



# INNOVATIVE AND SUSTAINABLE

POWER FOR ALL







# ABOUT THIS REPORT

Global Power Synergy Public Company Limited (the "Company" or "GPSC") publishes its sustainability report annually to disclose information relating to economic, social and environmental performance and to reflect its operations focusing on sustainable development in the dimensions crucial to its business and to all stakeholders. The scope of this report\*, which covers the period January 1 to December 31, 2019, encompasses all business operations in the Global Power Synergy Group (100%) in which GPSC holds more than 50% of the shares and for which it has operational control.

This report has been written in accordance with the international Integrated Reporting <IR> Framework as published by the International Integrated Reporting Committee (IIRC) and the Global Reporting Initiative Standards (GRI Standards) which are internationally accepted guidelines for sustainability reporting with additional indicators of Electric Utilities Sector Disclosures (EUSD) for companies in the electric utilities industry. Moreover, the report also provides preliminary information on the company's operations that are aligned with the United Nations Sustainable Development Goals (SDGs).



This sustainability report has been verified for data accuracy and in accordance with the Global Reporting Initiative (GRI Standards) at the limited assurance level by SGS (Thailand) Limited. Additional details on data verification can be found in the Assurance Statement on page 99-100. This is the third year of verification by external organizations and reflects the

GPSC is committed to improving the quality of its sustainability report and to raising the standards of information disclosure. Therefore, all suggestions are welcome and will be incorporated into the company's operational process to promote sustainable development with all stakeholders. GPSC can be reached via the following channels:

#### **CONTACT CHANNELS**



www.gpscgroup.com



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Remark: \*On 31 December 2019, GPSC has finished the acquisition of Glow Energy Public Company Limited or "GLOW". The company has completed the Delisting Tender Offer on 2 December 2019 and GLOW has been delisted from being listed on the Stock Exchange of Thailand on 13 December 2019. At present, the company has hold a total of 1,460,360,024 shares of GLOW or 99.83% of the total issued shares of GLOW resulting in the scope of reporting will be different from the previous year.

# Mr. Chawalit Tippawanich President and Chief Executive Officer

## MESSAGE FROM PRESIDENT AND CEO

The year 2019 was a challenging one for the company due to ever-changing situations and disruptions coupled with increasingly severe and more frequent impacts of climate change, as well as consumer behaviors change caused by has continued to thrive, the result of being able to achieve its missions, namely the commercial commencement of Nam Lik Power Company Limited (NL1PC), Xayaburi Power Company Limited (XPCL) and Central Utility Plant 4, as well as the acquisition of Glow Energy Public Company Limited (GLOW), all of which have served to enhance power and public utility stability for customers as planned. GPSC's net profit has risen by 21% from the previous year, making the company the 4<sup>th</sup> largest power company in Thailand. In addition, due to excellent management of its financial structure, the company has retained its credibility in investment, scoring AA- in the TRIS Rating, and accorded A+ by Fitch Rating. These recognitions show that the company continues to enjoy a strong financial position.

Additionally, the company has operated in line with its commitment to innovation development alongside social and environmental responsibilities. We have always been well-prepared to face major challenges, both short-term and long-term, and these include 1) De-Carbonization: reduction of greenhouse gas emission and climate change; 2) De-Centralizing Power Generation: change in consumer behaviors and accessibility to power from remote areas; and 3) Disruptive Technologies: digital transformation that has impacts on business operations to match consumers' changing behaviors and climate change. The company's transformation, such as application of an energy storage system with renewable energy, has become a contributing factor to the company's

strategy towards sustainability and increasing the use of renewable energies. To foster the company's growth through technology and innovations, the Energy Storage System (ESS), which is an extension of the Solar Rooftop project, has been installed at PTT Gas stations and Café Amazon outlets to reduce electricity costs. This is an effective move along the path towards the company's success and social and environmental sustainability.

To achieve its vision and missions in the context of today's rapid changes, the company has set '3S' as its business strategy and target in order to co-create innovative and sustainable power for all, and to embrace the United Nations' Sustainable Development Goals (SDGs), as follows:

- S1: SYNERGY & INTEGRATION: co-creating added values and managing integrated assets;
- S2: SELECTIVE GROWTH: expanding business and power generation capacity, in tandem with PTT group and potential regional area growth; and
- S3: S-CURVE BUSINESS: expanding innovation investment to generate revenue from new businesses models in the face of power and energy business disruption.

Meanwhile, readiness of human resources has remained one of the company's focuses. The company's staff are trained to ensure higher capability and greater potential for future business

The company's performance in 2019 towards sustainable development across economic, social and environmental dimensions has allowed it to gain confidence and affirmation from various organizations, both domestically and internationally

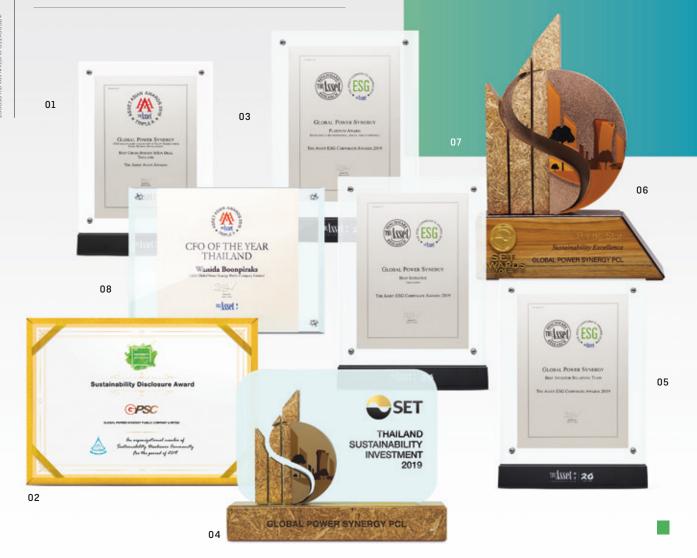
The company's recognitions include the 2019 "Rising Star Sustainability Awards" and Thailand Sustainability Investment (THSI) by the Stock Exchange of Thailand; the Asset Platinum Award for Excellence in ESG and the Asset Best Initiative in Innovation by Energy Storage System Solution, assessed by the Asset ESG Awards 2019. On the environmental front, the company has taken part in the Carbon Disclosure Project (CDP), an internationally recognized institute for environmental impact management. The company was ranked at B level (Management Level), making it the only power company in Thailand to gain acceptance in risk management and environmental impact reduction measures. Moreover, the company won recognition from the Thailand Greenhouse Gas Management Organization (TGO) for its low-carbon prototype plants in the Eastern Economic Corridor (EEC) in compliance with the government's policy on eco-industrial city development.

In the future, the company will continue to work towards constant growth and sustainability with an emphasis on increasing clean energy and development of an energy storage system. This is a sustainable way to ensure national energy security by taking into consideration all groups of stakeholders, enhancing business competitiveness amid energy transformation, and being a leader in power business innovations of the PTT Group.

Last but not least, on behalf of the company, I would like to thank all the employees and stakeholders in all sectors, who have always supported the company. Continuing to adhere to the good governance principle, along with co-creating social and environmental values with stakeholders, the company is ready to continue going from strength to strength as a leading international innovative and sustainable power company.

## **AWARDS AND RECOGNITION**

#### **EXCELLENT AND SUSTAINABLE PERFORMANCE**



01

# Best Cross-Border M&A Deal Thailand from The Asset Triple A Country Awards 2019

The Asset

02

#### Sustainability Disclosure Award 2019

Thaipat Institute

03

#### Platinum Award Winners from The Asset ESG Corporate Awards 2019

The Asset

04

## Thailand Sustainability Investment 2019

The Stock Exchange of Thailand

05

#### Best Investor Relations Team Award from The Asset ESG Corporate Awards 2019

The Asset

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#### **Rising Star Sustainability Awards**

The Stock Exchange of Thailand

07

Best Initiative in Innovation: Energy Storage System (ESS) from The Asset ESG Corporate Awards 2019

The Asset

08

#### CFO of the Year Award 2019 in Treasury, Trade, Supply Chain and Risk Management

The Asset



09

#### Certification of Green Meetings for the Year 2019

Thailand Business Council for Sustainable

10

Plaque of Honor for Harticipation in the Project to Create Database for Resource Sharing (RECP) and Enhancing Industrial Plants in Eco-industrial Cities

Department of Industrial Works

11

## Thailand Voluntary Emission Reduction Program:

- 1. T-VER 1 Project, Low Emission
- 2. Support Scheme: LESS 8 Projects
  Thailand Greenhouse Gas Management
  Organization (Public Organization)

12

#### **Low-carbon Industrial Factory**

Thailand Greenhouse Gas Management Organization (Public Organization)

13

#### Certificate of "Reducing Global Warming by Cool-mode, Number 5 Power-Saving Clothes"

Thailand Textile Institute and Thailand Greenhouse Gas Management Organization (Public Organization)

#### **ENVIRONMENTAL RESPONSIBILITY**



**CSR-DIW Continuous Award 2019** 

15

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#### Prime Minister Road Safety Awards 2019. The company was granted the award as it was classified as a company, which is outstanding in focusing on road safety

Provincial Traffic Accident Prevention Support Office



16

#### Asia Responsible Enterprise Award 2019 (in the Category of Green Leadership Award)

Enterprise Asia

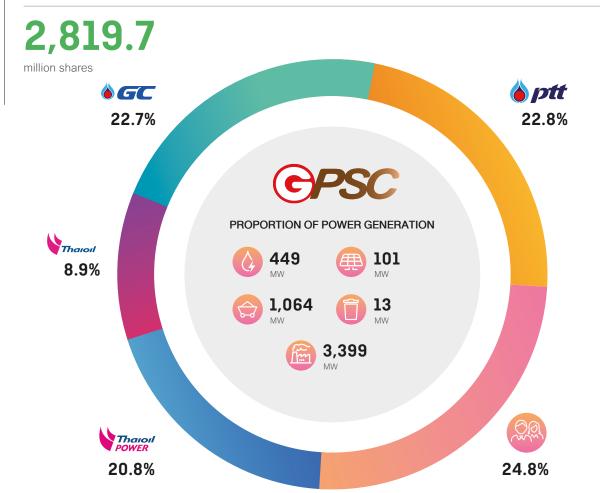
14

Department of Industrial Works

## **ABOUT THE COMPANY**



#### **GPSC'S SHAREHOLDING STRUCTURE**



BUSINESS OPERATION OVERVIEW	Thailand	International
Power	Commercialize <b>4,238</b> MW Under Construction <b>318</b> MW	Commercialize 470 MW Under Construction 0 MW
Chilled Water	Commercialize 15,400 RT	-
Steam	Commercialize 2,698 Tons/hour Under Construction 178 Tons/hour	-
Industrial Water	Commercialize <b>7,372</b> Cu.m/hour	-
Hydro Power  Coal Power	Solar Power  Waste to Energy (WTE), Biomass	Natural Gas

# TAINIABILITY BEDODT

#### **BUSINESS STRATEGY**





## **VISION**

The global leading innovative and sustainable power company



## **MISSION**

- Generate long-term value addition for shareholders together with steady profit growth
- Deliver to customers reliable power and utilities through operational excellence
- Conduct business with community, social, and environmental responsibility
- Seek innovation in power and utility efficiency management through energy storage technology.

**BUSINESS STRATEGY** 





Expand businesses and grow power generating capacities in Thailand and overseas through investments aligned with business strategies, risk and investment decision criteria under the

following investment schemes:

2) S2: SELECTIVE

**GROWTH** 

- Go along with PTT Group Seek investment opportunities in power plant projects alongside the investments of PTT Group both domestically and internationally. To be a part of enhancing the competitiveness of PTT Group by focusing on power plant projects that are value chains of the business.
- Domestic & International Seek investment opportunities for power projects domestically and internationally.
- Renewable Energy Develop renewable-power plant businesses, including large-scale renewable power plant business development in Thailand and overseas, as well as Solar Private Power Purchase Agreement Development.

3) S3: S-CURVE



Manage all assets with synergy and integration to strengthen the base and forge ahead with unity, agility and strength to cope with such transformation as well as short-term and long-term business growth plans. Under the Synergy Initiatives to significantly grow businessperformance outcomes, GPSC operates trough these three main components as follows:

- Asset Integration Generate additional co-value from integrated asset management
- Business Integration Work process integration plan.
- People Integration Human resources integration management.

Expansion of investment in innovation to create new business revenue. Operations in the development of new businesses that are New S-Curve through three new business development initratives as follows:

- Energy Storage Business Develop its business to become an energy storage system integrator (ESS)
- Battery Manufacturing Invest as a pioneer in prototype battery manufacturing in Thailand.
- Energy Management System Conduct studies, analyses and selection of compatible technologies with the New Energy Market to shape new business opportunities

## 2013



## 2014



## 2015



- Established as a merged company of PTT Utility Company Limited (PTTUT) and Independent Power (IPT) on January 10, 2013.
- Registered and renamed as global Power Synergy Public Company Limited (GPSC) on November 27, 2014.
- Listed in the Stock Exchange of Thailand (SET). The first Day Trade was on May 18, 2015.

## 2016



## 2017



## 2018



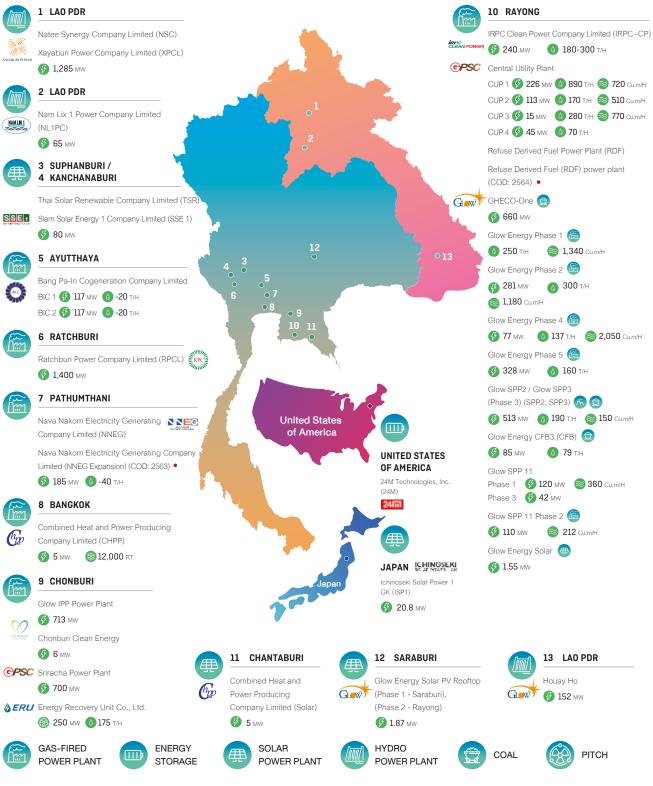
- Listed in SET 50 and Asia Pacific ex Japan Small Cap.
- Listed in ESG 100 (Excellent Environmental, Social and Governance Management).
- Achieved excellent level for CGR Scoring.
- Won the Best CEO Award from Investment Analysts Association (IAA).
- Selected as Thailand Sustainability Investment by SET.
- Ranked BBB- rating by Standard & Poor's and A+ (tha) by Fitch Ratings.
- Received the Best CEO (Investor Relations), Best IR Company (Thailand) and Environmental Responsibility Award from Corporate Governance Asia.
- Received Top Innovation Organization Award 2018 from the National Innovation Agency (Public Organization).
- Won a Asia's Best CEO and Best Investor Relations Company Award from Corporate Governance Asia.
- Won the CFO of the Year Excellence in Technology and Excellence in Treasury Management Transformation Awards from CFO Innovation Magazine.
- Establishing Global Renewable Power Co., Ltd. for expansion of investment in renewable energy power plants.

## 2019



- Invested in the Energy Recovery Unit (ERU) by purchasing the ERU power generation unit, which is part of the Clean Fuel Project (CFP) of Thai Oil Public Company Limited.
- Made a tender offer for all outstanding of GLOW, ending on December 2, 2019, and successfully delisted the securities from the Stock Exchange of Thailand (SET) on December 13, 2019. As of December 31, 2019, GPSC therefore held a total of 1,460,360,024 shares acquired from GLOW, or 99.83 percent of the total issued and add shares.
- Received The Asset Platinum Award for Excellence in ESG and The Asset Best Initiative in Innovation from the Energy Storage System Solution by the assessment of the Asset ESG Awards 2019.
- Received the Rising Star Sustainability Awards and the Thailand Sustainability Investment (THSI) for the year 2019 from the Stock Exchange of Thailand.

## **BUSINESS OVERVIEW**



Under Construction

GPSC and its invested companies are located in Thailand and abroad, selling power and steam to several industrial customers and government agencies. The company's customers include Electricity Generating Authority of Thailand (EGAT), Provincial Electricity Authority (PEA), Metropolitan Electricity Authority (MEA), ELECTRICITE DU LAOS (EDL), and Tohoku Electric Power Co., Inc..

## **VALUE CREATION THROUGH** THE BUSINESS MODEL

## **INPUT**



#### **FINANCIAL CAPITAL**



#### **HUMAN CAPITAL**

- Employees' development



#### **MANUFACTURED CAPITAL**

- THB 101,272 MM



#### **SOCIAL AND RELATIONSHIP** CAPITAL

- Stakeholders engagement



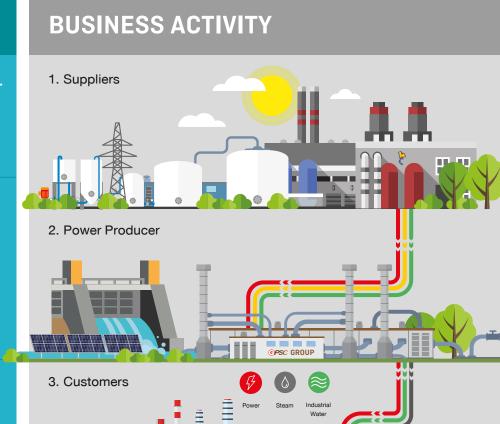
#### **INTELLECTUAL** CAPITAL

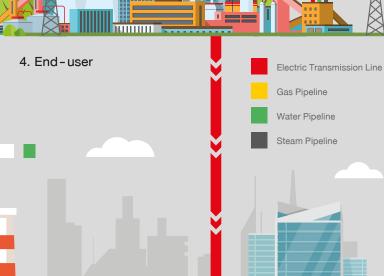
- Research and Development THB 168.37 MM



#### **NATURE CAPITAL**

- Water usage 8.54 Mm³
  Natural resources





## **STAKEHOLDERS** Shareholder Investor **Employees** Government Agency & Related Organization **CAPITAL** Suppliers **Partners** Customers Community & Society **OUTPUT** Total Equity Capacity:



# OUTCOME **FOR GPSC** FOR STAKEHOLDERS THB 16,783 MM FINANCIAL **CAPITAL**



**CAPITAL** 



- **SOCIAL AND RELATIONSHIP CAPITAL**



- INTELLECTUAL **CAPITAL**

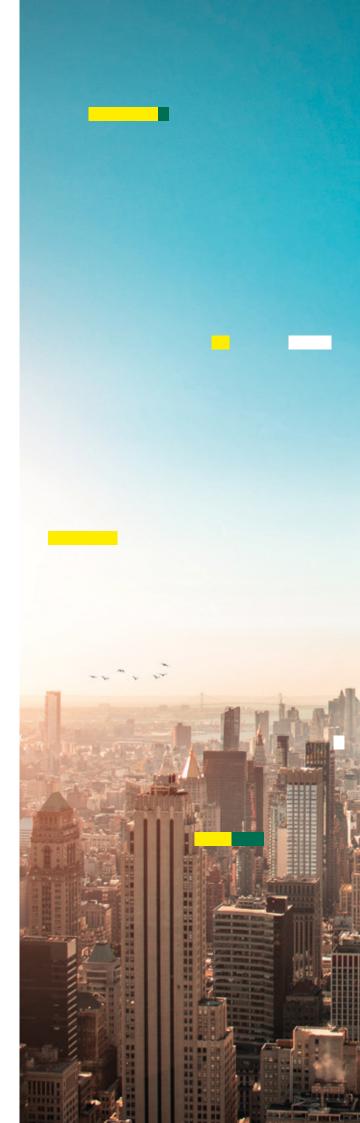


- **CAPITAL**

## STAKEHOLDER ENGAGEMENT

Well aware of the importance of stakeholder engagement, GPSC believes that a good relationship with shareholders built upon trust and shareholders' valuable feedback is a crucial factor in driving the company's sustainable growth. Stakeholder management has enabled the company to effectively tailor itself to shareholders' needs, which helps lower the risks of interruption to the company's image and business while simultaneously cultivating maximum benefits for all groups of shareholders. GPSC has always communicated with its shareholders to create understanding on diverse issues and to seek feedback for better decision making and business operation planning.

