

GPSC Human Development Programs 2022



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Program 1

ACT SPIRIT KM and GPSC Power Academy Program 2022



Program 1: ACT SPIRIT KM and GPSC Power Academy 2022

Program Description



Since the grand opening of ACT SPIRIT Knowledge Management in 2021, ACT SPIRIT KM and GPSC Power Academy is an on-going program, where employees can develop their expertise on the future of energy, via the GPSC Power Academy. In the GPSC Power Academy, employees can self-pace themselves to learn more about various types of green energy, including battery, solar power, and wind, from the Battery Technology and Application, Solar and Smart Energy Solution, and Wind Power courses, respectively.



**Battery Technology
and Application**



**Solar and Smart
Energy Solution**

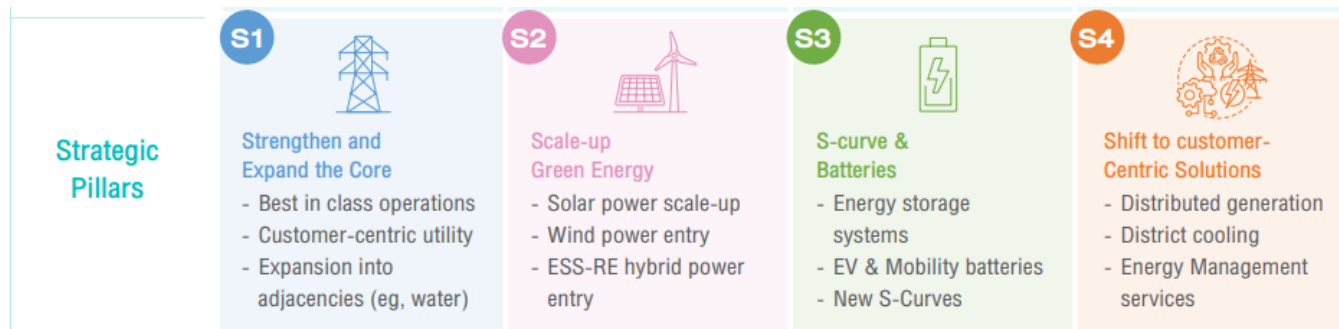


**Wind
Power**

Program 1: ACT SPIRIT KM and GPSC Power Academy

Objective

The aims of ACT SPIRIT KM and GPSC Power Academy are twofold. (1) The ACT SPIRIT KM and GPSC Power Academy aims to be a continuous learning platform for employees to enhance their knowledge and skills on the green energy. (2) The ACT SPIRIT KM and GPSC Power Academy aims to assist the company towards the 4S Strategies (S1: Strengthen and expand core; S2: Scale-up Green Energy; S3: S-curve & Batteries; and S4: Shift to customer centric solutions), via the enhanced employees' green knowledge and skills.

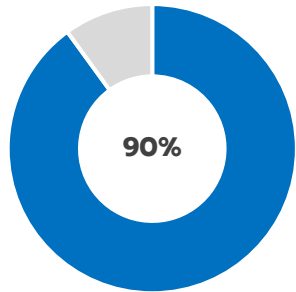


% of FTEs Participating in the Program

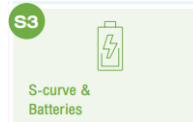
49.64% (550 of 1,128 employees).

Program 1: ACT SPIRIT KM and GPSC Power Academy

Quantitative impact of business benefits



90 percent of respondents reported that they gained knowledge and perceived as beneficial to their work.



- Achieve synergy value of more than 1,600 MB in 2022
- Strengthening Zero TRIR
- A signed contract with JEL and TJEL.
- Zero unplanned shutdown program
- 25.11 MW equity capacity increase our portfolio from Solar Projects in Taiwan
- 149 MW equity capacity increase our portfolio from Offshore Wind in Taiwan
- 1,917 MW equity capacity increase our portfolio from Solar Power Platform in India (Avaada Energy Private Limited)



- 30 MWh Energy Storage Production of Semi Solid Technology Plant, considered as the first in Southeast Asia
- Investment in the 1 Gwh batter manufacturing Auhui Axxiva New Energy Technology in China, holding 11.1% equity, aiming to serve the electric vehicle market.
- A signed mutual understanding (MOU) with Cho Phraya Express Boat and the Thailand's first Prototype Boat Battery Pack

4S Corporate Strategy Progress & Outlook



S1: Strengthen and Expand the Core

Recurring Synergy Value



As of **2021**, the recognized synergy value was **1,633 MB** (after-tax) from O&M, procurement and corporate functions.

