.2, 2.a, 5.1, 7.a, 7.b, 9.1, 9.4, 9.a
203-2	Significant indirect economic impacts	This report page 23, 24, 36 - 38			6.3.9, 6.6.6, 6.6.7, 6.7.6, 6.8.1, 6.8.2, 6.8.7, 6.8.9			1.2, 10.b, 17.3, 2.3, 3.8, 8.2, 8.3, 8.5
204-1	Proportion of spending on local suppliers	This report page 50, 51			6.4.3, 6.6.6, 6.8.1, 6.8.2, 6.8.7			1.4, 5.1, 8.3
205-1	Operations assessed for risks related to corruption	This report page 32			6.6.1, 6.6.2, 6.6.3		principle 8 principle 10	16.5
205-2	Communication and training about anti-corruption policies and procedures	This report page 32, 33			6.6.3, 6.6.7		principle 7 principle 8 principle 10	16.5
205-3	Confirmed incidents of corruption and actions taken	This report page 34,35		✓	6.6.1, 6.6.2, 6.6.3		principle 8 principle 10	16.5
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	This report page 32			6.6.1, 6.6.2, 6.6.3		principle 8	16.3
301-1	Materials used by weight or volume	This report 55, 57			6.5.4		principle 7 principle 8	12.2, 8.4
301-2	Recycled input materials used	This report page 55		✓	6.5.4	material issue	principle 8	12.2, 12.5, 8.4
103-1	Explanation of the material topic and its Boundary	This report page 50, 52, 53		✓	4.4, 5.2			
103-2	The management approach and its components	This report page 50, 52, 53, 54		✓	4.4, 5.2			

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
103-3	Evaluation of the management approach	This report page 50, 52,53, 54		✓	4.4, 5.2			
301-3	Reclaimed products and their packaging materials	This report page 55					principle 8	12.2, 12.5, 8.4
302-1	Energy consumption within the organization	<ul style="list-style-type: none"> <li>This report page 57</li> <li><a href="#">ISO 50001 certificate</a></li> </ul>		✓	6.5.4	CC10.1a, CC11.2, CC11.3, CC11.3a, CC11.4, CC11.5	principle 7 principle 8	12.2, 13.1, 7.2, 7.3, 8.4
103-1	Explanation of the material topic and its Boundary	This report page 59		✓	4.4, 5.2			
103-2	The management approach and its components	This report page 44, 54, 59		✓	4.4, 5.2	CC3.1, CC3.1a, CC3.1b, CC3.1c		
103-3	Evaluation of the management approach	This report page 43, 44, 54, 59		✓	4.4, 5.2			
302-2	Energy consumption outside of the organization	This report page 58, 59			6.5.4		principle 8	12.2, 13.1, 7.2, 7.3, 8.4
302-3	Energy intensity	This report page 57, 59			6.5.4		principle 8	12.2, 13.1, 7.3, 8.4
302-4	Reduction of energy consumption	This report page 59, 62			6.5.4, 6.5.5		principle 8 principle 9	12.2, 13.1, 7.3, 8.4
302-5	Reductions in energy requirements of products and services	This report page 43			6.5.4, 6.5.5		principle 9	12.2, 13.1, 7.3, 8.4
303-1	Interactions with water as a shared resource	This report page 61, 64-67					principle 8	6.4
303-2	Management of water discharge-related impacts	This report page 61					principle 8	6.4
303-3	Water withdrawal	This report page 66					principle 7 principle 8	12.2, 6.3, 6.4, 8.4
303-4	Water discharge	This report page 66						