In 2019, the company and GLOW Energy PCL, as the GPSC Group of companies, conducted a stakeholder analysis and review to identify and classify main stakeholders to cover those in the business chain more inclusively and to seek even more effective ways to meet shareholders' expectations for better management of the stakeholder engagement plan. The company's eight main stakeholders are 1) Shareholders, 2) Investors, 3) Government agencies and related organizations, 4) Employees, 5) Suppliers and contractors, 6) Business partners, 7) Customers, and 8) Community and Society. The communication and engagement methods vary across types of stakeholders, as follows:



#### STAKEHOLDER GROUP ENGAGEMENT CHANNELS



1. Shareholders
(Major and
minor shareholders)

- · Annual General Meeting
- Various communication channels via website, e-mail, phone calls and letter, etc.
- · An annual company on-site visit
- Visits to companies related to the company's business, both domestically and abroad
- Interviews with representatives of shareholders
- · Shareholder relations activities
- Equal opportunity for all shareholders to join Annual General Meeting with equal votes and questioning opportunities

## ISSUES THAT STAKEHOLDERS OUR RESPONSES ARE INTERESTED IN

- Good performance and dividends
- · Constant business growth
- Transparency and Corporate Governance
- · Risk management
- Joint ventures and innovation development for enhanced operation efficiency
- Investment in renewable energy

GOVERNANCE, RISK MANAGEMENT AND COMPLIANCE (GRC)

EVOLVING
THE BUSINESS MODEL

MAINTAINING AVAILABILITY AND RELIABILITY



2. Investors (Banks, Financial Institutions / Debenture Holders / Credit Rating agencies / Analysts)

- Annual General Meeting
- Quarterly Analyst Meetings
- Roadshows and Investor Relations Activities
- An annual company on-site visit
- Shareholder relations activities
- Other communication channels via website, e-mail, phone calls and letter, etc.
- Interviews with representatives of investors

- Good performance and dividends
- · Constant business growth
- Transparency and corporate governance
- Business operation with Environment, Social and Governance (ESG)
- Joint ventures and innovation development for enhanced operation efficiency
- Data disclosure of company's operating performance, finance, and business operation with Environment, Social and Governance (ESG)

GOVERNANCE, RISK MANAGEMENT AND COMPLIANCE (GRC)

EVOLVING THE BUSINESS MODEL

MAINTAINING AVAILABILITY AND RELIABILITY

COMMUNICATION AND CREDIBILITY



#### 3. Government Agencies and Related Organizations

(Government agencies, State enterprises, Local administration organizations, along with private companies with authority to approve licenses or permits for the company)

- Performance reports and operation results of related government agencies, on a regular basis
- Ongoing participation in government projects and activities
- Participation with government agencies in teamwork on requested issues
- PTT Group's government affairs
   comingre
- Interviews with representatives of government agencies and related organizations
- Acting as a study site for the government sector

- Acting in compliance with rules, regulations, and policies of relevant regulators.
- Expansion to renewable energies
- Social and environmental responsibility
- Living sustainably with communities in a shared economy
- Safety and environment management system
- Collaboration with government agencies on various projects
- Company's performance in reducing climate change impacts

GOVERNANCE, RISK MANAGEMENT AND COMPLIANCE (GRC)

ENVIRONMENTAL MANAGEMENT

CLEAN ENERGY FUTURE AND CLIMATE RESILIENCE

#### STAKEHOLDER GROUP ENGAGEMENT CHANNELS

## ISSUES THAT STAKEHOLDERS OUR RESPONSES ARE INTERESTED IN



4. Employees (Executives / Employees)

- An annual Employee Engagement Survey
- Complaints via different complaint channels
- Town Hall Meetings for executives to interact with employees
- Internal Communication
- Communication via e-mail
- Interviews with representatives of employees
- · Internal welfare committee
- Employee potential development to correspond with the company's strategies and directions
- Employee well-being and occupational health and safety
- Good remuneration and welfare
- Career opportunity and progress
- · Fair performance assessment

WORKFORCE DEVELOPMENT AND WELL-BEING

OCCUPATIONAL HEALTH AND SAFETY



Suppliers and Contractors

- Annual Supplier Relationship Management Seminar
- Interviews with representatives of suppliers and contractors
- Annual supplier satisfaction survey
- Complaint channels for suppliers and contractors
- Non-discriminatory competition
- Collaboration for mutual sustainable growth
- Efficient, transparent and accountable procurement system
- Supplier and contractor audits for mutual sustainable growth

GOVERNANCE, RISK MANAGEMENT AND COMPLIANCE (GRC)

SUPPLY CHAIN MANAGEMENT



6. Partners

- Communication channels via website, e-mail, phone calls and letter, etc.
- Interviews with representatives of partners
- Business meetings
- Memoranda of Understanding
- Value Chain, and creation of trust, relationship and collaboration for potential long-term business development
- Boosting competitiveness and mutual added values

VALUE CREATION THROUGH THE BUSINESS MODEL

#### STAKEHOLDER GROUP ENGAGEMENT CHANNELS



7. Customers
(Long-term and short-term customers)

- Annual customer satisfaction survey for operation improvement
- Annual, quarterly, monthly customer relations activities
- Monthly meeting to monitor and report on demand plan, preparation and maintenance plan, and follow-up on problem solving
- Customer complaint channels
- Telemetry (Online Metering)
- Interview with customer representatives

## ISSUES THAT STAKEHOLDERS OUR RESPONSES ARE INTERESTED IN

- Quality product and service delivery at fair prices
- Production and Distribution system reliability
- Power distribution availability
- Prompt response to customer needs
- Non-discriminatory treatment of all groups of customers under relevant laws and compliance
- Convenient customer communication channels
- Technology development for environmental impact reduction
- Seeking new business ventures
- Price setting in compliance with Energy Regulatory Commission (ERC) and executives' approval.

CUSTOMER RELATIONSHIP

**MANAGEMENT** 

MAINTAINING AVAILABILITY AND RELIABILITY



## 8. Community and Society

(Communities surrounding new project sites / power plants)

- An annual community satisfaction survey
- Regular community relations activities/visits to communities and people directly and indirectly affected
- Power plant visits by local communities
- Public hearings to solicit people's opinions on Environmental Impact assessment (EIA) report and Code of Practice (CoP)
- Quarterly "Kiang Bah Kiang Lai" (Side by Side) activities for public participation
- · Other communication channels
- Interview with representatives of community and society groups

- Social and environmental impacts reduction management
- Business operation with care for safety and environment
- Creating local people's understanding of the company's operation.
- Job creation, income generation and expense reduction for communities
- Supporting or participating in community activities
- · Local employment
- Utilizing the company's skills and knowledge for community development.

## SUSTAINABLE COMMUNITY

# STAKEHOLDER'S VOICE

#### **GOVERNMENT AGENCIES AND RELATED ORGANIZATIONS**



# Mr. Komkrit Tantravanich Secretary-General Office of the Energy Regulatory Commission

01

"GPSC is an organization committed to the environment, society and good governance under the concept of sustainable development. For the sustainable growth of the company, together with community and society, it is important that the company strives to go beyond the standards prescribed by laws. In addition, in order to build trust, which influences the company's image, it needs to place emphasis on treating all customers equally."

# Mr. Prateep Aengchuan Assistant to Governor (Map Ta Phut) Industrial Estate Authority of Thailand (I-EA-T)

02

"The company's corporate governance and executive team, which adheres to good governance and information transparency, has built up trust among shareholders. As a utility supplier for business operators in industrial estates, GPSC has contributed to economic development at the provincial and national levels. Our projects on environmental sustainability, including the White/Green Star Flag Awards, could not be successful without the collaboration of GPSC and operators in the industrial estates."



#### **CUSTOMERS AND SUPPLIERS**



#### Mr. Prasertsak Cherngchawano

Deputy Governor, Policy and Planning Electricity Generating Authority of Thailand (EGAT) 03

"Corporate Governance, one of the company's priorities, is like the top button of a shirt. If the top one is fastened incorrectly, the others will not be in the right place. Principles on corporate governance should be implemented in the same direction, covering all of the company's value chains from upstream to downstream. In this disruptive technology era and the power plants moving towards greener energy, EGAT and other power providers need to adapt and collaborate for sustainability of the entire power system."

#### **CUSTOMERS**

#### Mr. Mongkol Hengrojanasophon

Vice President - Olefins Business and Operations SCG Chemicals Company Limited

04

"GPSC is a utility company with a key role in supporting the security of Thailand's energy. The integration of GPSC and GLOW is a significant step of energy security enhancement which benefits Thailand's industrial and finance sector in the future. We hope that GPSC will be able to offer new products and

one stop service to increase value in its value chain. The relationship between SCG and GPSC on their collaboration on value chains has gone beyond buyer and seller, moving towards sustainable businesses that offer benefits for all, including communities and environment."



#### **PARTNERS**



## Mr. Walter Heo Leader of Energy Solution Division

Hyundai Electric & Energy Systems Company Limited

"GPSC is Thailand's leading power company that has been conducting its business with consideration of three dimensions of sustainability. These three dimensions act as a business foundation for GPSC to create value to the society, especially in the selection

of clean fuel for power generation. Moreover, GPSC has been expanding its environmentally-friendly business to other countries, while building alliance networks with organizations throughout the world. This benefits GPSC in term of continuous growth and achievements."

#### **SUPPLIERS**



#### Mr. Nath Sarapa

Power Services Account Manager Thailand and Myanmar GE Gas Power

06

"The company treats customers and suppliers very well. Moreover, its operation has helped push forward the economy in the area, creating jobs, occupations and businesses, thereby adding to the national GDP, and green innovations. Collaborations between GE and GPSC will hopefully materialize in the future, among them the Smart Grid, a project to provide power to communities at cheap prices.

#### **COMMUNITY AND SOCIETY**

#### Mr. Sumeth Kontha

Chairman of Kon Rak Pah Club, Chark Look Ya-Khao Huai Mahad (Secretary to Mayor) Map Ta Phut Municipality 07

"GPSC's operation in the area has upgraded the economy, education and health of those who live in the communities. Also, thanks to the power development fund, public utilities in this area have been developed. Consistent financial support and Corporate Social

Responsibility (CSR) projects to solve community's problems are very important and reflect the company's care for the better quality of life of people in the area. This has resulted in acceptance and harmonious, sustainable living."





#### Mr. Chamnong Choithongmoon

Chak Klang Community Leader

08

"So far, the relationships between people in the community and the company have been going quite well, thanks to such CSR projects as activities promoting local culture and community enterprises. One suggestion is that CSR projects and activities provided by the company and PTT Group should be provided to and be beneficial at the community level as a priority for mutual sustainable existence as good neighbors."

## MATERIALITY ASSESSMENT

GPSC examines issues that matter most to its business operation in terms of sustainability for internal and external organization. These issues are assessed and prioritized under the materiality assessment framework of the Global Reporting Initiative (GRI) Standards while at the same time addressing all stakeholders' expectations and global sustainability trends. The company's operation strategies, along with current and potential risk and opportunity factors, are also taken into consideration as assessment guidelines.



#### **STEP 1: IDENTIFICATION**

#### **PROCESS**

Identification of relevant issues that have impacts on • sustainability of GPSC and its stakeholders throughout the value chain across economic, social and environmental • dimensions. Issues taken into considering include all stakeholder expectations, global changing trends, the company's operation strategies, risk and challenge • factors, GRI Standards, global business. Trends of global business and in the same industry group, including collection of various issues into a group of issues (Aspects) which • leads to the management of the company Appropriate for • all stakeholders.

#### **PRACTICE GUIDELINES**

- PTT Group's and GPSC's Sustainable Development Guidelines
- Sustainable Development Goals: SDGs













- International Practice Guidelines, including GRI<sup>1</sup>, DJSI<sup>2</sup>, SDGs<sup>3</sup>, WBCSD<sup>4</sup>, CDP<sup>5</sup>, ISO 26000<sup>6</sup>, UNGC<sup>7</sup>, IIRC<sup>8</sup> and others
- All internal and external stakeholders' voices
- Community Satisfaction Survey
- Community Satisfaction Survey
- Corporate image management process
- Complaint channels
- Corporate Risk Assessment
- Workshops with company's executives.

#### OVERALL ASPECTS AFFECTING THE SUSTAINABILITY OF THE COMPANY AND STAKEHOLDERS



Energy Mix



Emission Reduction



Contribution to Decarbonization



Innovation



Decentralized



Disruptive Technology



Energy Policy & Regulation



Customer's Ability to Control and Make a Choice



Customer Data and Information Privacy



Natural Disasters



Efficiency of Operations



Workforce Planning



External Transparency to Build Credibility



Communication



Current Employees



**Equal Opportunity** 



Labour Rights



Board of Directors



Code of Conduct



Risk Management



Personal Safety and Health



Waste



Community Relationship



Community Involvement and Development Project to Improve Livelihood



Manage Supply Risks



Leverage Opportunity with Suppliers and Contractors



Supplier Rights

#### **STEP 2: PRIORITIZATION**

#### **PROCESS**

Assessing the levels of importance of material aspects to determine what should be reported by taking into account the impacts on GPSC and the impacts on stakeholders. • The assessment of each aspect and topic is determined by risk and opportunity assessment and factors affecting the company and stakeholders, along with stakeholders' voices. Each aspect is classified into three levels of importance; high, medium and low. This report covers and focuses only on the aspects with high and medium material levels.

#### PRACTICE GUIDELINES

- Workshops with representatives from all agencies that are directly relevant to each stakeholder group.
- · Interviewing external stakeholders









1 IDENTIFY STAKEHOLDER GROUPS FOR ENGAGEMENT

Identify and prioritize stakeholder group and methodology for engagement 2

DEVELOP INTERVIEW QUESTIONS

Prepare specific questions for to external stakeholder for engagement 3 EXTERNAL STAKEHOLDER INTERVIEW

Conduct the interview sessions

4 ANALYZE THE RESULT FROM EXTERNAL ENGAGEMENT

Analyze the result from the interview sessions and present the draft material topic

#### **STEP 3: VALIDATION**

#### **PROCESS**

Reporting the summary of materiality assessment and identified topics that are in alignment with the GRI Aspects, to be analyzed by responsible parties to ensure a more comprehensive assessment. In addition, the summary of material aspects in GPSC Sustainability Report will be reviewed, validated and approved by GPSC's Management Committee.

#### **PRACTICE GUIDELINES**

- Materiality assessment analyzed by external shareholders prior to being reviewed by each department.
- Interview with representatives from all stakeholder eight groups.
- Materiality assessment reviewed by the company's executives.

#### **STEP 4: REVIEW**

#### **PROCESS**

Regular reviews of the sustainability report to make sure that the identification of material aspects truly reflects stakeholders' interests and expectations, and that stakeholder engagement practices are improved via complaints and comments channels, both internal and external, for a better representation of stakeholder interests. Stakeholder engagement channels include participating in sustainability award assessment organized by the Securities and Exchange Commission, Thailand (SEC) and Thaipat Institute.

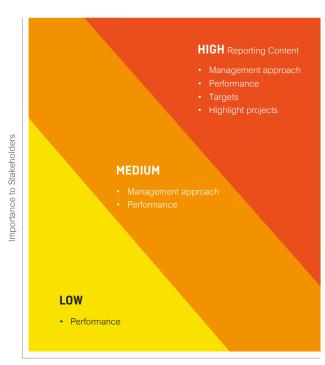
#### **PRACTICE GUIDELINES**

- The sustainability report reviewed by external agencies.
- Complaints and Comments Channels.
- Sub-group meetings of sustainability agencies to review the sustainability report

#### Remark

- Global Reporting Initiative (GRI) is the organization that initiates the international report which is used as a prototype of preparing a report of sustainable development.
- Dow Jones Sustainability Indices (DJSI) is a family of capital indices that assesses the effectiveness of business operations according to the guideline of sustainable development of the world's leading companies which the worldwide funds use it as the investment criteria.
- Sustainable Development Goals (SDGs) is a set of sustainable development goals under the United Nations (UN), comprising 17 main objectives to be achieved and implemented by 2030.
- World Business Council for Sustainable Development (WBCSD) is the committee of business persons operating business for the world's environment. This committee comprises business persons from the groups of more than 120 international leading companies that are officially accredited in the "Earth Summit" in 1992.
- <sup>5</sup> Carbon Disclosure Project (CDP) is the global institution highly recognized by its environmental management.
- ISO 26000 is an international standard for social responsibility.
- UN Global Compact (UNGC) is a United Nations initiative that incorporates into business policies and strategies so companies can uphold to the accepted international standards in the area of human rights, labor, environment and anti-corruption.
- Integrated Reporting (IIRC) is integrated report is a concise communication about how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term.