2022 Target
> 1,600 MB per year



GLOW SPP has signed construction contract with JEL and TJEL (SCOD 2024)

GLOW SPP 2 uses advanced technology to *increase the project efficiency, the stability of the network, serving energy demand of EGAT and IUs as well as being environmentally friendly.*

Operation Excellence Management System

To drive "Operational Excellence" across all assets of GPSC

- Total Recordable Injury Rate (TRIR)

Safety

Energy Efficiency

- Energy Intensity Index

ROIC

Operating Costs

Reliability

- Lower operating cost/unit
- Higher operating margin

- Plant integrity review & management
- Replace critical equipment

2022 Target



Strengthening Zero TRIR & Zero Unplanned Shutdown program

Best in Class Target



To be Operational Best in Class by 2025

4S Corporate Strategy Progress & Outlook



S3: S-Curve and Batteries

SemiSolid Energy Storage Unit Production Plant



"G-Cell" Energy Storage Unit Production Plant with a total initial capacity of 30 MWh per year, the first in Southeast Asia that employs the SemiSolid technology

"VW acquires 25% stake in 24M technologies" shows that 24M SemiSolid manufacturing platform offers the potential to substantially reduce capital and operating costs to meet rising demand for EVs.

Investment in China



Investment in **Anhui Axxiva New Energy Technology Co., Ltd.**

- Holding 11.1% equity interest for a battery manufacturing plant with a 1 GWh p.a. production capacity
- Serving the electric vehicle market in China

✓ **Target to start of regular production in Q1/2023**

GPSC & Chao Phraya Express Boat

Sign an MOU to Develop Thailand's first Prototype Boat Battery Pack



The establishment of NUOVO PLUS

NUOVO 



GPSC & PTT have formed a joint venture in the battery supply chain to support electric vehicle (EV) production.

✓ **2022 Target : Expect to study the possibility of and prepare for the battery business in 1H/2022**

Program 2

Synergy Integration Training Program 2022



Program 2: Synergy Integration Training Program 2022

Program Description

The Synergy Integration Training Program is a corporate wide training program that aggregates of a number of trainings modules under the two main themes: (1) Technology & Digitalization Trainings for Synergy, and (2) Change Management Training & I-Spark E-learning, in a variety of format, including in person workshops, interactive class discussion & lecturing, and the use of knowledge management platform. The Synergy Integration Training Program is constantly added/updated training module into the program, for example, in 2022, the new ACT SPIRIT (GPSC culture and desirable behavior) and leadership transformation.

1

Technology & Digitalization Trainings for Synergy

- G Infinite Power Workshop & Training
- Digitization (KEY Dashboard)
- Synergy Application
- 24M Knowledge management

2

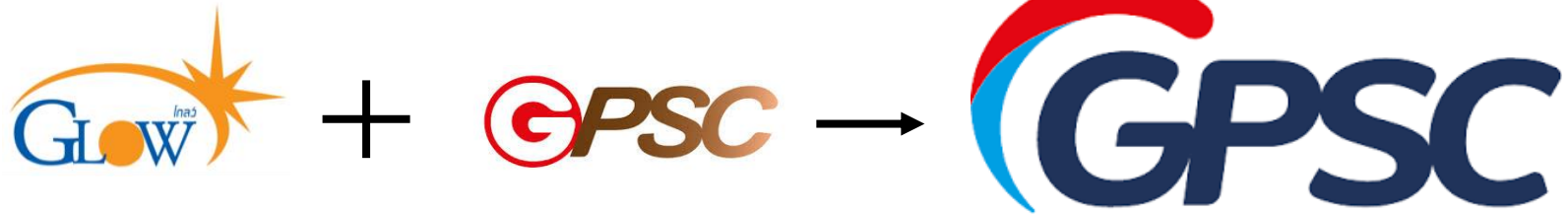
Change Management Training & I-Spark E-learning

- Leadership transformation
- ACT SPIRIT
- Change Leadership Boot Camp
- ACT Ambassadors (Leader as Role Model)
- I-Spark E-Learning (Adaption Employee Mindset)
- IMO E-News
- GIP (G Infinite Power) Day

Program 2: Synergy Integration Training Program

Objective

The aim of Synergy Integration Training Program is to seamlessly unify GPSC and Glow, as well as to develop digital savvy employees and capable leaders, both of which are considered as means to achieve the business goals (the 4S) while increase revenue and reduce cost (see p. 13 SYNERGY & INTEGRATION Strategy for more details). In 2020, GPSC merged with Glow. Such merger and acquisition brought about the issues of infrastructure cultural and management unity.



GPSC and GLOW merger and acquisition in 2020

% of FTEs Participating in the Program

100% (1,128 of 1,128 employees).