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
303-5	Water consumption	This report page 66					principle 8	
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	This report page 57, 66-67, 69			6.5.6			15.1, 15.4, 15.5, 6.6
304-2	Significant impacts of activities, products, and services on biodiversity	This report page 69			6.5.6		principle 8	14.2, 15.1, 15.4, 15.5, 6.6
304-3	Habitats protected or restored	<ul style="list-style-type: none"> <li>This report page 69</li> <li><a href="#">The River</a></li> </ul>			6.5.6		principle 8	14.2, 15.1, 15.4, 15.5, 6.6
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	<ul style="list-style-type: none"> <li>This report page 69</li> <li><a href="#">The River</a></li> </ul>			6.5.6		principle 8	14.2, 15.1, 15.4, 15.5, 6.6
305-1	Direct (Scope 1) GHG emissions	<ul style="list-style-type: none"> <li>This report page 58</li> <li><a href="#">Delta Thailand GHG Inventory Report</a></li> <li><a href="#">Delta Thailand ISO14064-1 certificate</a></li> <li><a href="#">Delta India ISO14064-1 certificate</a></li> <li><a href="#">Delta Slovakia ISO14064-1 certificate</a></li> </ul>		✓	6.5.5	CC13.1, CC13.1a, CC13.1b, CC13.2, CC13.2a, CC7.1, CC7.2, CC7.2a, CC7.3, CC7.4, CC8.1, CC8.2, CC8.9, CC8.9a, CC9.1, CC9.1a, CC9.2, CC9.2a, CC9.2b, CC9.2c, CC9.2d	principle 7 principle 8	12.4, 13.1, 14.3, 15.2, 3.9
305-2	Energy indirect (Scope 2) GHG emissions	<ul style="list-style-type: none"> <li>This report page 58</li> <li><a href="#">Delta Thailand GHG Inventory Report</a></li> <li><a href="#">Delta Thailand ISO14064-1 certificate</a></li> <li><a href="#">Delta India ISO14064-1 certificate</a></li> <li><a href="#">Delta Slovakia ISO14064-1 certificate</a></li> </ul>		✓	6.5.5	CC13.1, CC13.1a, CC13.1b, CC13.2, CC13.2a, CC7.1, CC7.2, CC7.2a, CC7.3, CC7.4, CC8.1, CC8.3, CC8.3a, CC10.1, CC10.1a, CC10.2, CC10.2a, CC10.2b, CC10.2c	principle 7 principle 8	12.4, 13.1, 14.3, 15.2, 3.9
305-3	Other indirect (Scope 3) GHG emissions	<ul style="list-style-type: none"> <li>This report page 58</li> <li><a href="#">Delta Thailand GHG Inventory Report</a></li> <li><a href="#">Delta Thailand ISO14064-1 certificate</a></li> <li><a href="#">Delta India ISO14064-1 certificate</a></li> <li><a href="#">Delta Slovakia ISO14064-1 certificate</a></li> </ul>		✓	6.5.5	CC13.1, CC13.1a, CC13.1b, CC13.2, CC13.2a, CC3.1a, CC3.1b, CC3.1c, CC3.1e, CC8.9, CC8.9a, CC14.1	principle 7 principle 8	12.4, 13.1, 14.3, 15.2, 3.9