#### **MATERIALITY MATRIX 2019**



Significance to Company

## Clean Energy Future Climate Resilience Maintaining Available and Reliability

**HIGH PRIORITY** 

- Corporate Governance
   Risk Management and
   Compliance (GRC)
- Evolving the Business Model
- Markforga Day
  - Workforce Developme and Well-Being
- Environmental Management
- Occupational Health and Safety (OHS)
- Sustainable Community

#### **MEDIUM PRIORITY**

- Customer Relationship
   Management
- Engaging Policy Maker
- Communication and Credibility

#### **LOW PRIORITY**

- Supply Chain Management
- Biodiversity



NURTURING SUSTAINABLE ENERGY SECURITY

WITH DUE RESPECT TO SOCIAL, ECONOMIC, AND ENVIRONMENTAL EQUILIBRIUM



## **MATERIALITY SUSTAINABILITY ISSUES IN 2019**



#### CORPORATE GOVERNANCE, RISK MANAGEMENT AND COMPLIANCE

#### SCOPE OF ESG RISKS AND **OPPORTUNITIES**

- · Corporate Governance
- Risk Management
- Business Ethics and Anti-Corruption
- · Human Rights

#### Capital Value

#### **GLOBAL REPORT INITIATIVE: GRI**

- Management Approach (103-1, 103-2, 103-3)
- Organization Profile (102-11)
- Strategy (102-15)
- Governance (102-18, 102-19, 102-20, 102-22, 102-24, 102-27, 102-28, 102-29, 102-30)
- Diversity and Equal Opportunity (405-1)
- Ethics and Integrity (102-16, 102-17, 102-25)
- Economic Performance (201-4)
- Anti Corruption (205-2, 205-3)
- Anti-Competitive Behavior (206-1)
- Public Policy (415-1)
- Non Discrimination (406-1)
- Rights of Indigenous Peoples (411-1)
- Human Rights Assessment (412-1, 412-2)

#### **KEY STAKEHOLDER AND IMPACT BOUNDARY**





























#### **CUSTOMER RELATIONSHIP MANAGEMENT**

#### SCOPE OF ESG RISKS AND **OPPORTUNITIES**

- · Customer Satisfaction
- · Customer Relationship Management
- · Customer Data Privacy Protection

#### Capital Value

Social and Relationship

#### **GLOBAL REPORT INITIATIVE: GRI**

- Management Approach (103-1, 103-2, 103-3)
- Stakeholder Engagement (102-43, 102-44)

#### **KEY STAKEHOLDER AND IMPACT BOUNDARY**







SUSTAINABLE **DEVELOPMENT GOALS: SDGs** 





#### MAINTAINING AVAILABILITY AND RELIABILITY

#### **SCOPE OF ESG RISKS AND OPPORTUNITIES**

- · Operational Excellence Management System (OEMS)
- · Total Productive Maintenance (TPM)
- · Productivity Improvement

#### Capital Value

Financial, Manufactured

#### **GLOBAL REPORT INITIATIVE: GRI**

- Management Approach (103-1, 103-2, 103-3)
- System Efficiency (EU-1, EU-2, EU-11)
- Demand Side Management (EU-10)
- Availability and Reliability (EU-28, EU-29, EU-30)

#### **KEY STAKEHOLDER AND IMPACT BOUNDARY**





























agency & related

organization

Employees



Suppliers







Customers

Community & Society



Creditor

Partners

#### **SUPPLY CHAIN MANAGEMENT**

#### SCOPE OF ESG RISKS AND **OPPORTUNITIES**

- Supplier Sustainable Management
- Supplier Relationship Management
- Spending Analysis

#### Capital Value

Social and Relationship

#### **GLOBAL REPORT INITIATIVE: GRI**

- Management Approach (103-1, 103-2, 103-3)
- Organization Profile (102-9)
- Supplier Environmental Assessment (308-1, 308-2)
- Freedom of Association and Collective Bargaining (407-1)
- Child Labor (408-1)
- Forced or Compulsory Labor (409-1)
- Supplier Social Assessment (414-1, 414-2)
- Health and Safety for Contractor and Subcontractor Employees (EU-17, EU-18)

#### **KEY STAKEHOLDER AND IMPACT BOUNDARY**











#### **EVOLVING THE BUSINESS MODEL**

#### **SCOPE OF ESG RISKS AND OPPORTUNITIES**

- Innovation Development
- Distributed Generation

#### Capital Value

Intellectual, Manufactured

#### **GLOBAL REPORT INITIATIVE: GRI**

• Management Approach (103-1, 103-2, 103-3)

#### **KEY STAKEHOLDER AND IMPACT BOUNDARY**

















SUSTAINABLE **DEVELOPMENT GOALS: SDGs** 





#### **ENGAGING POLICY MAKER**

#### SCOPE OF ESG RISKS AND **OPPORTUNITIES**

- Supporting Energy Policy
- Responding to Government Measures

#### Capital Value

Social and Relationship

#### **GLOBAL REPORT INITIATIVE: GRI**

- Management Approach (103-1, 103-2, 103-3)
- Public Policy (415-1)

#### KEY STAKEHOLDER AND IMPACT BOUNDARY

















SUSTAINABLE **DEVELOPMENT GOALS: SDGs** 











#### **ENVIRONMENTAL MANAGEMENT**

#### SCOPE OF ESG RISKS AND **OPPORTUNITIES**

- · Air Quality
- Water Management
- · Waste Materials
- Ash Disposal Management

#### Capital Value

Natural

#### **GLOBAL REPORT INITIATIVE: GRI**

- Management Approach (103-1, 103-2, 103-3)
- Water (303-1, 303-2, 303-3)
- Emissions (305-7)
- Effluents and Waste (306-1, 306-2)
- Environmental Compliance (307-1)

#### **KEY STAKEHOLDER AND IMPACT BOUNDARY**























#### **CLEAN ENERGY FUTURE AND CLIMATE RESILIENCE**

#### **SCOPE OF ESG RISKS AND OPPORTUNITIES**

- A Clean Energy Future Climate Resilience
- Responding to Government Measures

#### Capital Value

Natural, Manufactured

#### **GLOBAL REPORT INITIATIVE: GRI**

- Management Approach (103-1, 103-2, 103-3)
- Economic Performance (201-2)
- Energy (302-1, 302-2, 302-3, 302-4)
- Emission (305-1, 305-2, 305-3, 305-4, 305-5)
- Water (303-2)

#### **KEY STAKEHOLDER AND IMPACT BOUNDARY**

























#### **OCCUPATIONAL HEALTH AND SAFETY**

#### **SCOPE OF ESG RISKS AND OPPORTUNITIES**

- · Occupational Health and Safety
- · Process Safety

#### Capital Value

Human

#### **GLOBAL REPORT INITIATIVE: GRI**

- Management Approach (103-1, 103-2, 103-3)
- Occupational Health and Safety (403-1, 403-2, EU-25)

#### **KEY STAKEHOLDER AND IMPACT BOUNDARY**



















SUSTAINABLE **DEVELOPMENT GOALS: SDGs** 





#### **WORKFORCE DEVELOPMENT AND WELL-BEING**

## SCOPE OF ESG RISKS AND OPPORTUNITIES

- · Workforce Planning
- · Capacity Development
- Diversity and Equal Opportunity
- Employee Well-Being

#### Capital Value

Human

#### **GLOBAL REPORT INITIATIVE: GRI**

- Management Approach (103-1, 103-2, 103-3)
- Organizational Profile (102-8)
- Market Presence (202-1)
- Employment (401-1, 401-2, 401-3, EU-15)
- Labor/Management Relations (402-1)
- Occupational Health and Safety (403-1)
- Training and Education (404-1, 404-2, 404-3)
- Diversity and Equal Opportunity (405-1)

## KEY STAKEHOLDER AND IMPACT BOUNDARY

















#### SUSTAINABLE DEVELOPMENT GOALS: SDGs









#### SUSTAINABLE COMMUNITY

## SCOPE OF ESG RISKS AND OPPORTUNITIES

- · Community Involvement
- Community Rights

#### Capital Value

Social and Relationship

#### **GLOBAL REPORT INITIATIVE: GRI**

- Management Approach (103-1, 103-2, 103-3)
- Economic Performance (201-1)
- Indirect Economic Impacts (203-1, 203-2)
- Local Communities (413-1, 413-2)
- Socioeconomic Compliance (419-1)

## KEY STAKEHOLDER AND IMPACT BOUNDARY





#### SUSTAINABLE DEVELOPMENT GOALS: SDGs





#### **COMMUNICATION & CREDIBILITY**

## SCOPE OF ESG RISKS AND OPPORTUNITIES

 Targets, management approaches, and performance of all companies in the Global Power Synergy Group in which GPSC holds more than 50% of the shares and for which it has operational control.\*

#### Capital Value

\_

#### **GLOBAL REPORT INITIATIVE: GRI**

GRI Standards

## KEY STAKEHOLDER AND IMPACT BOUNDARY

















## SUSTAINABLE DEVELOPMENT GOALS: SDGs

-

Remark: \* On 31 December 2019, GPSC has finished the acquisition of Glow Energy Public Company Limited or "GLOW". The company has completed the Delisting Tender Offer on 2 December 2019 and GLOW has been delisted from being listed on the Stock Exchange of Thailand on 13 December 2019. At present, the company has hold a total of 1,460,360,024 shares of GLOW or 99.83% of the total issued shares of GLOW resulting in the scope of reporting will be different from the previous year.

# EMBEDDING SUSTAINABLE DEVELOPMENT GOALS (SDGs)

GPSC has embraced six main goals of the UN's Sustainable Development Goals as guidelines for the company's sustainable development management and for the benefit of all stakeholders. These are: Goal 7: Affordable and Clean Energy; Goal 8: Decent Work and Economic Growth; Goal 9: Industry, Innovation, and Infrastructure; Goal 12: Responsible Consumption and Production; Goal 13: Climate Action; and Goal 16: Peace and Justice Strong Institutions.





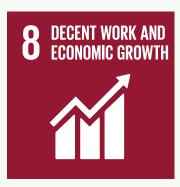
















14 LIFE Below Water













## SUSTAINABLE **DEVELOPMENT GOALS**

#### SDGs/ **TARGETS**

#### **ACTION PLANS**

- ON-GOING PROCESS
- AT PLANNING STAGE

#### **COMPANY'S BENEFITS**

#### **ENVIRONMENTAL** AND SOCIAL **BENEFITS**

#### **TARGETS**

#### 7: 7.1, 7.2, 7.3



- development in rural areas and developing countries for equal access, • Reduction in power • Reduction of by implementing solar energy projects in Chonburi, Mae Hong Son, Nan and • Reduction in energy Chiang Rai and the Solar Driers for coffee farmers in Nan province
- Expansion of Solar Farm and Solar Rooftop projects for commercial use
- Seeking opportunities in power production development and renewable energy development
- · Joining power conservation projects of relevant organizations

- generating cost
- use and expenses
- remote areas
- environmental change impacts
- Supporting to increase renewable energy use
- Promoting renewable energy
   Opportunities in new
   Supplying power in
   Promoting renewable energy development in rural areas and developing countries with at least three projects per year
  - pollution and climate . Increase in renewable energy power production ratio to 20% by 2024
  - governmental policy Reduction in power production cost within action plan 2020
    - Power plant efficiency improvement project by replacing the expired power plants with new plants by 2022

8: 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9



- Power supply and promotion of public utilities in industrial development zones in Thailand and other countries for economic growth by setting up a power plant in Myanmar for power network development and economic arowth
- Supplying public utility projects in the Eastern Economic Corridor (EEC) and the Eastern Economic Corridor of Innovation (EECi) for economic
- Domestic business expansion and development of PTT Group investment promotion projects
- Implementing energy efficiency projects and investing in energy generating technologies for economic security and employment promotion
- Adhering to labor laws and regulations that are against all forms of illegal employment, inlcuding the company's human rights policy
- Providing safe and healthy work environment with a safety culture policy for the company group, and safety assessment for contractors.

- Opportunities in new Supporting economic Increase in installed capacity businesses
- · Enhancing good corporate image
- Boosting work efficiency of employees
- Employee retention and reducing turnover rate
- growth in operation areas and at national
- Supporting and increasing local employment
- Increase in green zones and tourist attractions
- at 3,000 MW within 2024
- Setting up a power plant in Myanmar in 2020-2025, which will boost employment and economic growth, directly and indirectly
- Developing thermal energy and renewable projects in EEC and
  - · Business expansion and investment in PTT Group during 2021-2023
  - · Every plant adhering to safety culture policy and having the ability to monitor and select contractors who have outstanding safety operations

#### SDGs/ **TARGETS**

#### **ACTION PLANS**

- ON-GOING PROCESS
- AT PLANNING STAGE

#### **COMPANY'S BENEFITS**

#### **ENVIRONMENTAL** AND SOCIAL **BENEFITS**

#### **TARGETS**

#### 9: 9.2, 9.4, 9.5



- · Business expansion to developing · Opportunities in new · Supporting industrial · Improving public utility system in industrial countries
- Investing technologies to enhance Creating good production process efficiency to reduce environmental impacts
- Public utility improvement for schools, temples and hospitals
- Organizing projects for public use and Enhancing production the 2<sup>nd</sup> Youth Invention and Innovations contests with expansion of the contests to the national level
- Co-organizing "Smart City" Innovations Contests with Chulalongkorn University and Chiang Mai University
- · Co-operating with partners for research and development of battery energy storage system
- · Conducting research to add value to and reduce impacts of coal fly ash from power generation by turning it into ceramics

- businesses
- corporate image
- Gaining new technology and innovations
- efficiency
- expansion and economic growth
- · Better public utilities and employment for communities
- Supporting science and technology research and · Co-developing "Smart Energy" development
- the areas where the businesses are located and consistently providing assistance during national disasters
- Developing at least one business based on the innovations from award-winning projects
  - district cooling business in potential areas
  - · Construction of a 10-30 MWh energy storage battery pilot plant
  - · Employing at least 20 people per a power plant in the business expansion zones by 2023
  - Enhanced production efficiency and improvement of public utility

#### 12: 12.2, 12.5



- Collaboration with partners in . L e s s e n i n g . Supporting partners' . Minimizing resource use to developing sustainability policies and risk assessment on Environment, Society and Governance (ESG)
- Adhering to the company's energy conservation policies
- Practicing the 3R principle, implementing the water footprint project and consistently reducing water and energy use
- Improving reverse osmosis (RO) water and deionized water production system
- Elimination in producing waste
- Setting up the Zero Waste to Landfill
- Organizing the "Zero Waste Village" project to transform the waste into refuse-derived fuel (RDF) in four areas: Thapma Subdistrict Municipality, Namkhok Subdistrict Municipality, Mabkha Pattana Subdistrict Municipality, and Nongtapan Subdistrict Administration Organization

- environmental, social and governance risk in partners management
- Reduction in resource use, cost and expenses in • Educating and production and waste
- Reduction in energy use and expense
- · Enhancing resource efficiency and management
- Minimizing risks of complaints and legal non-compliance

- environmental, social and governance management
- conservation and sustainability
- supporting community's waste management
- comply with PTT Group's targets during 2019-2023
- · Zero waste in landfills
- · Promoting resource · Organizing projects and activities in communities, such as waste banks, waste donation for charity, basic waste-sorting and organic waste management in households. waste-sorting training in schools, waste-upcycling projects and green markets project
  - Reduction of 200,000 tonnes/ year of waste from coal plants
  - Reduction of 260,000 m<sup>3</sup>/year of wastewater
  - Reduction of 400,000 m<sup>3</sup>/year of raw water use

#### SDGs/ **ENVIRONMENTAL TARGETS ACTION PLANS COMPANY'S TARGETS BENEFITS** AND SOCIAL ON-GOING PROCESS **BENEFITS** AT PLANNING STAGE · Initiating waste recycling projects in communities, turning waste into soil fertilizer · Coal ash recycling project, using coal ash as an ingredient in making lightweight cement blocks for building construction Reuse of wastewater from production process for watering ash Improving production process with efficient use of resources · Water use reduction in operations process 13: 13.2 • Participate in the Low Emission Support • Efficient resource use • Greenhouse gas • The five-year target on Scheme (LESS)/Thailand Voluntary and management emission reduction greenhouse gas emission Emission Reduction Program (T-VER)/ • Reduction in cost and • Reduction in reduction, in compliance with environmental and PTT Group's targets Carbon footprint organization (CFO) expenses climate change . CO reduction from the Low projects Emission Support Scheme Setting up greenhouse gas emission impacts (LESS)/Thailand Voluntary reduction policies Thailand Voluntary Emission Reduction Emission Reduction Program Program (T-VER) Certifications for the (T-VER) improvement of water control equipment and system in high pressure boilers at CFB3 plant, the Refuse-Derived

16: 16.5, 16.6



• Raising awareness of transparency • Transparency in • Reduction in • An average score of 90% for reverse osmosis (RO) via staff orientation, and activities on . Lessening risks of "CG Day" and "QSHE & KM Day"

tower system

Fuel from community waste project in Rayong Province, and the energy saving project at Central Utility Plant 3 (CUP-3) with propeller fan in cooling

- Supporting the activities of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC) • Promotion of best
- Training in human rights and risk assessment for all staff
- Providing complaint channels
- Integrating human rights and
   Lessening human anti-corruption issues into business practices
- Improvement on ethics and good governance principles

- business operations
- corruption and all forms of illegal actions
- practices in business ethics and good governance
- rights violation risks within the organization
- corruption and illegal actions while supporting good

citizens of society

- the test of understanding on business ethics and good governance
- employees as good 100% report on transparency of conflicts of interests of the company's employees and executives
  - Maintaining the 5-Star certificate of Thailand's Private Sector Collective Action Coalition Against Corruption (CAC)
  - · Human rights violation risk assessment in all operation
  - At least 80% of employees participating in ethics and good governance assessment





# **CORPORATE GOVERNANCE, RISK MANAGEMENT AND COMPLIANCE (GRC)**



**LONG-TERM TARGETS** 



# **EXCELLENT**

Level for the Corporate Governance Report (CGR) of Thai Listed Companies



# **QUARTERLY**

Training Courses on **Business Ethics** 



Risk management, both corporate risks and functional risks, to be applied in

# **ALL OPERATION UNITS**

Across the Organization.



# REVISION OF CORPORATE GOVERNANCE AND BUSINESS CODES OF CONDUCT



### Dr. Kurujit Nakornthap

Independent Director / Chairman of the Corporate Governance Committee / Chairman of the Audit Committee

"GPSC's revised Corporate Governance and Business Codes of Conduct reflecting the commitment of its directors, executives and staff at all levels to work with good governance and professional discretion to move the organization forward for sustainable and continuous benefits."

Remark: \* CAC Thailand's Private Sector Collective Action Coalition Against Corruption.



### OBJECTIVE:

To upgrade the company's good governance policy to be in line with the company's context and the 2017 Corporate Governance Code for Listed Companies.



the company's good governance policy on par with international standards by having an excellent CGR score Including being a member of the CAC Action Coalition.\*



### BENEFITS TO STAKEHOLDERS:

Raise the level of corporate governance at the ASEAN level, with the Company receiving the Top 50 ASEAN CG Award.



### **BUSINESS DRIVERS**

Corporate Governance and Business Codes of Conduct encompass human rights, which is one of the company's guideline towards achieving integrated management. The company's proper risk management is a fundamental element to which the executives and staff must adhere for the company to grow sustainably.

For more details on Governance, Risk Management, Complaince Management, and Human Rights (strategies, approaches, and reports), please visit

http://www.gpscgroup.com/th/about/directors

http://www.gpscgroup.com/th/cg/risk-management

http://www.gpscgroup.com/th/cg/policy

https://www.gpscgroup.com/th/cg/manual

https://www.gpscgroup.com/th/sustainability/social/human-rights



### **PERFORMANCE**

### **GOVERNANCE**

The company's board set recruitment criteria by taking into consideration a variety of aspects, including skills, experience, gender, ability and special qualifications necessary for the corporate needs and culture. The composition of the Board

of Directors must include at least one or two independent non-executive directors who have experience in the power, public utilities and related businesses.

# Composition of the Board of Directors (persons)

As of December 31, 2019

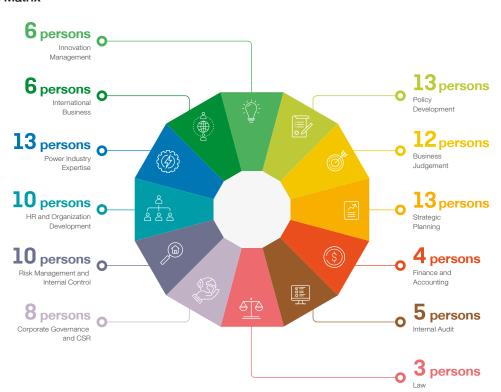




### GENDER



### **Board Skills Matrix**



	DIRECTORS  Independent Directors  Non-Executive Directors  Executive Directors		CORE SKILLS						SPECIFIC SKILLS			EXPERIENCE		
NAME - SURNAME			Business Judgement	Strategic Planning	Finance & Accounting	Internal Audit	Law	CG & CSR	Risk & IA	HR & OD	Power Industry Expertise*	International Business	Innovation Management	M - Management A - Academia** C - Consulting R - Research
1 Mr. Pailin Chuchottaworn	Independent Directors and Non-Executive Directors	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	М, А
2 Mr. Kurujit Nakornthap	Independent Directors and Non-Executive Directors	<b>~</b>	~	<b>~</b>		<b>~</b>	<b>~</b>	<b>~</b>	<b>~</b>	~	~	~		M, A
3 Mr. Payungsak Chartsutipol	Independent Directors and Non-Executive Directors	<b>~</b>	<b>~</b>	<b>~</b>	•	<b>~</b>	•	<b>~</b>	<b>~</b>	<b>~</b>	~		~	M, A
4 Maj.Gen. Chaowalek Chayansupap	Independent Directors and Non-Executive Directors	<b>~</b>	<b>~</b>	<b>~</b>		<b>~</b>		<b>~</b>		<b>~</b>	~			М, А
5 Mrs. Nicha Hiranburana Thuvatham	Independent Directors and Non-Executive Directors	<b>~</b>		<b>~</b>				<b>~</b>	~	<b>~</b>	~			M, A
6 Mr. Wittawat Svasti-Xuto	Non-Executive Directors	~	~	~					~	~	<b>~</b>	<b>~</b>	<b>V</b>	M, A
7 Mr. Wuttikorn Stithit	Non-Executive Directors	~	~	~	~		***************************************	***************************************	~	~	~			M, A
8 Ms. Peangpanor Boonklum	Non-Executive Directors	~	~	~		~	~	~			~	<b>~</b>		M, A, C
9 Mr. Wirat Uanarumit	Non-Executive Directors	~	~	~	~				~		~	<b>~</b>		M, A
10 Mr. Kongkrapan Intarajang	Non-Executive Directors	~	~	~	~			~	~	~	~	~	~	M, A
11 Mr. Bandhit Thamprajamchit	Non-Executive Directors	<b>~</b>	~	~	•			~	~	~	~		~	M, A
12 Mr. Boonchai Chunhawiksit	Non-Executive Directors	<b>~</b>	~	~	***************************************		***************************************				~			M, A
13 Mr. Chawalit Tippawanich	Executive Directors	~	~	~	•		***************************************	***************************************	~	<b>~</b>	~		~	M, A

Remark: \* Power Industry Expertise is in accordance with GICS Utilities Sector

## **Board in Figures**



GPSC Board is
ONE-TIER
SYSTEM



2019 Average board meeting attendance

93%



2019 Average tenure of board members in years

2 years



All 13 members of board

have relevant board industry experience (management, academia and consulting)

### **RISK MANAGEMENT**

The company has managed the Functional Risk Level to be consistent with the Corporate Risk Level and to correspond with its missions, visions and objectives, ensuring systematic operation across all dimensions.

<sup>\*\*</sup> Academia including a new director orientation program

#### **EMERGING DESCRIPTION POTENTIAL BUSINESS MITIGATING** RISKS **OF RISKS IMPACTS OF ACTIONS THE RISKS** Water Crisis Extreme climate · Shortage of water • Setting up a water management Management change with supply due to extreme committee to monitor, access, significant impacts. environmental and design a water management i.e. short-term plan in preparation for possible changes that have drought. impacts on production drought. Inadequacy of Improvement of production and delivery governmental process and efficiency of processes production units for optimum water resources management for water-use efficiency. agricultural and Close monitoring of water situation, in collaboration with industrial sectors the Eastern water management working team. Working in collaboration with suppliers to ensure adequate water reserves in time of crises. Customer and Enhanced energy use · Improving energy · Development of energy-use consumer behavior efficiency to reduce efficiency of efficiency management customer's energy customers Resulting approaches to be presented changes in energy use in customers to customers for enhanced costs. · Changes of consumer requesting to improve production cost effectiveness, energy consumption, the purchase of for example, solar power sale for example, to minimum steam / agreement management in alternative energies electricity products addition to conventional along with use of as specified in the energy use. contract (Minimum In search of investment energy storage system. Take or Pay: MTOP), opportunities in alternative which will result in energies, along with offering increased production energy storage technology cost management services to meet customers' changing demands and energy and reduced product sales. consumption patterns. The company's · Focusing on clean, energy-saving possibility of loss technologies, along with of competitiveness becoming a leading digital unless something energy service provider to boost is done to improve efficiency, resilience, reliability operation and and environmental friendliness of

services to meet

demands.

customers' changing

power system.

	EMERGING RISKS	DESCRIPTION OF RISKS	POTENTIAL BUSINESS IMPACTS OF THE RISKS	MITIGATING ACTIONS
(A)	Digital Transition/ Disruption	With rapid technology transformation like Blockchain and IoT, businesses need to adapt to stay competitive and to develop innovations for future growth.	Reduced competitiveness if the company is unable to adapt to technological changes.	Improvement of personnel's professional and technology management skills and potential, getting ready for digital transformation.
	Cyberthreats	Cyberthreats caused by IT dependency on information management and online operations.	<ul> <li>The company's confidential information leaks</li> <li>IT comes to a halt, affecting production and distribution systems, and thereby the company's reliability.</li> </ul>	<ul> <li>Improvement of IT Infrastructure &amp; System for security and reliability and ensure smooth operation.</li> <li>Control of access to IT to prevent incursions from both inside and outside the company.</li> <li>Design a management plan to deal with cyberthreats.</li> </ul>

### BUSINESS ETHICS AND ANTI-CORRUPTION

The company's Corporate Governance and Business Codes of Conduct encompass 19 key subjects. One of the key subjects is political neutrality, which means the company will not take any direct or indirect actions that will result in political bias. In 2019 no actions were taken in support of any political parties.

### **HUMAN RIGHTS**

The company has improved its policy on human rights and conducted training to raise awareness on human rights among its staff and affiliate companies. Human rights risk and impact assessment was also carried out across all operation units and areas. The result is that no human rights risk nor violation, caused by the company or partly caused by the company, was found.

KEY PERFORMANCE		PERFOR	TARGETS			
INDICATORS	2016	2017	2018	2019	2019	2020
"Excellent" Level for the Corporate Governance Report (CGR) of Thai Listed Companies (%)	91	95	96	96	96	97
Training on Business Ethics	At least once a year	At least once a year	At least once a year	4 times	At least once a year	At least once a year
Functional Risk Management (monitoring and revision of all functional risks) (%)	100	100	100	100	100	100



PURSUING SUSTAINABLE INNOVATION

TO DRIVE IMPROVEMENT INITIATIVES



# **CUSTOMER RELATIONSHIP MANAGEMENT**



**LONG-TERM TARGETS** 



**OVER 85%** 

**Customer Satisfaction** 



**ENGAGE 4** 

**Long-term Trade Contracts** and/or Agreements with Private **Industrial Companies** 

per Year



**Maintaining Customer** Relationship Level (which measure by maintaining ratio's number of customer satisfied) at

# **MORE THAN 90%**

of the Total Number of Customers Surveyed for Satisfaction



### PRODUCT DELIVERY TO CUSTOMER



### Mr. Toshiaki Kaneko

Director

Iharanikkei Chemical (Thailand) Company Limited (INC)

"GPSC has been efficient in delivering steam on time. The company's reliability, high production capacityy and reasonable prices, have reduced INC's investment in a steam generating system and have allowed the company to manage greenhouse gas emissions in the area effectively."



## OBJECTIVE:

Customers receive steam delivery on time. The company's stability, its high production capacity and reasonable prices, have reduced INC's burden in investing in a steam generating system.



A contract worth about THB 200 million.



# **BENEFITS TO STAKEHOLDERS:**

Saving on the construction of a steam generating system valued at approximately THB 40 million.

#### Pavarate Rattanasuwan

Vice President, Business Development

"The company has encouraged customers to be more aware of the value of renewable energies, Under the company's sustainability strategy, we have proposed a solar rooftop project to our customers to install a solar system on their factory roofs. The electricity from solar system is sold in combination with traditional power distribution and has been well received by customers."

Investment in the Solar Rooftop Project and a Private Power Purchase Agreement (PPA) with one customer.

# OBJECTIVE:

Co-investment in Solar rooftop project, in combination with supplying traditional power.

# BENEFITS TO COMPANY:

THB 60 million Baht revenue for the entire contract agreement.

# **BENEFITS TO STAKEHOLDERS:**

856.8 kWp solar energy, thereby saving THB 18 million Baht on the entire contract agreement, compared to traditional power consumption.





### **BUSINESS DRIVERS**

Customer relationship management should be able to respond to the needs of customers in various businesses, thus serving business growth in this rapidly changing world. A focus on product development and reliability in production and distribution systems to meet demand can build trust among customers. This is the foundation of the company's income.

For more details on customer relation management (strategies, approaches and reports), please visit http://www.gpscgroup.com/th/sustainability/ economic/customer-relationship-management



# **PERFORMANCE**

FULFILLING CUSTOMER NEEDS TO ENSURE TRUST IN RELIABILITY ON PRODUCTION AND DISTRIBUTION SYSTEMS, PRODUCT QUALITY, TECHNICAL SERVICES AND MAINTENANCE.

- Contacting customer relations staff.
- Monthly meetings to receive reports of products and maintenance plan.
- Listening to customer's feedback.
- Distributing and providing services to all customers in industrial sector.
- Customer satisfaction survey, at least annually.

### MAINTAINING AND BUILDING CUSTOMER RELATIONS.

- · Annual customer relations management activities, monthly meetings to receive reports on products and maintenance.
- Visiting customer sites.
- Holding annual "Improve Efficiency" seminars.
- Recreational activities and sports.
- Holding seminars and visits to energy plants.

### **CUSTOMER SATISFACTION**

The company has focused on customer relations services through various communication channels. In addition, both qualitative and quantitative customer satisfaction surveys are regularly carried out and the results are analyzed for further improvement.

46

### Issues Related to Complaints and Management Approaches:



Services and Maintenance



Sales and Technical Services



Products and Delivery

Unclear on power supply plan and compensation policy during unplanned shutdown.

 The company examines production and distribution systems, analyzes problems and identifies preventive solutions before informing customers.
 In addition, clear operational approaches for urgent maintenance management and clear proactive compensation policies for customers are laid out. Late responses to information queries and problem solving, which affect customer's decisions.

 Efficiency in responses has been enhanced by "Update Status" Program with constant updates. Non-matching measurements of steam consumption with customer's measurement.

 Finding out causes of non-matching measurements is urgently needed and customers need to be informed about results of verification by third party.



The 2019 customer executives seminar was held to build understanding about the global direction of renewable energy businesses. Seminar participants had a chance to visit the company's headquarters, the Solar Rooftop Project and Huawei Fusion Solar Smart PV Cloud Centralized Monitoring and Management Center in Shenzhen, Guangdong, China.



### **CUSTOMER DATA PRIVACY PROTECTION**

GPSC has a strong responsibility for customer data privacy. Customer Data Privacy Protection is one of the purchase agreements, along with the asset management plan, confidential information protection and use of company data. In terms of personal data of executives and staff of customers, the company has abided by the Personal Data Protection Act B.E. 2019, and plans to announce relevant policies by the first quarter of 2020.

No complaints about customer data privacy protection were received over the past year.

KEY PERFORMANCE INDICATORS		PERFO	RMANCE		TARGETS		
	2016	2017	2018	2019	2019	2020	
Customer Satisfaction (%)	87.40	86.80	86.60	86.30	>85.00	>85.00	
Number of long-term trade contract (s) and/or agreement (s) with private industrial companies	-	1	9	9	4	6	
Customer Relationship Level (%)*	90.4	85.7	85.7	90.9	≥90	≥90	

# MAINTAINING AVAILABILITY AND RELIABILITY



### **LONG-TERM TARGETS**



Plant Availability

100%



Unplanned Shutdown



Times



Revenue Loss from Unplanned Shutdown



THB



# SYNERGY PROJECT OF GPSC AND GLOW





The leading power flagship company of PTT Group with innovations in energy storage system, aiming to strengthen the reliability of power production and process which can promptly cater to the needs of customers.



GLOW has strong networks in Map Ta Phut Industrial Estate with a power system that is flexible and reliable.

# OBJECTIVE:

The synergy of GPSC and GLOW has raised their potential in operations, distribution and energy consumption. The Power and Steam Integration was planned to boost reliability and availability, working towards becoming an internationally recognized innovative and sustainable power generating company while building energy stability for the country.







Utilization of Machines of Both Companies

for optimum production efficiency.



Saving on Investment

Reduction of new power plant investment up to THB 5 billion from power and steam distribution system



Opportunities from **New Customers** 

New customers from operational growth



Reduction

Reduction of distribution system losses from the improvement towards most effective distribution.

The company has preliminary valuation of GPSC and GLOW with the long-term target of EBITDA expected to gradually increase by approximately THB 1,600 million by 2024.

## BENEFITS TO STAKEHOLDERS:



Customers Gain Higher Reliability

from several energy sources



Greenhouse Gases (GHGs) Reduction

due to more efficient distribution process.



### Mr. Surajit Buateng

Vice President, Engineering and Maintenance

"The company has continuously improved its availability and reliability on a yearly basis. Since the synergy of GPSC and GLOW, we have improved the network integration continuously strength to the company. We have more confidence in being able to continually deliver power and steam to our customers with availability and reliability."



### **BUSINESS DRIVERS**

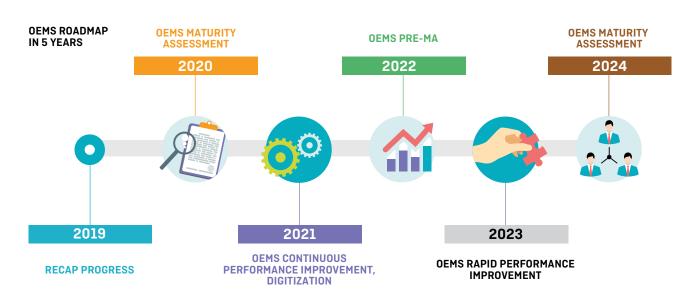
GPSC is committed to operational excellence with innovations to efficiently manage limited resources. Reliability and availability are among the key factors in offering optimum benefits to all groups of stakeholders and maintaining to be the leading company in reliability and availability.

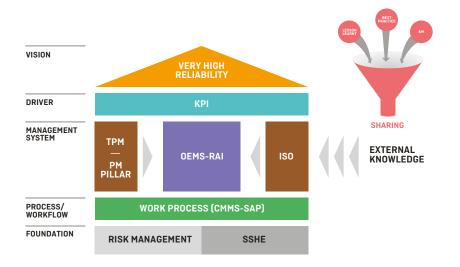
For more details on Maintaining Availability and Reliability (strategies, approaches, and reports), please visit http://www.gpscgroup.com/en/sustainability/economic/operational-excellence





### **PERFORMANCE**





Operation Excellence Management System (OEMS) is designed to lay a strong foundation for operations and geared towards world-class standards. The "Reliability & Asset Integrity (RAI) is a key element of OEMS to build up reliability and availability of the operational system. This year, RAI gaps components have been closed in line with suggestions from the latest 2018 assessment. Meanwhile, working committees have been set up and tasked with continual improvement in working towards operational excellence, as follows:

- Operation for Reliability Improvement Committee
- Power System Reliability Improvement Committee
- Steam Generation and Industrial Water Reliability Improvement Committee
- · Turnaround Steering Committee
- Turnaround Core Team

### TOTAL PRODUCTIVE MAINTENANCE (TPM)

The company has applied Total Productive Maintenance (TPM) and passed the evaluation of the Japan Institute of Plant Maintenance (JIPM) Assessors, a reliable institution of industrial maintenance in Japan. In 2019, the company has consistently operated and prepared for the 2020 Excellence in Consistent TPM Commitment Award.

The maintenance system covers the entire equipment lifetime, from planning, production and maintenance, with collaboration from all parties, from top executives to operational staff.







2018

TPM Excellence Award 2019

Leverage Internal Processes

Goal:

2020

Excellence in Consistent TPM Commitment



# PRODUCTIVITY IMPROVEMENT AND REDUCING OPERATIONAL LOSSES

In 2019, the company has implemented a total of 38 projects on energy consumption reduction, equipment productivity improvement, recycling and reuse of energy and wastewater, operational losses reduction, spare parts management, innovations for productivity improvement and maintenance, as well as safety, health and the environment. This has resulted in an increase to the contribution margin of THB 95.43 million.

Productivity Improvement and Reducing Operational Losses is a collaboration at the operational level, including production operations, engineering and maintenance, and construction project management, in order to design annual targets and plans for productivity improvement and reducing operational losses at the Central Utility Plants 1-4

(CUP 1-4), Sriracha Power Plant (SRC).

# Increase

95.43 million baht



# - 1

### **OPERATIONAL EXCELLENCE AWARDS**



# Zero Unplanned Shutdown Award

- CUP 2
- CUP 3
- SRC



# **OEMS Improvement Award**

Excellent Improvement on Operational Excellence Management



# Best Practices Sharing Award 3 Projects, cutting costs by THB 61 million

- Reducing Service Water Cooling by Installing Heat Exchanger at Blowdown Tank
- Auxiliary Boiler Management to Minimum Running.
- Steam Flushing (Steam Pipeline Distribution System)

KEY PERFORMANCE INDICATORS		PERFO	RMANCE	TARGETS		
	2016	2017	2018	2019	2019	2020
Plant Availability (%)	CUP 1-3 99.999	CUP 1-3 100	CUP 1-3 99.999	CUP 1-3 99.936	CUP 1-3 100	N/A**
	SRC 100	SRC 100	SRC 99.72	SRC 99.94	SRC 99.925	N/A**
Unplanned Shutdown* (times)	1	0	2	3	0	0
Zero Revenue Loss from Unplanned Shutdown (million baht)	1.36	0	2.03	6.89	0	0

 $\textbf{Remark:} \ \ ^* \ \text{Unplanned shutdowns, only those which had impacts on customers.}$ 

<sup>\*\*</sup> The company is under the process of corporate restructuring and capturing synergy value from the integration of GPSC & GLOW and, therefore, has set no target in 2020.