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
103-1	Explanation of the material topic and its Boundary	This report page 8,58		✓	4.4, 5.2	CC1.1, CC1.1a, CC1.2, CC1.2a, CC2.1, CC2.1a, CC2.1b, CC2.1c, CC2.1d, CC2.2, CC2.2a, CC2.2b, CC2.2c, CC2.2d, CC3.1, CC3.1a, CC3.1b, CC3.1c, CC3.3, CC3.3a, CC3.3b, CC3.3c, CC3.3d, CC8.4, CC8.4a		
103-2	The management approach and its components	This report page 8, 10, 20, 23, 58		✓	4.4, 5.2	CC1.1, CC1.1a, CC1.2, CC1.2a, CC2.1, CC2.1a, CC2.1b, CC2.1c, CC2.1d, CC2.2, CC2.2a, CC2.2b, CC2.2c, CC2.2d, CC3.1, CC3.1a, CC3.1b, CC3.1c, CC3.3, CC3.3a, CC3.3b, CC3.3c, CC3.3d, CC8.4, CC8.4a		
103-3	Evaluation of the management approach	This report page 23,58		✓	4.4, 5.2			
305-4	GHG emissions intensity	<ul style="list-style-type: none"> <li>This report page 58</li> <li><a href="#">Delta Thailand GHG Inventory Report</a></li> </ul>			6.5.5	CC12.2, CC12.3	principle 8	13.1, 14.3, 15.2
305-5	Reduction of GHG emissions	<ul style="list-style-type: none"> <li>This report page 58</li> <li><a href="#">Delta Thailand GHG Inventory Report</a></li> </ul>			6.5.5	CC3.3a, CC3.3b, CC7.2, CC7.2a, CC7.3, CC12.1, CC12.1a, CC12.1b, CC14.3, CC14.3a	principle 8	13.1, 14.3, 15.2
305-6	Emissions of ozone-depleting substances (ODS)	This report page 59			6.5.3, 6.5.5		principle 7 principle 8	12.4, 3.9
305-7	Nitrogen oxides (NO <sub>x</sub> ), sulfur oxides (SO <sub>x</sub> ), and other significant air emissions	This report page 65			6.5.3		principle 7 principle 8	12.4, 14.3, 15.2, 3.9
306-2	Waste by type and disposal method	This report page 64		✓	6.5.3		principle 8	12.4, 12.5, 3.9, 6.3

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
306-3	Significant spills	<ul style="list-style-type: none"> <li>This report page 65</li> <li><a href="#">Local regulator official endorsement</a></li> </ul>			6.5.3		principle 8	12.4, 14.1, 15.1, 3.9, 6.3, 6.6
306-4	Transport of hazardous waste	<ul style="list-style-type: none"> <li>This report page 64</li> <li><a href="#">Local regulator official endorsement</a></li> </ul>			6.5.3		principle 8	12.4, 3.9
307-1	Non-compliance with environmental laws and regulations	<ul style="list-style-type: none"> <li>This report page 58-59</li> <li><a href="#">Local regulator official endorsement</a></li> </ul>			4.6		principle 8	16.3
308-1	New suppliers that were screened using environmental criteria	<ul style="list-style-type: none"> <li>This report page 50-51</li> <li><a href="#">Procurement agreement</a></li> <li><a href="#">Supplier SR Management Measure</a></li> </ul>			6.3.5, 6.6.6		principle 8	
308-2	Negative environmental impacts in the supply chain and actions taken	This report page 50,52			6.3.5, 6.6.6		principle 8	
401-1	New employee hires and employee turnover [This Standard includes a Standard Interpretation on how to calculate the rates of new employee hires and employee turnover.]	<ul style="list-style-type: none"> <li>This report page 72-73</li> <li><a href="#">Employment policy</a></li> </ul>			6.4.1, 6.4.2, 6.4.3		principle 6	5.1, 8.5, 8.6
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	<ul style="list-style-type: none"> <li>This report page 76</li> <li><a href="#">Employment policy</a></li> <li><a href="#">Welcome onboard</a>, manual for new employees</li> </ul>			6.4.1, 6.4.2, 6.4.4, 6.8.7		principle 8	3.2, 5.4, 8.5
401-3	Parental leave	<ul style="list-style-type: none"> <li>This report page 74</li> <li><a href="#">Employment policy</a></li> <li><a href="#">Welcome onboard</a>, manual for new employees</li> </ul>			6.4.1, 6.4.2, 6.4.4		principle 6	5.1, 5.4, 8.5
402-1	Minimum notice periods regarding operational changes	<ul style="list-style-type: none"> <li>This report page 74</li> <li><a href="#">Employment policy</a></li> <li><a href="#">Welcome onboard</a>, manual for new employees</li> </ul>			6.4.1, 6.4.2, 6.4.3, 6.4.5		principle 3	8.8
403-1	Occupational health and safety management system	<ul style="list-style-type: none"> <li>This report page 81-82</li> <li>ISO 18001 certificate: <a href="#">Thailand</a>, <a href="#">India</a>, <a href="#">Slovakia</a></li> </ul>						8.8
403-2	Hazard identification, risk assessment, and incident investigation	This report page 68, 81-85		✓				3.3, 3.4, 3.9, 8.8
103-1	Explanation of the material topic and its Boundary	This report 71		✓	4.4, 5.2		principle 7 principle 8	
103-2	The management approach and its components	This report page 64, 65, 66, 68, 76, 81-85		✓	4.4, 5.2		principle 7 principle 8	