# **SUPPLY CHAIN MANAGEMENT**





**LONG-TERM TARGETS** 



8

suppliers

Undergoing Environmental, Social, and Governance (ESG) Audits



100%

of Critical Suppliers to be Trained in Environmental, Social, and Governance (ESG)



100%

of Tier 1 Suppliers Signing GPSC's Supplier Sustainable Code of Conduct



### **CROSS CATEGORY TCO\* REDUCTION**



### Mr. Pruet Kampee

Division Manager, Procurement

"According to the integration of GPSC and GLOW in this year, we have seen improvements in the procurement system, blending the strong points of both companies. New tools were introduced into the system, including E-auction, and Spend Cube, which can reduce costs while offering greater efficiency."

# OBJECTIVE:

To use Information Technology (IT) tools in procuring all products and services of GPSC and GLOW.

## BENEFITS TO COMPANY:

- Better efficiency of procurement system and synchronized data of GPSC and GLOW.
- Being able to calculate synergy value and thereby achieve cost reduction of 3% in the procurement process.

### BENEFITS TO STAKEHOLDERS:

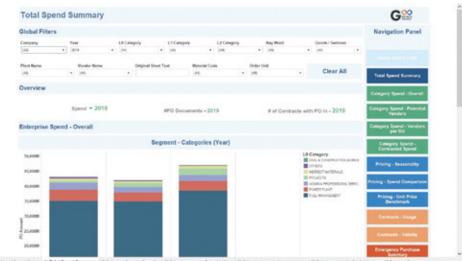
Suppliers' market and service expansion to GPSC and GLOW providing more opportunities for knowledge exchange for further product and services development to serve the needs of both GPSC and GLOW.

Remark: \* TCO: Total cost of ownership

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# Example Report in a Spend Cube System





# The state of the s

### **BUSINESS DRIVERS**

Raw materials, equipment and supplier services are essential to GPSC business operations. When suppliers do not abide by the regulations, company's operations may be affected. GPSC as therefore placed emphasis on supply chain risk management, cut delivery cost and time, and improved suppliers' businesses to grow sustainably together.

For more details on supply chain management (strategies, approaches, and reports), please visit http://www.gpscgroup.com/en/sustainability/economic/supply-chain-management



# **PERFORMANCE**

### SUSTAINABLE SUPPLY CHAIN MANAGEMENT

In 2019 the company improved its procurement process by implementing Green Procurement and online procurement for purchase approval. This has resulted in more data accuracy and accountability.

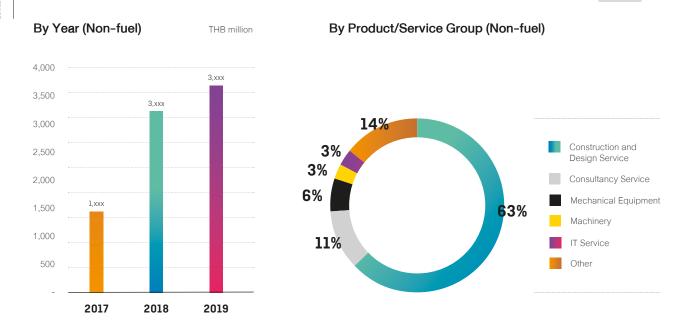
More new suppliers were selected and registered via the annual supplier audit on Environment, Society, and Governance (ESG) to reduce risks that might occur during the procurement process. As a result, no risks in business ethics, social responsibility, labour rights, safety and environment were found. Additionally, the company is conducting audits on eight Tier 1 suppliers.

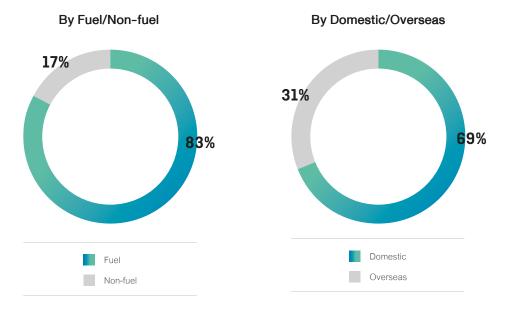
### SUPPLIER RELATIONSHIP MANAGEMENT

The company's suppliers are upgraded through GPSC Aunnual Supplier Seminar. In 2019, the highlight was the supplier potential improvement training under the "Innovation and Collaboration" concept, which encompasses such topics as business plan, procurement policy, good governance and safety guidelines, Green Industry, and sustainable management. Executives' representatives and suppliers from 40 companies participated in the training.

### SPENDING ANALYSIS

The company has collected data on its spending across all categories, including suppliers, materials, types and areas of spending, to analyze the data and develop procurement strategy and risk assessment.





## GREEN PROCUREMENT

GPSC has committed to promoting green procurement and sustainable supply chain management. In 2019, the company's green procurement guideline was designed to encourage suppliers to do business with greater environmental consciousness to create sustainable consumption from sustainable supply chains. The company's green procurement guidelines came into effective on January 1, 2020.



KEY PERFORMANCE		PERF0	TARGETS			
INDICATORS	2016	2017	2018	2019	2019	2020
Environmental, Social, and Governance (ESG) Audits by External Organizations (number)	-	4 Tier-1 Suppliers	8 Tier-1 Suppliers, 2 Tier-2 Suppliers	8 Tier-1 Suppliers	8 Tier-1 Suppliers	8 Tier-1 Suppliers
Critical Suppliers Trained in Environmental, Social, and Governance (ESG) (number)	_	20	40	40	40	40
Suppliers Signing GPSC's Supplier Sustainable Code of Conduct	_	114 Tier-1 Suppliers signed	100% of Tier-1 Suppliers signed	100% of Tier-1 Suppliers signed	100% of Tier-1 Suppliers signed	100% of Tier-1 Suppliers signed



# **EVOLVING THE BUSINESS MODEL**



**LONG-TERM TARGETS** 



To offer quality, competitively priced innovative products to be integrated with the energy storage system, as well as to achieve enhanced competitiveness in the energy industry market by

2022



To be a leader in the energy storage system in Thailand's industrial sector by

2022



To create new business models to keep up with future energy trends by

2022



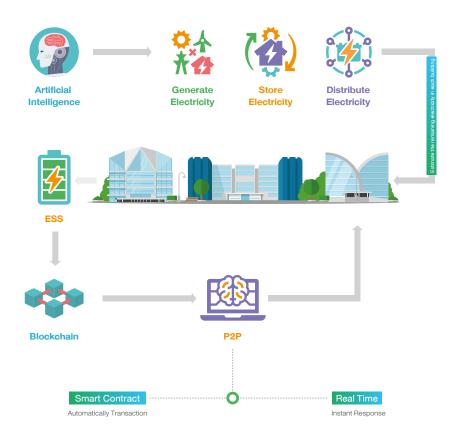


# OBJECTIVE:

The company has collaborated with PTT to develop energy innovations and a smart energy management system that balances usage and storage to ensure effective use of clean energy. The three innovations are:



- Solar rooftop and solar floating.
- Implementing Energy Storage System (ESS) to increase capacity of renewable energy.
- Using Artificial Intelligence (AI) to analyze power generation storage and distribution to correspond with power consumption at different times of the day, and to estimate the energy remaining in each building that goes into the Energy Storage System to be used during times when solar energy is not being produced. Using blockchain to enable Peer-to-Peer (P2P) trading with Smart Contract and real-time monitoring.



# BENEFITS TO COMPANY:

- Saving THB 6 million a year of energy costs for VISTEC.
- Knowledge of innovations in utility business.

# BENEFITS TO STAKEHOLDERS:

- Reducing 644,000 kgCO<sub>2</sub>e/year of greenhouse gas emissions.
- Having a community knowledge center for renewable energy.
- Building good relations with communities.
- Encouraging VISTEC students from the Faculty of Information Technology to participate in modern energy technology application development.

**Remark:** \* The Vidyasirimedhi Institute of Science and Technology (VISTEC) is located on 3,500 rai of land in Wangchan Valley, Rayong Province. The institute is a brainchild of the company and PTT Group and aims to foster energy innovations development and serve as a higher-education research institute with the collaboration of the state sector to move forward energy technology in the Eastern Economic Corridor of Innovation (EECi).

### Mr. Arthip Tantivoravong

Division Manager, Business and Marketing Development

"By focusing on innovations, the company has not only pioneered energy storage system but also looked for opportunities to be the leader of a full service of energy management. I am proud of being a part of creating values for the company, while at the same time contributing to the environment and Thai society as a whole".



### **BUSINESS DRIVERS**

The company strives to operate using environmental-friendly technologies and innovations that are beneficial to society. This is in line with the New S-Curve strategy, focusing on innovative products and new business opportunities to keep up with the transformation in utility business and future demands of clean energy and with the aim of becoming a leading Energy Management Solution Provider.

For more details on Evolving the Business Model (strategies, approaches, and reports), please visit http://www.gpscgroup.com/en/sustainability/economic/innovation



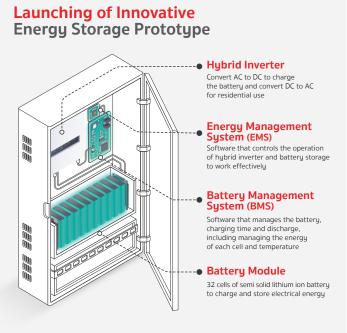
### **PERFORMANCE**

### **DISTRIBUTED GENERATION**

In 2019 the company made progress in R&D by installing a pilot-scale, 10 kWh battery prototype from 24 M Technologies, Inc. for actual use in testing along with the Energy Management System\*, which can supply energy for a household of 3-4 members for 3-4 hours. This innovation is being developed as future alternative energy.

Remark: \* Energy Management System is an automatic system controlling energy generation and distribution, as well as electric equipment.





### ADVANTAGES OF 24M BATTERY

- 1. Cheaper: Up to 50% shorter production process, and hence, lower production cost.
- 2. Safer: It is designed with anticontamination for fire prevention.
- 3. Greener: Unlike ordinary Li-Ion batteries that contain binders\*, this battery has no binders and therefore is recyclable and environmentally friendly.

Remark: \* Binder is any binding substance that holds materials together and a key component in electrochemical performance in battery.



The company collaborated with PTT in conducting R&D on the Prototype Battery for commercial production through the following procedures:

- The committee set up an operations team to conduct detailed research on semi-solid battery technologies.
- Plans for battery plant construction, production and testing control, key performance indicators and assessment criteria are drawn up to identify technical and economic feasibility.
   Budget planning in battery production is also carried out for approval of a pilot plant construction.

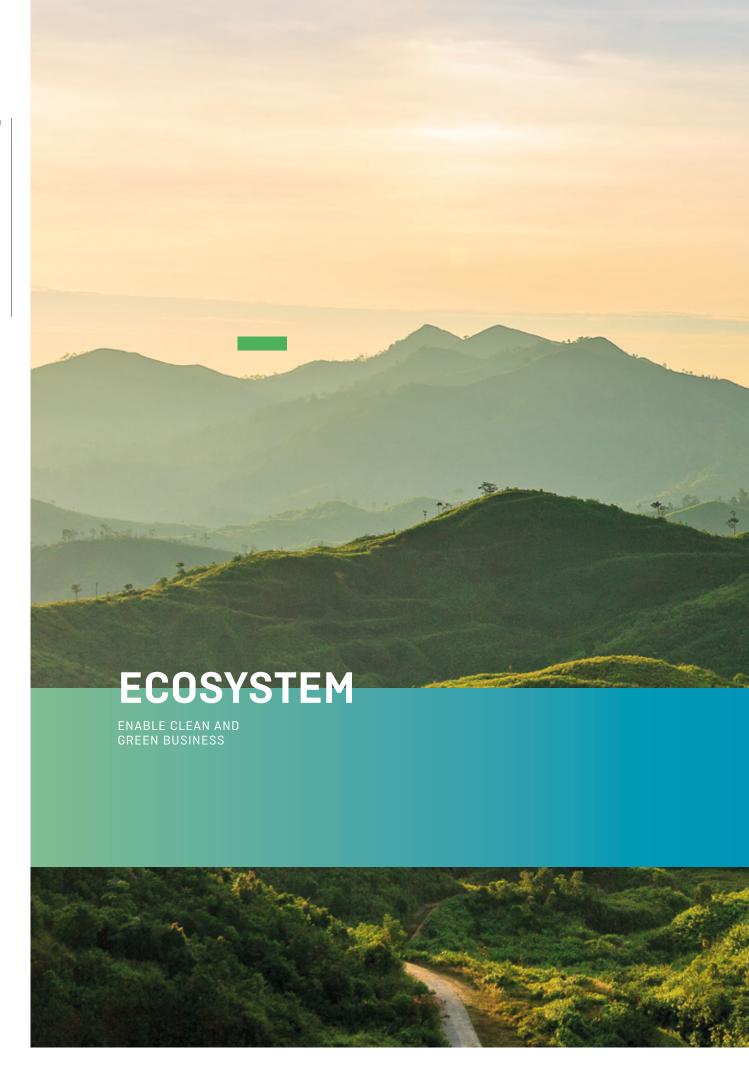
## **DISRUPTIVE TECHNOLOGY**

In the era of disruptive technology, the energy sector is regarded as being disrupted faster than any other sector. The energy business model is evolving from Business-to-Business (B2B) towards Business-to-Consumer (B2C) in the future. This is coupled with an exponential rise in energy demands of more than 60%. However, the company has been ready and planned for a transformation in its business model, positioning itself to be more than utility plants. It has also spotted the business growth opportunity in Energy Storage System (ESS) and in becoming a leader of Energy Management Solution Provider, which will be key to customers' needs.

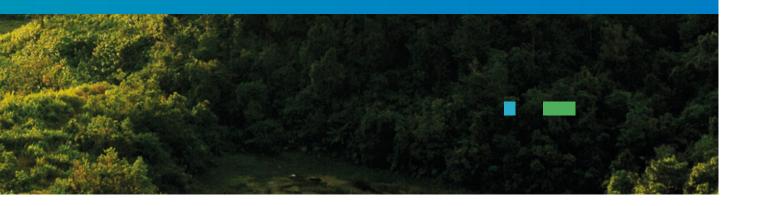


KEY PERFORMANCE		PERFOR	RMANCE		TARGETS		
INDICATORS	2016	2017	2018	2019	2019	2020	
Development of Innovative Products and Energy Management Solution Service	-	Setting up Energy Innovations Department	batteries at pilot scale	Testing the pilot-scale batteries for commercial use (in two areas)	Developing battery prototype for commercial use	Testing and installing the battery prototype for customers' actual use	
Contracts and/or Agreements on Installing Batteries for Energy Storage System (Number)	-	_	_	3	3	5	
Income from New Business Models (Million Baht)	-	42*	321*	348*	Generating income from new business models	Generating income from new business models	

Remark: \* Income from renewable energy







# **ENVIRONMENTAL MANAGEMENT**





**LONG-TERM TARGETS** 



To Maintain the

ISO 14001:2015

Standard



0

Waste to Landfills



0

Breach of Environmental Laws



### **ECO INDUSTRIAL TOWN**

# Ms. Angsana Thongampai Environmental Management Officer



"It has fostered balanced development of the economy, industries, the environment and communities based on the concept of Sustainable Development. Many industrial plants' production has shifted from the use of natural resources and labour to environmentally friendly technologies and innovations. The Eco Industrial Town project has been implemented in areas with high potential in response to the mission of the 11<sup>th</sup> National Economic and Social Development Plan (2012-2016) for the balanced development of economy, industries, environment and communities."

The company has encouraged industrial plants to work in line with the Eco Industrial Town Index's criterion to upgrade factory level and provincial industrial development. This has resulted in Rayong Province winning the Eco Industrial Town Award, Level 4.



GLOW's Power Plant in Rayong Province receives an Eco Factory Award at the ECO Innovation Forum on September 23, 2019

### **UTILIZE STEAM TO STEAM TURBINE PROJECT @ CUP 3**





# OBJECTIVE:

To reuse steam leftover from the power generation process to increase reliability. This project started in October 2019.

# BENEFITS TO COMPANY:

Reduction of risks from power distribution in islanding mode and increase of sales revenue by at least THB 16 million per year.

# BENEFITS TO STAKEHOLDERS:

Reliability of power distribution to general consumers.

#### Remark:

\* The company has not distributed or received power through any external power network.



## **RECYCLING OF BOTTOM AND FLY ASH (FROM BITUMINOUS)**



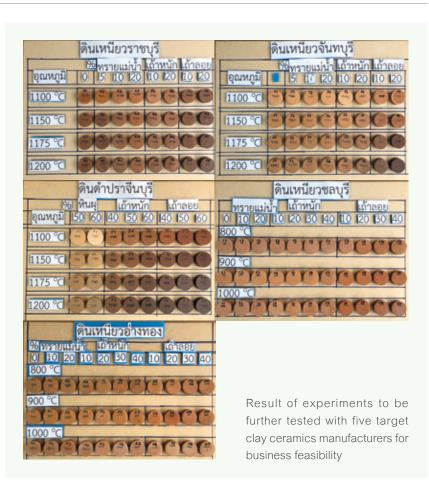
To manage waste from coal-fired power plants.

# BENEFITS TO COMPANY:

Added value to coal ash. GLOW has disposed fly ash up to 3,000 tonnes per year by supplying it to concrete business which will in turn use it as a raw material in place of cement.

## **BENEFITS TO STAKEHOLDERS:**

Reduction of production costs. Recycling of fly ash does not only reduce the number of landfill sites, which causes an environmental impact, but also replaces the use of cement in concrete business.



### Assistant Professor Boonserm Premthada

Lecturer, Interior Design, Faculty of Architecture, Chulalongkorn University

"Waste is unavoidable but it can be useful for humans and the environment in a positive way. If we can make use of waste, people will understand and will be more willing to accept development

and innovations. Adding value to waste such as fly ash for the benefits of communities and the environment can foster balanced living between humans and the environment."



Fly ash bricks are used for construction in public areas.



The Recycling of Bottom and Fly Ash project has not only lowered the costs of using cement and reduced the environmental impacts of fly ash but also stimulated the economy at the community level through fly ash brick making and adding value to fly ash from coal-fired power plants.



### **BUSINESS DRIVERS**

Natural resources and the environment are crucial factors to the power generating process. However, improper control may pollute the environment and human lives. The company has, therefore, committed to controlling and monitoring pollution around point sources while efficiently using resources, adhering to the circular economy principle to create share values and bring positive impacts to businesses, society and the planet.

For more details on environmental management (strategies, approaches, and reports), please visit http://www.gpscgroup.com/th/sustainability/ environmental/environmental-responsibility



# **PERFORMANCE**



### AIR POLLUTANT EMISSION

Efficiency of the company's power generation has been improved to reduce air pollutant emissions, which are caused by constant use of natural gas in power generation. In 2019, the company emitted approximately 798.77 tonnes of NO.



### WATER AND WASTEWATER **MANAGEMENT**

The company consumes 8.54 million cubic meters of water per day in its production process. However, none of the consumed water comes directly from public water resources, and therefore no natural water resource has been impacted directly from the company's operations. Moreover, 174,309 cubic meters of water, or 2.04% of water used, has been recycled and reused.



## Central Utility Plants 1 and 3 (CUP 1 and 3)



### **Clarified Water**

comes from WHA Utilities and Power Public Company Limited (WHAUP)



### Condensate Return\*

from clients

# Central Utility Plant 2 (CUP 2)



### Raw Water

comes from RIL 1996 Company Limited (RIL)



### Condensate Return\*

from clients

### Sriracha Power Plant (SRC)



#### Raw Water

comes from Eastern Water Resources Development and Management Public Company Limited. (East Water) To ensure that the wastewater quality meets legal requirements, the company inspects water quality prior to its release into the industrial estate authority's central wastewater treatment system. So far, the wastewater quality of all company's projects has been higher than the standard law requirements.

Remark: \* Condensate return means reuse of condensed steam in the form of demineralized water



In 2019, hazardous and non-hazardous waste from the company's operations were reduced by 86.72% and increased by 28.79%\*, respectively, compared to the previous year. This has enabled us to achieve the target of zero hazardous waste to landfills.

### ASH DISPOSAL MANAGEMENT

In 2019, a total of 194,529.59 tonnes of bottom ash and fly ash were generated by the company's coal-fired power plants, 99.32% or 193,208.74 tonnes of which is recycled.

Remark: \* The Sriracha Power Plant has changed its waste management from land reclamation to composting, and the figure has therefore risen.

### **BIODIVERSITY**

Nature is the source of the living organisms and resources that are indispensable to human life. Biodiversity reflects richness and balance of ecosystems. Development across the world has so far had immense impacts on biodiversity such as the destruction of nature and the extinction of species and plant and

animal habitats. The company has operated its business with social and environmental responsibilities recognizing that its operations may have impacts on biodiversity. The company has committed to reducing its biological footprints by implementing environmental impacts assessment on all of its new projects.

# To preserve and

**BIODIVERSITY MANAGEMENT** 



For more details on biodiversity, please visit https://www.gpscgroup.com/en/sustainability/ environmental/biodiversity



- To preserve and manage biodiversity by prohibiting operations in International Union for Conservation of Nature Category or IUCN Category I-IV areas.
- To study reports of environmental impact analyses of domestic and international projects.
- To rigorous study of biodiversity for international projects by defining action plans and environmental management and monitoring plans.
- Prevention and Reduction of environmental impact measures and Environmental Impact Monitoring and Assessment.
- PTT Group Biodiversity and Ecosystem Services Management Procedure in accordance with "Mitigation Hierarchy" principle (Avoid, Minimize, Restore and Offset)
- Collaboration with related organizations and agencies including community networks such as small boat fishing group and local government.

KEY PERFORMANCE INDICATORS		PERFOR	RMANCE	TARGETS		
	2016	2017	2018	2019	2019	2020
Waste to Landfill (%)	0	0	0	0	0	0
ISO 14001	To maintain the ISO 14001: 2008 standard	To maintain the ISO 14001: 2008 standard	To maintain the ISO 14001: 2008 standard	To maintain the ISO 14001: 2008 standard	To maintain the ISO 14001: 2008 standard	To maintain the ISO 14001: 2008 standard
Serious Breach of Environmental Laws (cases)	1	0	0	0	0	0





THROUGH EACH STEP OF OUR OPERATION



# CLEAN ENERGY FUTURE AND CLIMATE RESILIENCE



### **LONG-TERM TARGETS**



Decrease in Both Direct and Indirect Greenhouse Gas Emissions Intensity to no More Than

0.49

tonnes CO<sub>3</sub>e/MWh by 2025



Increase in Renewable Energy Production to

20%

by 2024



# THE REFUSE-DERIVED FUEL (RDF) PROJECT IN RAYONG PROVINCE

# OBJECTIVE:

The company plans to invest THB 465 million in the Refuse-Derived Fuel (RDF) Project to reduce municipal solid waste and greenhouse gas emissions from landfills by using it as an alternative to fossil fuel.

# BENEFITS TO COMPANY:

Generation of RDF of 200 tonnes per day.

# BENEFITS TO STAKEHOLDERS:

Greenhouse gas emissions reduced by 108,033 tonnes CO<sub>2</sub>e of per year.





# OBJECTIVE:

Installing two Variable Frequency Drives (VFD) and a set of automatic control systems to enhance the operational efficiency and reliability of the GLOW Energy CFB 3 Plant.

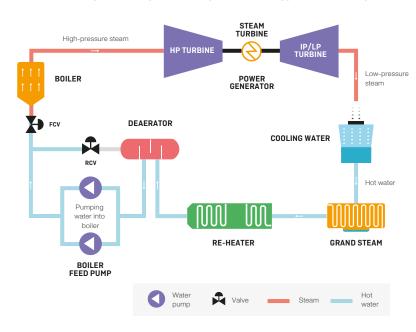
# BENEFITS TO COMPANY:

Reduction in electricity costs of THB 2.09 million per year.

# BENEFITS TO STAKEHOLDERS:

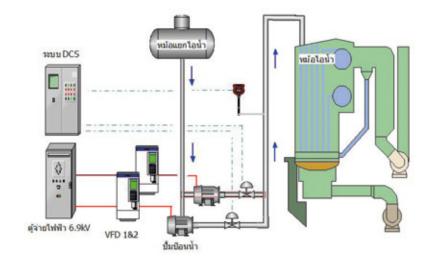
Greenhouse gas emissions reduced by 2,965 tonnes CO<sub>2</sub>e per year.

## Coal power-generating process (GLOW Energy CFB 3 Plant)











### Dr. Pongvipa Lohsomboon

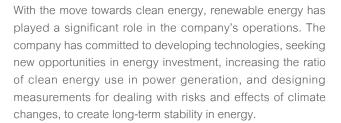
Deputy Director

Thailand Greenhouse Gas Management Organization (TGO)

"GPSC is one of the prototype industrial companies that has joined with the Thailand Greenhouse Gas Management Organization (TGO) in reducing greenhouse gas emissions such as Rayong Waste to Energy Project. Among the cooperative projects under the Thailand Voluntary Emission Reduction Program (T-VER) which not only help to reduce internal energy consumption but also benefit community and environment by recycling waste and reusing water for the utmost utilization. Nonetheless, climate change is and will continue to be a pressing issue on a global level. As for the energy industry, we need to increase the ratio of renewable energy use, to improve low carbon technology, and to set the carbon price for future business planning."

### **BUSINESS DRIVERS**





For more details on environmental management (strategies, approaches, and reports), please visit http://www.gpscgroup.com/en/sustainability/environmental/climate-change-management

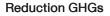


### **PERFORMANCE**



### **CLEAN ENERGY FUTURE**

The company has diversified its investments to cover renewable energies including solar power and hydropower. For instance, it has invested in 24M Technologies to develop an Energy Storage System (ESS), which has a low investment cost and enhances the efficiency of renewable energies. In 2019, the company supported investment worth a total of THB 13,236,250,000 in an energy efficiency development project at the Central Utility Plant (CUP 1-3), Sriracha Power Plant (SRC), and the Refuse-Derived Fuel (RDF) Project of the T-VER. This results in reduction of 422,185 tonnes CO<sub>2</sub>e of greenhouse gas per year, saving a total of THB 1,658,136,000 a year.









1,658,136,000

THB per year



### **CLIMATE RESILIENCE**

In 2019 the company reviewed climate change risk and opportunity assessment to improve measures in dealing with water crises and natural disasters. The details are as follows:



### Internal Performance

- Environmental Impact Assessment (EIA)
- Reserving resources for power generation
- Designing water management guidelines in compliance with 3Rs principle
- Developing Business Continuity Management (BCM) system
- Organizing workshops on "Plant Crisis Plan" for staff
- Inspecting and maintaining equipment as scheduled.
- Installing Surge Protectors



### **External Performance**

- Joining the committee of PTT Group Water Management (PTTWT) and the Eastern Water Management team in Rayong Province to constantly monitor, assess and analyze the water situation.
- Closely following up the progress of the water management project in the Eastern Economic Corridor (EEC).



The company also places priority on carbon pricing for risk assessment, carbon credit trading and risk assessment in future investment in high carbon emission companies. In 2019, a special talk on "Carbon Pricing Mechanism" held by GPSC, was given by experts from the

Thailand Greenhouse Gas Management Organization to raise awareness of the impacts, risks and opportunities rendered by carbon prices, as well as to provide guidelines on carbon pricing planning.

KEY PERFORMANCE	PERFORMANCE				TARGETS		
INDICATORS	2016	2017	2018	2019	2019	2020	
Increase of Renewable Energy (MW)	-	-	Base period	50*	Long-term targets to 2024		
Intensity of Greenhouse Gas Emission from Production (Tonnes CO <sub>2</sub> e/MWh)	0.34	0.32	0.33	0.30	Long-term targets to 2025 lower than 0.49		

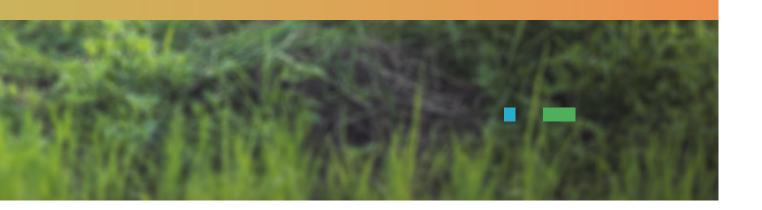
Remark: \* Number is approved by the company's committee







QUALITY FOR LIFE



# OCCUPATIONAL HEALTH AND SAFETY (OHS)



### **LONG-TERM TARGETS**



0

Lost Time Injury Frequency (LTIF),

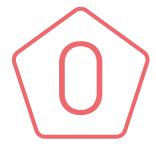
both short-term and long-term



0

Total Recordable Injury Rate (TRIR)

both short-term and long-term



0

**Fatality Rate** 





### Miss Nahathai Boonpiraks

Quality Management Officer

"By joining the Ergonomics in the Workplace Improvement Program, I have learned how to prevent injuries in the workplace from experts. The knowledge can be truly applied in my daily work. However, I hope the company puts the principle into practice for further improvement of workplace safety."



### Remark:

Ergonomics in the workplace means improvement of workplace conditions to ensure safety, quality of work-life and productivity while eliminating mistakes, stress and fatigue while working.

### OBJECTIVE:

- Maintain good body posture and health and have the knowhow to prevent workplace injuries.
- Assess risks and design prevention and safety measures for particular groups at risk.

### BENEFITS TO COMPANY:

Ensuring health and safety as a priority helps improve work and productivity while reducing mistakes.

### BENEFITS TO STAKEHOLDERS:

Employees enjoy good health without workplace injuries. Groups with different risks have access to effective prevention and safety measures.



### **BUSINESS DRIVERS**

GPSC is committed to operational excellence, with a strong focus on implementing the Quality, Security, Safety, Health and Environment Policy. To raise safety awareness among employees and to minimize loss of life, injury, illness and impacts on nearby communities and the environment, effective risk control and safety management has been put in place across all the company's working processes.

For more details on occupational health and safety management (strategies, approaches and reports), please visit http://www.gpscgroup.com/en/sustainability/social/occupational-health-and-safety



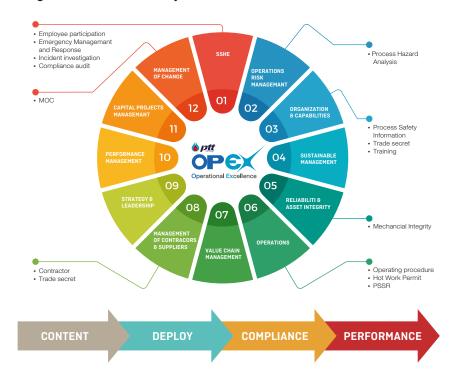


### **PERFORMANCE**

### **PROCESS SAFETY**

The company has exchanged and gathered in-depth information on safety processes from those who have experienced real situations, and shared guidelines and suggestions gained from assessments as well as lessons learned from real losses, both within the PTT Group and among companies in the industry.

Target: Zero Process Safety Event Tier 1



Process Safety Management (PSM) is part of the Operational Excellence Management System (OEMS), encompassing design, engineering process, operating procedures, inspection of production efficiency, machinery readiness and maintenance, as well as risk assessment for process risk control management planning both in normal times and in emergencies for smooth, effective and safe operations.

### Performance of Process Safety Management





### PERSONAL SAFETY

The company requires that all new staff attend basic safety training and that performance in occupational health and safety be a Key Performance Indicator (KPI). In 2019 the workplace injury rate was 0.13 per 200,000 working hours.

The lesson learned from this injury rate has been taken into consideration for further improvement. This has resulted in achieving the target as a company with zero Lost Time Injury Frequency Rate (LTIFR) for seven consecutive years, from 2013 until the present (as of December 2019). Presently, the company's statistics show 9,440,929 consecutive accident-free work hours. The aim is for 10,000,000 consecutive accident-free work hours.

Furthermore, the company also puts priority on the safety of operational staff. They are required to dress in proper uniforms and be safety role models. The Safety Man Award on the QSHE Day 2019 was held to raise awareness of safety among staff of all power plants.



### Mr. Anon Chantabutr

Engineer, Machinery Maintenance Department One of the "Safety Man" Award winners

"The machinery maintenance team and I, as well as contractors, will always work under the company's safety policy and regulations, by wearing proper uniforms with personal protective equipment (PPE) at all times while working. The company's rules on procurement need to detail specific equipment when working in specific conditions, such as working in stifling or high-rise areas."

### SURVEY ON SECURITY, SAFETY, HEALTH AND ENVIRONMENT CULTURE WITHIN GPSC

The company conducted the Security, Safety, Health and Environment Culture Survey 2019 (SSHE Culture Survey 2019) online among staff and regular contractors covering seven topics as follows:



There were 99.59% respondents in the survey. The average score is 3.77 out of a total of 5, compared to 3.61 in 2017, a rise that evidences the level of strict enforcement of regulations on security, safety, health and environment.

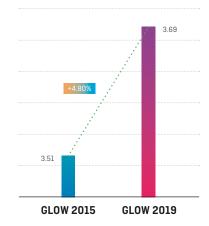
### GLOW'S SAFETY CULTURE SURVEY

GLOW conducted an online Safety Culture Survey to compare with the results of a survey in 2015. The eight survey topics were:



There were 96.79% respondents in the survey. The average score is 3.69, compared to 3.51 in 2015, an increase of 4.80%. The "Policy and Strategic Objectives" achieved a lower score than that of 2015, probably because the 2015 survey did not include staff at headquarters but did in 2019. Besides, the headquarters did not fully implement Environmental Health and Safety (EHS) Management Practices such as Fresh Eyes observation, Stop Work Authority (SWA) and Managing Rule-Breaking (MRB), so, the percentage has dropped dramatically.

The findings both GPSC and GLOW will be used in further improvement and planning to upgrade the safety culture so as to become a company with zero injury and accident.



KEY PERFORMANCE		PERFO	TARGETS			
INDICATORS (KPI)	2016	2017	2018	2019	2019	2020
Lost Time Injury Frequency Rate (LTIFR) (per 200,000 working hours)	0	0	0	0	0	0
Total Recordable Injury Rate (TRIR) (per 200,000 working hours)	0	0	0	0.13	0	0
Fatality Rate	0	0	0	0	0	0

Remark: Performance and target data cover both employees and contractors

# WORKFORCE DEVELOPMENT AND WELL-BEING



**LONG-TERM TARGETS** 



**OVER 60%** 

of Employee Participate in Employee Engagement Survey



100%

Key Positions in Succession Planning



### LESS TURNOVER RATE THAN

the average rate in the same industry



### THE "GREAT LEADER" WORKSHOP FOR VALUE ADDED CO-CREATION FROM GLOW INTEGRATION



### Mr. Sirimet Leepagorn

Executive Vice President, Asset Management Global Power Synergy Public Company Limited

"The "Great Leader" Workshop provides participants with a body of knowledge and shared experience in organizational skills and human resources management, in terms of strategy, policy to handle change, as well as leadership skills to encourage staff to work with enthusiasm and to their fullest potential. Knowledge from the workshop can really be put into practice. For example, in 2019 we were able to achieve the Synergy plan worth THB 596 million."

### OBJECTIVE:

change.

Employee development 1. Strategic Management: To create understanding of the link between strategic planning and strategic implementation; 2. Organizational Management: To undertake effective and quality management, and 3. Change Management: To successfully adapt to

### BENEFITS TO COMPANY:

Having leaders with high potential is among the key factors moving the organization forward. The workshop, with the participation of 46 executives, aimed to enhance executive potential in organizational skills and human resources management.

### BENEFITS TO STAKEHOLDERS:

To boost participants' potential in both organizational skills and human resources management and turn them into leaders of the next generations.

### WORK-LIFE INTEGRATION AND HOLISTIC PERSONAL&PROFESSIONAL DEVELOPMENT



To build up long-term employee engagement through the following factors:





Turnover rate has constantly decreased for the past three consecutive years and is less than the average rate of those in the same industry.

### BENEFITS TO STAKEHOLDERS:

Employees work more happily, express their opinions and contribute to company's innovations.



### Ms. Aranya Pattanavongsawat

Human Resources Manager GLOW Energy PLC

"To grow sustainably, a company needs to have employees with high potential who are ready to grow together with the company. Moreover, they need to work happily. I believe that happy people produce quality work as they dedicate more of themselves, are ready to embrace new technologies and therefore come up with new ideas and innovations."



### **BUSINESS DRIVERS**

Employees are indispensable wells of business growth. It is a challenge for the company to be well prepared with highly qualified employees, to enhance their potential to suit the company's direction amid the current climate of constant change, economic, social and environmental, as well as to boost motivation and employee engagement.

For more details on workforce development and well-being (strategies, approaches and reports), please visit http://www.gpscgroup.com/en/ sustainability/social/our-employees



### **PERFORMANCE**

### **WORKFORCE PLANNING**

In 2019 the company has revised its organizational structure and working processes, developed a performance management system, and enhanced employees' leadership potential to correspond with new and future business growth. In addition, the company has a succession plan, recruiting staff to replace retirees and in preparation for new positions derived from business expansion.



### **EMPLOYEE DEVELOPMENT**

Employee development can help upgrade the company's competitiveness, and move the company towards realizing its vision as a global leading innovative and sustainable power company.