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
103-3	Evaluation of the management approach	This report page 65, 82, 83, 68		✓	4.4, 5.2		principle 8	
403-3	Occupational health services	This report page 64, 65, 66, 68, 76, 81-85						3.3, 3.4, 3.9, 8.8
403-4	Worker participation, consultation, and communication on occupational health and safety	This report 68						8.8
403-5	Worker training on occupational health and safety	This report 83						
403-6	Promotion of worker health	<ul style="list-style-type: none"> <li>This report page 82-83</li> <li><a href="#">Employment policy</a></li> <li><a href="#">Welcome onboard</a>, manual for new employees</li> </ul>						
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	This report 82, 83						
403-8	Workers covered by an occupational health and safety management system	This report 82, 83						
403-9	Work-related injuries	This report page 82		✓				
403-10	Work-related illness	This report page 82		✓				
103-1	Explanation of the material topic and its Boundary	This report page 81-82		✓	4.4, 5.2		principle 7 principle 8	
103-2	The management approach and its components	This report page 81-83		✓	4.4, 5.2		principle 7 principle 8	
103-3	Evaluation of the management approach	This report page 83		✓	4.4, 5.2		principle 8	
404-1	Average hours of training per year per employee	This report page 80			6.4.7		principle 6	4.3, 4.4, 4.5, 8.2, 8.5
404-2	Programs for upgrading employee skills and transition assistance programs	<ul style="list-style-type: none"> <li>This report page 79</li> <li><a href="#">Employment policy</a></li> <li><a href="#">Full Major social contribution list</a></li> </ul>			6.4.7, 6.8.5		principle 8	8.2, 8.5