		2019						
TRAINING PROGRAMS	DETAILS	EXPENSE REDUCTION (BAHT)	COST (BAHT)	B/C RATIO	NUMBER OF Participants	% OF FTES THAT PARTICIPATED IN THIS PROGRAM		
Business Academy	Long-term training to boost skills for employees, especially in the power business, which includes basic knowledge on power plants, power businesses and power trading contracts.	369,000	35,000	10.54	76	22		

Working Environment that Embraces Diversity

## DIVERSITY AND EQUAL OPPORTUNITY

Diversity enables the company to address diverse needs of shareholders and changing forms of business. The company has focused on equal opportunity in recruitment and employee development for professional growth. In 2019, the company's female executives accounted for 32.12%.

# Gender Race Nationality Religion Political Stance

Domicile

Disability

## EMPLOYEE WELL - BEING

The company's employee welfare committee is made of employees' representatives for all employees to equally voice their views. Presently, there are eleven employees on the employee welfare committee.

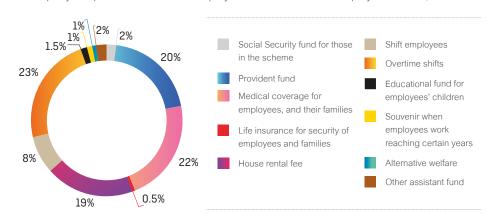
### **EMPLOYEE'S BENEFITS**

Economic and

Social Status

The company has provided benefits to employees of all levels to suit employees' needs, as follows:

Age



KEY PERFORMANCE INDICATORS		PERFO	RMANCE		TARGETS		
	2016	2017	2018	2019	2019	2020	
Employee Engagement (%)	50	52	57	_*	60	60	
Key Positions in Succession Planning (%)	-	_	100	100	100	100	
Turnover Rate (%)	3.87	2.40	3.25	5.11	Less than the average rate of those in the same industry**	-	

Remark: \* The turnover rate in the power and public utility industry is 7.9% in 2019.

<sup>\*\*</sup> Due to the merger process, no survey was conducted though the target remains the same.

### SUSTAINABLE COMMUNITY



**LONG-TERM TARGETS** 



**CSR Projects** 

Evaluated by Social Return on Investment (SROI)



**OVER 70%** 

Ratio of Community Investment and Commercial Initiatives to Charitable Donations



**OVER 75%** 

Community Satisfaction



### Mr. Ronachai Wongsathep

High Vocational Certificate, first year student, Power Electrical Engineering, Rayong Technical College

"The project has put the theory we learn in the classroom into practice, which also benefits society. Many thanks to GPSC, who has offered us an opportunity to do this project for our community."





Objectives and Missions of the project:

- Safety: Repair and improvement of electrical systems aims to reduce fire and electrical risks to prevent loss of life and assets at public places, including schools, temples, local medical centers, and local governmental organizations.
- Saving: Replacement of electrical equipment and appliances, as well as to solar cell system installation target to save energy and reduce costs. Therefore, the savings can be useful for other activities.
- Security: To install alternative energy systems in remote areas for better quality of life and energy security

e.g. installation of solar rooftop for

Social Enterprise: Creating Mor Fai Fah (Electricity Doctors) for the communities by training locals to take care of their electrical systems, which also generates income for the communities.

hospitals.





### BENEFITS TO COMPANY:

- 120 employees volunteering in the project.
- CO reduction of 20,400 KgCO e per

### **BENEFITS TO STAKEHOLDERS:**

- Developing Mor Fai Fah (Electricity Doctors) by training 30 teachers and students of Rayong Technical College with certificates from the Department of Skill Development, with a total income of THB 252,000.
- Saving electricity costs from replacing electrical equipment and appliances for four schools of THB 12,000 a year.
- Installing Solar Rooftops for two hospitals in remote areas, thus saving THB 432,000 of electricity costs annually.



Additional Income of

252,000 THB

from Mor Fai Fah (Electric Doctors)



Volunteering in the Project



12,000 THB

a year in electricity costs at four schools



Two Hospitals Saves

**32,000** THB

**BUSINESS DRIVERS** 

**20,400** KgCO<sub>g</sub>e per year

CO<sub>2</sub> Reduction of

of annual electricity costs from the solar rooftop installation



### **PERFORMANCE**



For sustainable business growth, the communities and society must also thrive. In adhering to international strategic frameworks on community and society development and embracing the UN's Sustainable Development Goals (SDGs), the company has applied its business expertise to support communities and solve social problems effectively.

For more details on sustainable community management (strategies, approaches, and reports), please visit http://www.gpscgroup.com/en/sustainability/social/community-responsibility

### COMMUNITY DEVELOPMENT AND ENGAGEMENT

GPSC has focused on community development and engagement by organizing activities to promote and support education and to generate incomes for a better local economy.

### Community and Social Development Projects Consistent with the Company's Strategy

### **STRATEGIC SDGs ACTIVITIES BENEFITS TO BENEFITS TO GPSC** FRAMEWORK ON **COMMUNITIES AND SOCIAL ACTIVITIES** SOCIETY Building good YOUNG SOCIAL - Educational accessibility -**INNOVATOR 2019** Better educational relationship with local communities. Based on the concept "Energy, quality natural resources and sustainable -Helping to develop Creating human national educational environment" to raise awareness among resources in many human resources. fields relating to young generations on efficient use of Education energy and natural resources to reduce the business. environmental problems while enhancing local and national economy. - Building good CONNEXT ED (IN - Developing national **COLLABORATION** educational human relationships with local communities. WITH PTT GROUP) resources. With the aim to build up a network of young generations who engage in moving forward national education by teaming with school administrators through knowledge exchanges and school development plan. - Utilizing staff's skill and "LIGHT FOR A BETTER LIFE" - Four schools gaining expertise in caring for **PROJECT** power system safety lessening fire risks. the society. 120 staffs With the aim of utilizing staff's electrical The schools gaining has engaged in the skills to care for the community and information on electric project. society by restoring local electric systems. system care. Enhancing company's This reflects the company's leading Quality of Life - Creating jobs for expertise on electric innovations in the power business. Development local people. system care. - Saving THB 12,000 Building good a year of electricity relationships with costs from solar rooftop. the communities. "OUR KUNG BANG KRACHAO" - Creating community Reducing greenhouse **PROJECT** engagement. gases from waste Fullfill demands of while increasing green A model of Community Centric -Development with a shared goal to the community. spaces. Developing Supporting staff to meet demands of the community. volunteer in increasing The company has joined with a waste the compound of Environment management team in support of the local Chak Daeng Temple green areas. as learning center for environment team. waste management in Kung Bang Krachao. Developing 12 rai of land in Chalerm Prakiat

area.

### STRATEGIC **SDGs ACTIVITIES BENEFITS TO BENEFITS TO GPSC** FRAMEWORK ON **COMMUNITIES AND SOCIAL ACTIVITIES** SOCIETY "ZERO WASTE VILLAGE" PROJECT - Raising awareness - Reducing Green among 280 people on House Gas 11.6 tCO\_e The company has transferred know-how waste management. Building good on waste management to the Promoting efficient use relationships with local communities, supporting waste reduction activities and generating incomes in four of resources to reduce communities. areas: Thap Ma Municipality, Nam Khok environmental impacts. The efficient separation Reducing waste in of waste results in Municipality, Map Kha Municipality, and effective Municipal Nong Tapan Subdistrict Administration communities. Generating additional Solid Waste (MSW) through the following six activities: incomes for people that is delivered to 1. Waste Banks 2. Waste donation for recycling in the communities. the RDF project. 3. Workshops for waste management leaders in schools. 4. Activities to raise awareness on waste. 5. Green markets 6. Activities to add value to waste and

### RESPECTING COMMUNITY RIGHTS

Taking into consideration the expectations of all groups of stakeholders and community rights, GPSC respects laws and regulations of international standards. Its operations and management have been closely inspected to minimize possible impacts from the company's operations.

reduce waste.

From the 2019 human rights risk assessment, it is found that the company had low risks in health and safety of people in the surrounding communities and that no minority or ethnic groups were affected by the company's operations.

KEY PERFORMANCE	PERFORMANCE				TARGETS		
INDICATORS	2016	2017	2018	2019	2019	2020	
Number of CSR Projects Evaluated by Social Return on Investment (SROI) Analysis	-	1	5	6	6	6	
Ratio of Community Investment and Commercial Initiatives to Charitable Donations (%)	_	34.6	30.3	75	Over 70	Over 70	
Community Satisfaction	90.20	82.40	60.40*	87.8	75	75	

Remark: \* GPSC has expanded the survey scope covering more groups of stakeholders. This year is the first time that all survey data was collected by an external party for data neutrality.

## **GRI CONTENT INDEX**

### **GLOBAL REPORTING INITIATIVE: CORE OPTIONS**

	GLOBAL REPORTING	INTEGRATED	2019 INTEGRATI	ED SUSTAINABILITY REPOR	RT DISCLOSURE
DISCLOSURE	INITIATIVE	REPORTING (IR)	PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE
GRI 102: GEN	ERAL DISCLOSURES				
1. ORGANIZAT	TIONAL PROFILE				
102-1	Name of the organization	Organizational overview and external environment	Cover		
102-2	Activities, brands, products, and services	<ul> <li>Organizational overview and external environment</li> <li>Business model</li> </ul>	10, 14-15		
102-3	Location of headquarters	Organizational overview and external environment	Back cover		
102-4	Location of operations	Organizational overview and external environment	13		
102-5	Ownership and legal form	Organizational overview and external environment	10		
102-6	Markets served	Organizational overview and external environment	13		
102-7	Scale of the organization	Organizational overview and external environment	13	https://www. gpscgroup.com/th/ business/project	
102-8	Information on employees and other workers	Organizational overview and external environment	On website	Sustainability performance data (on website)	
102-9	Supply chain	<ul> <li>Organizational overview and external environment</li> <li>Business model</li> </ul>	14-15, 39, 45, 49, 53, 57, 64, 70, 75, 79, 82		
102-10	Significant changes to the organization and its supply chain	Organizational overview and external environment	5-6, 12		
102-11	Precautionary principles or approach	Organizational overview and external environment	40	https://www. gpscgroup.com/th/cg/ risk-management	
102-12	External initiatives	Organizational overview and external environment	16		

DICO! 00!!D=	GLOBAL REPORTING	INTEGRATED	2019 INTEGRAT	ED SUSTAINABILITY REPOR	T DISCLOSURE
DISCLOSURE	INITIATIVE	REPORTING (IR)	PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE
102-13	Membership of associations	Organizational overview and external environment	7-9		
2. STRATEGY					
102-14	Statement form senior decision-maker	<ul><li>Strategy and resource allocation</li><li>Outlook</li></ul>	6-7		
102-15	Key impacts, risks, and opportunities	<ul> <li>Business model</li> <li>Risks and opportunities</li> <li>Strategy and resource allocation</li> </ul>	26, 28, 41, This page	<ul> <li>https://www. gpscgroup.com/th/ cg/risk-management</li> <li>Annual Report 2019</li> </ul>	
3. ETHICS AN	D INTEGRITY				
102-16	Values, principles, standards, and norms of behavior	-	11, 42	https://www. gpscgroup.com/th/cg/ policy	
102-17	Mechanisms for advice and concerns about ethics	-	38-39	CG handbook - Whistleblowing https://www. gpscgroup.com/th/cg/ whistle-blowing	<b>~</b>
4. GOVERNAN	ICE				
102-18	Governance structure	Governance	39-40	<ul><li>https://www. gpscgroup.com/th/ about/directors</li><li>Annual Report 2019</li></ul>	
102-19	Delegating authority	Governance	38, This page	Annual Report 2019	
102-20	Executive - level responsibility for economic, environmental, and social topics	Governance	6-7		
102-21	Consulting stakeholders on economic, environmental, and social topics	Governance	17-19, 23		
102-22	Composition of the highest governance body and its committees	Governance	39, This page	Annual Report 2019	
102-24	Nominating and selecting the highest governance body	Governance	39-40, This page	Annual Report 2019	

DISCLOSURE	GLOBAL REPORTING	INTEGRATED	2019 INTEGRAT	ED SUSTAINABILITY REPOR	T DISCLOSURI
DISCLUSURE	INITIATIVE	REPORTING (IR)	PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE
102-25	Conflicts of interest	Governance	39-40, This page	CG handbook - Conflict of interest	
102-27	Collective knowledge of highest governance body	Governance	39-40, This page	<ul> <li>https://www. gpscgroup.com/ Uploads/elFinder/ about_us/ board/20180920- board-skill-matrix- th-02.pdf</li> <li>Annual Report 2019</li> </ul>	
102-28	Evaluating the highest governance body's performance	Governance	39, This page	Annual Report 2019 (Board assessment)	
102-29	Identifying and managing economic, environmental, and social impacts	Governance	23, 26		
102-30	Effectiveness of risk management processes	Governance	40, This page	Annual Report 2019	
102-32	Highest governance body's role in sustainability reporting	Governance	26		
102-35	Remuneration policies	Governance	This page	Annual Report 2019 and CG handbook (Remuneration)	
102-38	Annual total compensation ratio	Governance	This page	Annual Report 2019 (Annual compensation of board, executive pool)	
5. STAKEHOL	DER ENGAGEMENT				
102-40	List of stakeholder groups	Stakeholder relationships (Principle)	17-19		
102-41	Collective bargaining agreements	<ul><li>Stakeholder relationships (Principle)</li><li>Human</li></ul>	80, This page	GPSC did not have the trade union during the reporting period.	
102-42	Identifying and selecting stakeholders	Stakeholder relationships (Principle)	16, 25		
102-43	Approach to stakeholder engagement	<ul><li>Stakeholder relationships (Principle)</li><li>Social and relationship</li></ul>	17-19, 46		
102-44	Key topics and concerns raised	Stakeholder relationships (Principle)	17-19, 46		

	GLOBAL REPORTING	INTEGRATED	2019 INTEGRAT	ED SUSTAINABILITY REPOR	T DISCLOSURE
DISCLOSURE	INITIATIVE	REPORTING (IR)	PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE
6. REPORTIN	G PRACTICE				
102-45	Entities included in the consolidated financial statements	<ul><li>Risks and opportunities</li><li>Basis of preparation and presentation</li></ul>	This page	Annual Report 2019: The boundary of the consolidated financial statements is included in GPSC and its subsidiaries.	
102-46	Defining report content and topic boundaries	<ul><li>Risks and opportunities</li><li>Basis of preparation and presentation</li></ul>	4, 23, 28-31		
102-47	List of material topics	<ul><li>Business model</li><li>Risks and opportunities</li><li>Basis of preparation and presentation</li></ul>	26, 28-31		
102-48	Restatements of information	_	This page	Sustainability performance data are changed due to changes in organization structure (merging with GLOW).	
102-49	Changes in reporting	Organizational overview and external environment	26		
102-50	Reporting period	Organizational overview and external environment	4		
102-51	Date of most recent report	Organizational overview and external environment	This page	GPSC Sustainability Report 2018	
102-52	Reporting cycle	Organizational overview and external environment	4		
102-53	Contact point for questions regarding the report	Organizational overview and external environment	5		
102-54	Claims of reporting in accordance with the GRI Standards	Organizational overview and external environment	5		
102-55	GRI content index	Organizational overview and external environment	This page		
102-56	External assurance	Organizational overview and external environment	99-100		

DICOL COURT	GLOBAL REPORTING	INTEGRATED	2019 INTEGRATE	D SUSTAINABILITY REPOR	T DISCLOSUR
DISCLOSURE	INITIATIVE	REPORTING (IR)	PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE
GRI 103: MAN	AGEMENT APPROACH				
103-1 103-2	Explanation of the material topic and its boundary  The management approach and its boundary	<ul><li>Outlook</li><li>Innovation</li><li>Outlook</li><li>Innovation</li></ul>	39, 45, 49, 53, 57, 64, 70, 75, 79, 82 39, 45, 49, 53, 57, 64, 70, 75, 79, 82	<ul> <li>https://www.gpscgroup.com/th/about/directors</li> <li>https://www.gpscgroup.com/th/cg/risk-management</li> <li>https://www.gpscgroup.com/th/cg/Policy</li> <li>https://www.gpscgroup.com/th/sustainability/economic/customer-relationshipmanagement</li> <li>https://www.gpscgroup.com/th/sustainability/economic/operationalexcellence</li> <li>https://www.gpscgroup.com/th/sustainability/economic/operationalexcellence</li> <li>https://www.gpscgroup.com/th/sustainability/economic/supply-chain-</li> </ul>	
103-3	Evaluation of the management approach	Outlook    Innovation	38-42, 44-46, 47-51, 52-55, 56-59, 62-66, 68-71, 74-76,	management  https://www.gpscgroup. com/th/sustainability/ economic/innovation  https://www.gpscgroup. com/th/sustainability/ environmental/ environmental- responsibility  https://www.gpscgroup. com/th/sustainability/ environmental/climate- change-management  https://www.gpscgroup. com/th/sustainability/ social/occupational- health-and-safety  https://www.gpscgroup. com/th/sustainability/ social/our-employees  https://www.gpscgroup. com/th/sustainability/ social/our-employees	

DIOOI CO!!E=	GLOBAL REPORTING	INTEGRATED	2019 INTEGRAT	ED SUSTAINABILITY REPOR	T DISCLOSURE
DISCLOSURE	INITIATIVE	REPORTING (IR)	PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE
GRI 201: ECO	NOMIC PERFORMANCE				
201-1	Direct economic value generated and distributed	Social and relationship	82	Sustainability performance data (on website)	
201-2	Financial implications and other risks and opportunities due to climate change	Natural	70-71		
201-4	Financial assistance received from government	Governance	38	In 2019, GPSC did not receive any financial assistance from any government	
GRI 202: MAF	RKET PRESENCE				
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Human	This page	Entry level wage of GPSC is higher than local minimum wage at significant locations of operation with an equal opportunity to employees regardless of gender.	
GRI 203: IND	RECT ECONOMIC IMPACT	'S			
203-1	Infrastructure investments and services supported	<ul><li>Manufactured</li><li>Social and relationship</li></ul>	83-84		
203-2	Significant indirect economic impacts	Risks and opportunities	83-84		
GRI 205: ANT	I-CORRUPTION				
205-2	Communication and training about anti-corruption policies and procedures	Governance	42	Sustainability performance data (on website)	
205-3	Confirmed incidents of corruption and actions taken	Governance	This page	<ul><li>Sustainability performance data (on website)</li><li>Annual Report 2019</li></ul>	
GRI 206: ANT	I-COMPETITIVE BEHAVIO	R			
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Governance	On website	Sustainability performance data (on website)	