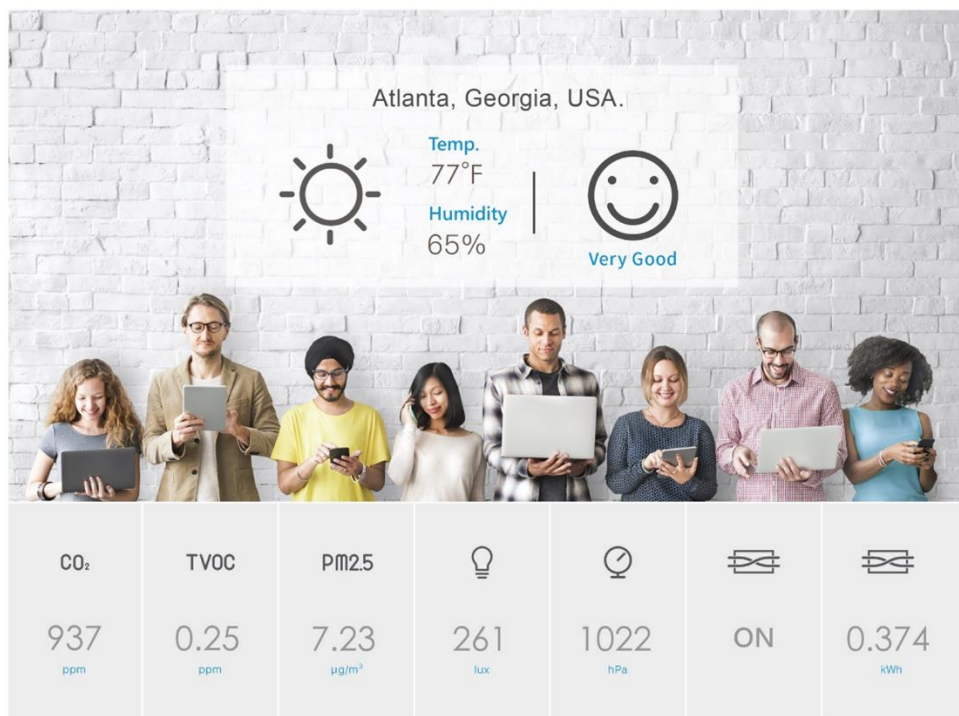
GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
404-3	Percentage of employees receiving regular performance and career development reviews	This report page 79			6.4.7		principle 6	10.3, 5.1, 8.5
405-1	Diversity of governance bodies and employees	<ul style="list-style-type: none"> <li>This report page 28,72-74</li> <li><a href="#">CG Policy</a></li> <li><a href="#">Employment policy</a></li> </ul>			6.2.3, 6.3.7, 6.3.110, 6.4.3		principle 6	5.1, 5.5, 8.5
405-2	Ratio of basic salary and remuneration of women to men	This report page 75			6.3.7, 6.3.10, 6.4.3, 6.4.4		principle 6	10.3, 5.1, 8.5
406-1	Incidents of discrimination and corrective actions taken	This report page 54			6.3.1, 6.3.2, 6.3.6, 6.3.7, 6.3.10, 6.4.3		principle 6	16.b, 5.1, 8.8
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	This report page 50,52			6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.8, 6.3.10, 6.4.5, 6.6.6		principle 3	8.8
408-1	Operations and suppliers at significant risk for incidents of child labor	This report page 50,52			6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.5, 6.3.10, 6.6.6, 6.8.4		principle 5	16.2, 8.7
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	<ul style="list-style-type: none"> <li>This report page 50-51</li> <li><a href="#">Procurement agreement</a></li> <li><a href="#">RMI Agreement</a></li> <li><a href="#">Supplier SR Management Measure</a></li> </ul>			6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.10, 6.6.6		principle 4	8.7
410-1	Security personnel trained in human rights policies or procedures	This report page 82-83			6.3.1, 6.3.2, 6.3.4, 6.3.5, 6.6.6		principle 1	16.1
411-1	Incidents of violations involving rights of indigenous peoples	This report page 74			6.3.1, 6.3.2, 6.3.4, 6.3.6, 6.3.7, 6.3.8, 6.6.7, 6.8.3		principle 1	2.3
414-2	Negative social impacts in the supply chain and actions taken	This report page 50,54			6.3.1, 6.3.2, 6.3.5, 6.4.3		principle 7 principle 8	
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	<ul style="list-style-type: none"> <li>This report page 50</li> <li><a href="#">Procurement agreement</a></li> </ul>			6.3.1, 6.3.2, 6.3.3, 6.3.5, 6.6.6		principle 2	
412-2	Employee training on human rights policies or procedures	This report page 52,80			6.3.1, 6.3.2, 6.3.5		principle 1	
412-1	Operations that have been subject to human rights reviews or impact assessments	This report page 36, 52, 69			6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5		principle 1	
414-1	New suppliers that were screened using social criteria	<ul style="list-style-type: none"> <li>This report page 50-53</li> <li><a href="#">Procurement agreement</a></li> <li><a href="#">Supplier SR Management Measure</a></li> </ul>			6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.6.6		principle 2	16.1, 5.2, 8.8