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DISCLOSURE	INITIATIVE	REPORTING (IR)	PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE
GRI 300: ENV	IRONMENT				
GRI 302: ENE	RGY				
302-1	Energy consumption within the organization	Natural	On website	Sustainability performance data (on website)	<b>~</b>
302-3	Energy intensity	Natural	On website	Sustainability performance data (on website)	
302-4	Reduction of energy consumption	Natural	On website	Sustainability performance data (on website)	
GRI 303: WA1	TER .				
303-1	Water withdrawal by source	Natural	65	Sustainability performance data (on website)	~
303-2	Water sources significantly affected by withdrawal of water	Natural	64-65, 71	There was no water resource significantly affected by the company water withdrawal in 2019.	
303-3	Water recycled and reused	Natural	64-65	Sustainability performance data (on website)	
GRI 304: BIO	DIVERSITY				
304-2	Significant impacts of activities, products, and services on biodiversity	Natural	65-66	https://www.gpscgroup. com/th/sustainability/ environmental/ biodiversity	
GRI 305: EMI	SSIONS				
305-1	Direct (Scope 1) GHG emissions	Natural	On website	Sustainability performance data (on website)	<b>~</b>
305-2	Energy indirect (Scope 2) GHG emissions	Natural	On website	Sustainability performance data (on website)	~
305-3	Other indirect (Scope 3) GHG emissions	Natural	On website	Sustainability performance data (on website)	<b>~</b>
305-4	GHG emissions intensity	Natural	71	Sustainability performance data (on website)	~
305-5	Reduction of GHG emissions	Natural	70	Sustainability performance data (on website)	
		•			

DISCLOSURE	GLOBAL REPORTING INITIATIVE	INTEGRATED REPORTING (IR)	2019 INTEGRATED SUSTAINABILITY REPORT DISCLOSU			
JISCLUSUKE			PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE	
305-7	Nitrogen oxides (NOx), sulfur oxides (SOX), and other significant air emissions	Natural	64	Sustainability performance data (on website)	<b>~</b>	
GRI 306: EFF	LUENTS AND WASTE					
306-1	Water discharge by quality and destination	Natural	65	Sustainability performance data (on website)		
306-2	Waste by type and disposal methods	Natural	65	Sustainability performance data (on website)	<b>~</b>	
GRI 307: ENV	IRONMENTAL COMPLIANC	E				
307-1	Non-compliance with environmental laws and regulations	Natural	62, 66	Sustainability performance data (on website)		
GRI 308: SUP	PLIER ENVIRONMENTAL A	ASSESSMENT				
308-1	New suppliers that were screened using environmental criteria	Social and relationship	55			
308-2	Negative environmental impacts in the supply chain and actions taken	Social and relationship	53			
GRI 400: SOC	IAL					
GRI 401: EMP	LOYMENT					
401-1	New employee hires and employee turnover	Human	80	Sustainability performance data (on website)		
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Human	80	www.gpscgroup.com/ th/sustainability/social/ our-employees		
401-3	Parental leave	Human	On website	Sustainability performance data (on website)		
GRI 402: LAB	OR/MANAGEMENT RELAT	IONS				
402-1	Minimum notice periods regarding operational changes	Human	This page	Comply with local laws and regulations		
GRI 403: OCC	UPATIONAL HEALTH AND	SAFETY				
403-1	Workers representation in formal joint management-worker health and safety committees	Human	On website	Sustainability performance data (on website)		

DISCLOSURE	GLOBAL REPORTING INITIATIVE	INTEGRATED REPORTING (IR)	2019 INTEGRATED SUSTAINABILITY REPORT DISCLOSURE		
			PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Human	This page	<ul> <li>Sustainability performance data (on website)</li> <li>Not applicable for GPSC to breakdown such data into region and gender due to region and gender equity in Thailand on occupational health and safety.</li> </ul>	~
GRI 404: TRA	INING AND EDUCATION				
404-1	Average hours of training per year per employee	Human	On website	Sustainability performance data (on website)	
404-2	Programs for upgrading employee skills and transition assistance programs	Human	80		
404-3	Percentage of employees receiving regular performance and career development reviews	Human	On website	Sustainability performance data (on website)	
GRI 405: DIVI	ERSITY AND EQUAL OPPO	RTUNITY			
405-1	Diversity of governance bodies and employees	<ul><li>Governance</li><li>Human</li></ul>	39, 80		
GRI 406: NON	I-DISCRIMINATION				
406-1	Incidents of discrimination and corrective actions taken	<ul><li>Governance</li><li>Human</li></ul>	42		
GRI 407: FRE	EDOM OF ASSOCIATION A	ND COLLECTIVE BARGAI	NING		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Social and relationship	53, This page	No case of employee dismissal or obstruction against the assembling of employees for negotiation purpose in 2018	
GRI 408: CHII	LD LABOR				
408-1	Operations and suppliers at significant risk for incidents of child labor	Social and relationship	53		

DISCLOSURE	GLOBAL REPORTING INITIATIVE	INTEGRATED REPORTING (IR)	2019 INTEGRATED SUSTAINABILITY REPORT DISCLOSURE		
DISCLOSURE			PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE
GRI 409: FOR	CED OR COMPULSORY LA	BOR			
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Social and relationship	53		
GRI 411: RIGH	ITS OF INDIGENOUS PEOP	LES			
411-1	Incidents of violations involving rights of indigenous peoples	Governance     Human	42		
GRI 412: HUM	IAN RIGHTS ASSESSMENT				
412-1	Operations that have been subject to human rights reviews or impact assessments	Governance     Human	42		
412-2	Employee training on human rights policies or procedures	Governance     Human	42		
GRI 413: LOC	AL COMMUNITIES				
413-1	Operations with local community engagement, impact assessments, and development programs	Social and relationship	83-84	Sustainability performance data (on website)	
413-2	Operations with Significant actual and potential negative impacts on local communities	Social and relationship	84		
GRI 414: SUP	PLIER SOCIAL ASSESSME	NT			
414-1	New suppliers that were screened using social criteria	Social and relationship	55		
414-2	Negative social impacts in the supply chain and actions taken	Social and relationship	53		
GRI 415: PUB	LIC POLICY				
415-1	Political contributions	Governance	42, This page	GPSC did not support any in-kind both direct and non-direct political contribution during the reporting period.	



DISCLOSURE	GLOBAL REPORTING INITIATIVE	INTEGRATED REPORTING (IR)	2019 INTEGRATED SUSTAINABILITY REPORT DISCLOSURE		
			PAGE	DETAILS/OMISSIONS	EXTERNAL ASSURANCE
GRI 418: CUS	TOMER PRIVACY				
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	-	46, This page	Annual Report 2019	
GRI 419: SOC	IOECONOMIC COMPLIANC	E			
419-1	Non-compliance with laws and regulations in the social and economic area	<ul><li>Governance</li><li>Social and relationship</li></ul>	This page	No significant fine and non-monetary sanction for non-compliance with environmental, social and economic law and regulations in 2019.	
G4 SECTOR D	ISCLOSURE: ELECTRIC U	TILITIES			
EU1	Installed capacity, broken down by primary energy source and by regulatory regime	Financial     Manufactured	10, 13	Sustainability performance data (on website)	
EU2	Net energy output broken down by primary energy sources and by regulatory regime	Manufactured	On website	Sustainability performance data (on website)	
EU10	Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime	<ul><li>Financial</li><li>Manufactured</li></ul>	On website	Sustainability performance data (on website)	
EU11	Average generation efficiency of thermal plants by energy source and regulatory regime	Manufactured	On website	Sustainability performance data (on website)	~
EU15	Percentage of employees eligible to retire in the next 5 and 10 years broken down by job category and by region	Human	On website	Sustainability performance data (on website)	
EU17	Days worked by contractor and subcontractor employees involved in construction, operation & maintenance activities	Human	On website	Sustainability performance data (on website)	

EU18 Percentage of Human On website Sustainability performance data subcontractor employees that have undergone relevant health and safety training  EU22 Number of people Human On website Sustainability performance data economically displaced  On website Sustainability performance data (on website)	TERNAL SURANCE
contractor and subcontractor (on website)  employees that have undergone relevant health and safety training  EU22 Number of people Human On website Sustainability physically and economically displaced  On website (on website)	
physically and performance data economically displaced (on website)	
and compensation, broken down by type of project	
EU25 Number of injuries and Human On website Sustainability fatalities to the public involving company assets, including legal judgements, settlements and pending legal cases of diseases	
EU28 Power outage Manufactured On website Sustainability frequency performance data (on website)	
EU29 Average power outage Manufactured On website Sustainability duration performance data (on website)	
EU30 Average plant Manufactured 47, 51 Sustainability availability factor by energy source and by regulatory regime (on website)	<b>~</b>

# THE PRINCIPLES OF UNITED NATIONS GLOBAL COMPACT (UNGC) PROGRESS STATUS

UNGC PRINCIPLE	PROGRESS	INFORMATION IS AVAILABLE AT			
HUMAN RIGHTS					
Businesses should support     and respect the protection of     internationally proclaimed     human rights.	<ul> <li>Supporting human rights principles on employees and management</li> <li>Announcement of human rights policy</li> </ul>	p. 42 and https://www.gpscgroup.com/en/ sustainability/social/human-rights			
Make sure that they are not complicit in human rights abuses.	<ul> <li>Establishing Human Rights         Management System that includes         Due Diligence Process on Human         Rights</li> <li>Setting a variety of communication         channels for human rights         grievances</li> </ul>	https://www.gpscgroup.com/th/ sustainability/social/human-rights			
LABOUR					
3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	<ul> <li>Open communication for employee's opinions</li> <li>Did not interfere employees on participating labor association or meeting</li> <li>Established welfare committee that consists of representative employees from various divisions</li> </ul>	p. 78-80 and https://www.gpscgroup.com/th/ sustainability/social/our-employees			
The elimination of all forms of forced and compulsory labor.	<ul> <li>Human resource management that covers human rights aspects</li> <li>Communication of policy and standards related to forced and compulsory labor to suppliers and contractors for using as a guidance</li> </ul>	p. 52-55 and p. 78-80			
5. The effective abolition of child labor	<ul> <li>Human resource management that covers human rights aspects on child labor issues</li> <li>Communication of policy and standards related to child labor to related suppliers and contractors.</li> </ul>	p. 52-55 and p. 78-80			
The elimination of discrimination in respect of employment and occupation.	Equity in employment and occupation.	р. 78-80			

UNGC PRINCIPLE		PROGRESS	INFORMATION IS AVAILABLE AT			
EN	ENVIRONMENT					
7.	Businesses should support a precautionary approach to environmental challenges.	<ul> <li>Announcement and implementation of Quality, Security, Safety, Health and Environmental Policy (QSHE Policy)</li> <li>Environmental protection and mitigation controls that align with Environmental Impact Assessment (EIA) report</li> <li>Environmental performance audit by external party and verified for compliance with international standard (ISO 14001)</li> </ul>	p. 62-66 and https://www.gpscgroup.com/ th/sustainability/environmental/ environmental-responsibility			
8.	Undertake initiatives to promote greater environmental responsibility	<ul> <li>Improving and monitoring air quality project</li> <li>Continuous program on monitoring water discharge quality</li> <li>Building environmental management culture.</li> </ul>	p. 62-66			
9.	Encourage the development and diffusion of environmentally friendly technologies	<ul> <li>Improving efficiency of electricity and steam production by following the eco-efficiency principle</li> <li>Low-carbon technology development</li> </ul>	p. 56-59 and p. 62-66			
ANTI-CORRUPTION						
10	Businesses should work against corruption in all its forms, including extortion and bribery.	<ul> <li>Announcement of         Anti-Corruption Policy     </li> <li>Established anti-corruption         grievance channels     </li> <li>Risk assessment on anti-corruption</li> </ul>	p. 38-42 and http://www.gpscgroup.com/th/cg/policy			



### **ASSURANCE STATEMENT**

# SGS (THAILAND) LIMITED'S REPORT ON SUSTAINABILITY ACTIVITIES IN THE GLOBAL POWER SYNERGY PUBLIC COMPANY LIMITED'S INTEGRATED SUSTAINABILITY REPORT FOR 2019

### NATURE AND SCOPE OF THE ASSURANCE/VERIFICATION

SGS (Thailand) Limited was commissioned by Global Power Synergy Public Company Limited (hereinafter referenced to as GPSC) to conduct an independent assurance of the Integrated Sustainability Report and the Sustainability Performance Data year 2019 (hereinafter referred to as Integrated Sustainability Report). The scope of the assurance, based on the SGS Sustainability Report Assurance methodology, included the sampled text, and data in accompanying tables, contained in this report.

The information in the Integrated Sustainability Report of GPSC and its presentation are the responsibility of the directors or governing body and the management of GPSC. SGS (Thailand) Limited has not been involved in the preparation of any of the material included in the Integrated Sustainability Report.

Our responsibility is to express an opinion on the text, data, graphs and statements within the scope of verification with the intention to inform all GPSC's stakeholders.

The SGS protocols are based upon internationally recognized guidance, including the Principles contained within the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines (2016) for accuracy and reliability and the guidance on levels of assurance contained within the AA1000 series of standards and guidance for Assurance Providers.

This report has been assured at a moderate level of scrutiny using our protocols for:

- evaluation of content veracity;
- AA1000 Assurance Standard (2008) Moderate evaluation of the report content and supporting management systems against the AA1000 Accountability Principles (2008) and;
- evaluation of the report against the Global Reporting Initiative (GRI) Sustainability Reporting Standards (2016) and the Electric Utilities Sector Disclosures (EUSD).

The assurance comprised a combination of pre-assurance research, interviews with relevant employees, superintendents, and the management, documentation and record review and validation with external bodies and/or stakeholders. The site visits were conducted at GPSC head office, Sriracha Power Plant and Central Utility Plant 2 (CUP-2) where reporting data are collected and centralized. Financial data drawn directly from independently audited financial accounts has not been checked back to source as part of this assurance process.

### STATEMENT OF INDEPENDENCE AND COMPETENCE

The SGS Group is the world leader in inspection, testing and verification, operating in more than 140 countries and providing services including management systems and service certification; quality, environmental, social and ethical auditing and training; environmental, social and sustainability report assurance. SGS (Thailand) Limited affirm our independence from GPSC, being free from bias and conflicts of interest with the organization, its subsidiaries and stakeholders.

The assurance team was assembled based on their knowledge, experience and qualifications for this assignment, and comprised auditors experienced in one or more of the following standards; AA1000, GRI, QMS, EMS, SMS, EnMS, Carbon - Water Footprint, GHG Validation & Verification, Lead auditors and experience on the SRA Assurance service provisions.

### **VERIFICATION/ ASSURANCE OPINION**

On the basis of the methodology described and the verification work performed, we are satisfied that the information and data contained within Integrated Sustainability Report verified is accurate, reliable and provides a fair and balanced representation of GPSC sustainability activities from 1st January 2019 to 31st December 2019.

The assurance team is on the opinion that the Report can be used by the Reporting Organization's Stakeholders. We believe that the organization has chosen an appropriate level of assurance for this stage in their reporting. In our opinion, the content and reported data of the report meet the requirement of GRI (2016) in accordance with Core option and AA1000 Assurance Standard (2008), moderate level assurance.

### AA1000 ACCOUNTABILITY PRINCIPLES (2008) CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

### Inclusivity

Shareholders, investors, partners, government agencies and related organizations, employees, suppliers, community and society, and customers are identified and recognized as the important stakeholders by GPSC and communications. GPSC communicated with internal and external stakeholders in various ways in the respective divisions and sites. Positioning of sustainability is under the direct control of the management. The communication with stakeholders is continuously implemented in the divisions and sites including the headquarters.

### Materiality

GPSC has established effective processes for issues determination that are material to the business. Formal review has identified stakeholders. Issues that are material to each group and the report addresses these at an appropriate level to reflect their importance and priority to stakeholders.

### Responsiveness

The report includes coverage given to stakeholder engagement, as well as the response to the material issues concerned by the stakeholders

### GLOBAL REPORTING INITIATIVE REPORTING GUIDELINES CONCLUSIONS, FINDINGS AND RECOMMENDATIONS

GPSC's Integrated Sustainability Report year 2019 is prepared in accordance with the core option for GRI Standard (2016) and fulfills all the required content and quality criteria for the identified aspects listed as below;

GRI 102 - General Disclosures 2016;

• 102-17 Mechanisms for advice and concerns about ethics

GRI 302 - Energy 2016;

• 302-1 - Energy consumption within the organization

GRI 303 - Water 2016;

• 303-1 - Water withdrawal by source

GRI 305 - Emissions 2016;

- 305-1 Direct (Scope 1) GHG emissions
- 305-2 Energy indirect (Scope 2) GHG emissions
- 305-3 Other indirect (Scope 3) GHG emissions (Upstream categories: 3.Fuel and energy related activities, 4.Upstream transportation and distribution, and 5.Waste generated in operations)
- 305-4 GHG intensity
- 305-7 Nitrogen Oxide (NOx), Sulfur Oxide (SOx), and other significant air emissions

GRI 306 - Effluents and Waste 2016;

• 306-2 - Waste by type and disposal method

GRI 403 - Occupational Health & Safety 2016;

 403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of workrelated fatalities

GRI Sector Disclosures "The Electric Utilities Sector Disclosures" (EUSD), Sector Specific Indicators;

- EU11 Average generation efficiency of thermal plants by energy source and by regulatory regime
- EU30 Average plant availability factor by energy source and by regulatory regime

The material aspects and their boundaries within and outside of the organization are properly defined in accordance with GRI's Reporting Principles for Defining Report Content. Disclosures of identified material aspects, boundaries are correctly located in context report.

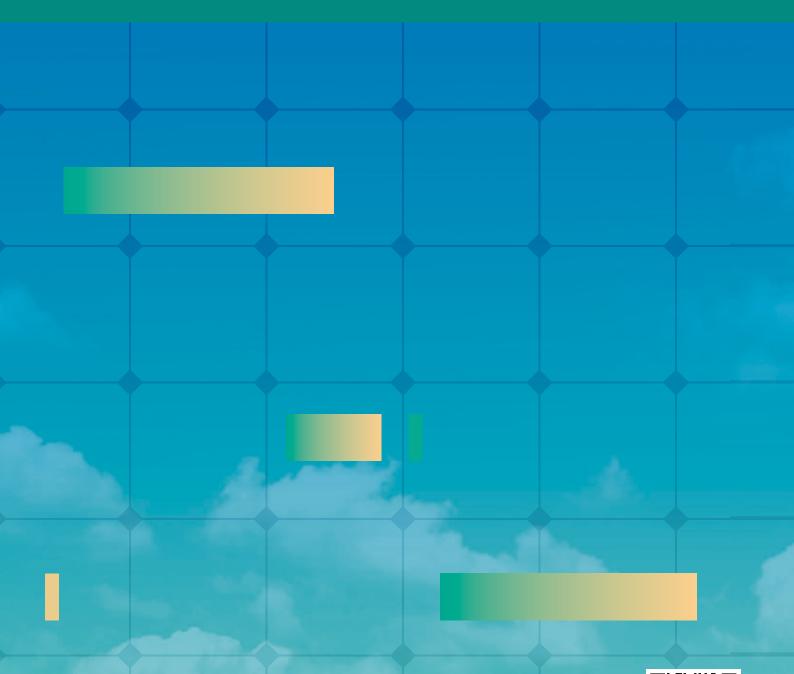
### Signed:

For and on behalf of SGS (Thailand) Limited



Amnat Pisutsin, General Manager Bangkok THAILAND 13<sup>th</sup> March 2020 www SGS com





### **GLOBAL POWER SYNERGY PUBLIC COMPANY LIMITED**

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