GRI Standard	Description	Page / Link	Reason for omission	External Assurance	Linkage to other initiatives			
					ISO26000	CDP	UNGC	SDG
414-2	Negative social impacts in the supply chain and actions taken	This report page 52-53			6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.6.6		principle 2	16.1, 5.2, 8.8
413-1	Operations with local community engagement, impact assessments, and development programs	This report page 36, 71			6.3.9, 6.5.1, 6.5.2, 6.5.3, 6.7.9		principle 1	
413-2	Operations with significant actual and potential negative impacts on local communities	<ul style="list-style-type: none"> <li>This report page 36,71</li> <li><a href="#">Local regulator official endorsement</a></li> </ul>			6.3.9, 6.5.3, 6.7.9		principle 1	2.3
414-1	New suppliers that were screened using social criteria	<ul style="list-style-type: none"> <li>This report page 50, 53</li> <li><a href="#">Procurement Agreement</a></li> </ul>			6.3.5, 6.6.6, 6.8.1, 6.8.2		principle 7 principle 8	
414-2	Negative social impacts in the supply chain and actions taken	<ul style="list-style-type: none"> <li>This report page 50, 53</li> <li><a href="#">Supplier SR Management Measure</a> page 4-13</li> </ul>			6.3.5, 6.6.1, 6.6.2, 6.6.6, 6.8.1, 6.8.2		principle 7 principle 8	
415-1	Political contributions	<ul style="list-style-type: none"> <li>This report page 91</li> <li><a href="#">Membership of Association</a></li> <li><a href="#">Full Major social contribution list</a></li> </ul>				CC2.3, CC2.3a, CC2.3e, CC2.3f, CC2.3g	principle 8 principle 10	16.5
416-1	Assessment of the health and safety impacts of product and service categories	This report page 32, 42, 45			6.7.1, 6.7.2, 6.7.4, 6.7.5, 6.8.8		principle 8	
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	This report page 44			4.6, 6.7.1, 6.7.2, 6.7.4, 6.7.5, 6.8.8		principle 8	16.3
417-1	Requirements for product and service information and labeling	This report page 45			6.7.1, 6.7.2,, 6.7.3, 6.7.4, 6.7.5, 6.7.9		principle 8	12.8
417-2	Incidents of non-compliance concerning product and service information and labeling	This report page 44			4.6, 6.7.1, 6.7.2, 6.7.3, 6.7.4, 6.7.5		principle 7 principle 8	16.3
417-3	Incidents of non-compliance concerning marketing communications	This report page 63			4.6, 6.7.1, 6.7.2, 6.7.3		principle 7 principle 8	16.3
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	<ul style="list-style-type: none"> <li>This report page 34-35</li> <li><a href="#">ISO/IEC27001:2013 certificate</a></li> </ul>			6.7.1, 6.7.2, 6.7.6		principle 8	16.a, 16.3, 16.10
419-1	Non-compliance with laws and regulations in the social and economic area	<ul style="list-style-type: none"> <li>This report page 34-35</li> <li><a href="#">Local regulator official endorsement</a></li> </ul>			4.6, 6.7.1, 6.7.2, 6.7.6		principle 7 principle 8	16.3



# uno<sup>®</sup>

## Indoor Environmental Quality Solution



Comfort



Intelligence



Energy saving



Simple installation



Remote monitoring



Experience **uno** at Delta Electronics (Thailand) today.  
products\_info@deltathailand.com



Colors  
● White ● Black

### Feature

#### Zone information

-Zone IAQ and PMV data  
-Viewer command feedback

#### WiFi & Bluetooth

-Wi-Fi 802.11b/g/n  
-Bluetooth v4.1

#### Connectivity

-Connecting environment  
-Connecting equipment  
-Connecting mobile  
-Connecting cloud

#### Cloud embedded

-API service ready









#### App

-iOS  
-Android

#### Data analysis

-IAQ analysis  
-PMV analysis

### S1649 specification

Model name		S1649(indoor environmental quality controller)	LED	Green-power x1, WIFI x1, blue-bluetooth x2, red-error x1
Sensor	Temperature	0 ~ 50°C (32 ~ 122°F)	Operating temperature	0 ~ 35°C (32 ~ 95°F)
	Humidity	0 ~ 99%	Power consumption	2.6W
	CO2 <sup>1</sup>	Measurement range : 400 ~ 10,000ppm Accuracy : 400 ~ 2,000ppm ± 50ppm	Input power	DC 5V/2A
	TVOC <sup>2</sup>	0.125 ~ 0.6ppm	Dimension	140 x 140 x 39mm(5.5" x 5.5" x 1.54")
	PM2.5 <sup>3</sup>	0 ~ 500µg/m³ ± 15µg/m³	Weight	300g
	Pressure	260 ~ 1,260 hPa	Smartphone requirements	iOS / Android
	Ambient light	0 ~ 1,500 lux	<div><ul style="list-style-type: none"><li>• International Certification</li></ul><div></div><ul style="list-style-type: none"><li>• ITRI(Industrial Technology Research Institute)</li></ul><div></div></div>	
Communication	Wi-Fi	IEEE 802.11 b/g/n		
	Bluetooth	Bluetooth low energy v4.1		
	LAN	Ethernet 10/100Mbps		
Wireless encryption / security		Support WPA-PSK(TKIP)/WPA-PSK(AES), WPA2-PSK(TKIP)/WPA2-PSK(AES), WPA2-Enterprise(AES)		

Remarks:

- CO2 measurement range/accuracy range
- TVOC unit conversion 1ppm=1,000ppb
- PM2.5 accuracy tolerance ±15µg/m³

- The information and specifications contained herein are subject to change without notice.

- Actual performance and measurement of the product will vary from operation conditions and environmental factors, result in discrepancy on actual operation measuring indications.

Power Input	Input Rating	380~415 Vac; 50 / 60 Hz; Three-phase / L1, L2, L3, N, PE
	Power Factor	> 0.98
	Current THD	Compliant with IEC 61000-3-12
	Efficiency	94%
Power Output	DC Output #1*	IEC CCS DC Level 2, 50-500 Vdc, 60A max., 25kW max. (Optional: SAE DC)
	DC Output #2	CHAdeMO, 50-500 Vdc, 60A max., 25kW max.
Protection	Protection	Over current, Under voltage, Over voltage, Residual current, Surge protection, Short circuit, Over temperature, Ground fault
User Interface & Control	Display	2.7" OLED screen
	Support Language	English (Other languages available upon request)
	Push Buttons	Multi-functional buttons (LED light: Orange, Blue) / Emergency stop button (Red)
	Charge Options	Charge options to be provided upon request: Charge by duration, Charge by energy
Communication	User Authentication	ISO/IEC 14443 Type A/B RFID for user authentication
	Network Interface	Ethernet (standard); 3G (optional); Wifi (optional)
	Operating Temperature	-30°C to +50°C (-22°F to +122°F)
	Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Environmental	Humidity	< 95% relative humidity, non-condensing
	Altitude	Up to 2000 m (6500 ft.)
	Ingress Protection	IP55
	Enclosure Protection	IK10
Mechanical	Cooling	Forced air
	Charging Cable Length	4 m (13 ft.)
	Dimension (W × H × D) / Weight	680 × 430 × 230 mm (27 × 17 × 9 in.) 47kg (104 lb), excluding plug and cable
Regulation	Certificate / Compliance	CE, CHAdeMO / IEC 61851-1 / IEC 61851-23
Compatibility	Compatible vehicle brands	CCS: BMW, GM, Volkswagen; CHAdeMO: Nissan, Toyota, Mitsubishi, Peugeot, Citroen

\* SAE DC is optional, Maximum current is 65A.  
Specifications are subject to change without notice.

**Delta Electronics (Thailand) PCL.**  
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Pattana 1 Rd., T.Phraksa, A.Muang,  
Samutprakarn 10280, Thailand  
TEL: +66 (0) 2709-2800  
FAX: +66 (0) 2709-3200  
For more product information and sales inquiries,  
Please contact [ev.det@deltavv.com](mailto:ev.det@deltavv.com)

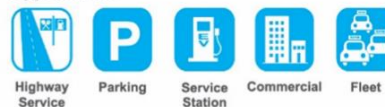


## Delta DC Wallbox EV Charger

### Key Features

- CCS\* / CHAdeMO dual charging ports
- DIN 70121 / CHAdeMO compliance
- Max. output power: 25kW
- Output voltage range: 50-500Vdc (Combo); 50-500Vdc (CHAdeMO)
- Max. 94% power efficiency
- RFID card reader for user authentication
- Network connectivity (OCPP)
- IP55 protection and IK10 vandal-proof casing

### Applications



[www.deltathailand.com/th/product\\_EVcharging.php](http://www.deltathailand.com/th/product_EVcharging.php)

**DELTA**  
Smarter. Greener. Together.



บริการธุรกิจตอบรับ

ใบอนุญาตเลขที่ 4/17 ปณ.บางปู  
ถ้าหากส่งในประเทศไม่ต้องสมัครเข้าประชุมวิชาการ



คณะกรรมการเพื่อการพัฒนาที่ยั่งยืน  
บริษัท เทคโนโลยี อีเลคโทรนิคส์ (ประเทศไทย) จำกัด (มหาชน)  
909 ซอย 9 หมู่ 4 นิคมอุตสาหกรรมบางปู (เขตส่งออก)  
ถ.พัฒนา 1 ต.เทพราชา อ.เมือง จ.สมุทรปราการ  
1 0 2 8 0

## Share your comment on this report

1. Which group of reader are you in?  
☐ Regulator    ☐ Business partner    ☐ Customer    ☐ Creditor    ☐ Shareholder/ investor    ☐ Delta employee    ☐ Student    ☐ Research/ educational institute  
☐ Media    ☐ Community    ☐ Student    ☐ Sustainable report developer    ☐ Others (please specify).....
  
2. Which rank of age are you in?  
☐ under 22 yrs. old    ☐ 22 – 35 yrs. old    ☐ 36 – 46 yrs. old    ☐ 46 – 60 yrs. old    ☐ 61 yrs. old and above
  
3. Your overall satisfaction on this report
 

3.1) Easiness to understand	<input type="radio"/> High	<input type="radio"/> Moderate	<input type="radio"/> Need improvement
3.2) Attraction of the contents	<input type="radio"/> High	<input type="radio"/> Moderate	<input type="radio"/> Need improvement
3.3) Content grouping and chronicle	<input type="radio"/> High	<input type="radio"/> Moderate	<input type="radio"/> Need improvement
3.4) Completeness of material issues	<input type="radio"/> High	<input type="radio"/> Moderate	<input type="radio"/> Need improvement
3.5) Inclusiveness of stakeholders	<input type="radio"/> High	<input type="radio"/> Moderate	<input type="radio"/> Need improvement
3.6) Balance of the content	<input type="radio"/> High	<input type="radio"/> Moderate	<input type="radio"/> Need improvement
3.7) Key indicator mapping to related initiatives	<input type="radio"/> High	<input type="radio"/> Moderate	<input type="radio"/> Need improvement
3.8) Validity of additional information links	<input type="radio"/> High	<input type="radio"/> Moderate	<input type="radio"/> Need improvement
3.9) Overall satisfaction level	<input type="radio"/> High	<input type="radio"/> Moderate	<input type="radio"/> Need improvement
  
4. What are your top 3 subjects ae you interested in?  
 4.1).....  
 4.2).....  
 4.3).....
  
5. How should Delta improve our Sustainable Development Report to suit your requirement?  
 5.1).....  
 5.2).....  
 5.3).....
  
6. Here's your e-mail address .....and you would like to stay connect with Delta's move on these matters:  
☐ Press release activity    ☐ Annual and Sustainable Development report    ☐ Social contribution projects    ☐ New product launch    ☐ Others.....

Share your suggestion on this report  
and Delta's Sustainable Development activities.

**Sustainable Development Committee**

**Delta Electronics (Thailand) Public Company Limited**

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