Program 2: Synergy Integration Training Program

Quantitative impact of business benefits

Operational Excellence:

- Grid/ transmission/ steam pipeline system has been interconnected
- Increase in electricity generation capacity since the program first launched
- Increase in electricity delivery since the program first launched

Revenue Generation:

- 701 THB million generated, as a results of various improvement of operational activities (expected quantitative business benefit is 1.6 THB billion in 2024)

Business Continuity & Culture:

- GPSC can still work during the COVID-19 outbreaks via digitalization
- Best practices on work being shared organization wide
- Bring and consolidate knowledge into GPSC Group

Cost Saving:

- 89% cost saving from maintenance productivity optimization & Change from time based to activities based
- 8% reduce total cost of power plant, indirect spend and coal management
- 3% optimize financing costs, insurance and working capital management
- 633.12 THB million of direct and indirect cost saving
- 1.03 million MWh energy loss reduced
- GPSC projects were successful without any requirement of external consultants (reduce external cost)
- Energy and fuel consumption reduction
- Machine efficiency improvement, increase machine lifetime

SYNERGY & INTEGRATION Strategy



END

Set up Target

Set up concrete synergy target THB 2,300 million within 2025



Set up process structure to achieve goal

WAY

SYNERGY & INTEGRATION STRUCTURE

Integration Management Leader

Consultant

Integration Management Office (IMO)

Deal
Closing &
Day 1
Readiness

Synergy
Capture
Team
Structure

Organizati
on &
Change
Managem
ent

**Key
Success:**
Experience
Knowledge
Knowhow

Specify enablement to support achievement

MEAN

Manpower
Knowledge & Skill

Change
Leadership

New
Culture

Communication
Tools

IT
Technology

**Focused
Areas:**



Plant Operation



Operation center
of excellence



Integration &
Engineering



Procurement



Commercial



Corporate
Functions



IT

Technology & Digitalization Trainings for Synergy

G Infinite Power
Workshop & Training

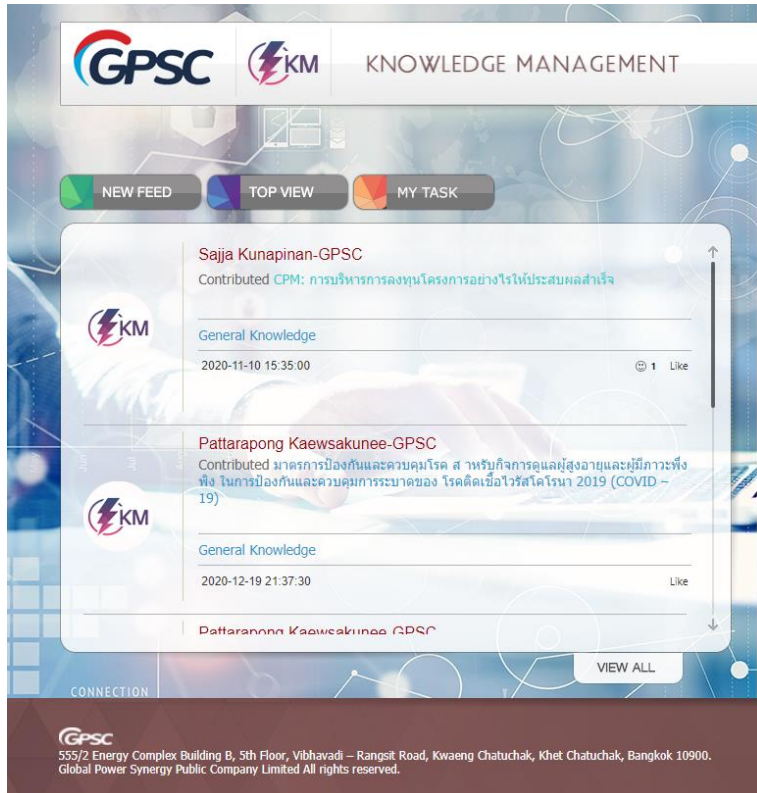
Digitization
(KEY Dashboard)

Synergy
Application

24M Knowledge
management





Knowledge Management Program - 24M



Energy Storage System Technology Knowledge Base:

Under the New S-Curve strategic goal, GPSC has developed a knowledge base to record tech know-how obtained from 24M Technologies from the US, with which GPSC has been collaboratively researching and developing ESSs, and to disseminate the knowledge through an online system. Topics of note include the future of battery technologies, the knowledge and experience of 24 M, the market of battery technology, the expansion of battery technology production, and lessons learned from battery R&D over the past ten years.

Knowledge Management Program



KNOWLEDGE MANAGEMENT



> KNOWLEDGE MANAGEMENT

Cycle of Concentration of Cooling Tower

Close

Title	Cycle of concentration of Cooling Tower
Executive Summary	Cycle of concentration (COC) : คือความเข้มข้นของสารละลายของน้ำในระบบ Cooling เพิ่มขึ้นเป็นจำนวนเท่า เมื่อเทียบกับสารละลายจากน้ำเดิม โดยใช้ Silica ในการคำนวณ เช่น silica ในน้ำ make up = 12.5 ppm และ silica ในน้ำ cooling = 45.1 ppm Cycle = 45.1 ppm/12.5 ppm = 3.61 *Langelier Saturated Index : การทำนายความเสี่ยงของ calcium carbonate ในน้ำ ซึ่ง LSI เป็นการคำนวณหาค่า การอิ่มตัวของ calcium carbonate
Division	ฝ่ายทรัพยากรบุคคลและศักยภาพองค์กร HRV
Department	
Section	
Company	GPSC
Author	
External Author	
Year	2017
Business Line	
Business Unit	
Document Content Type	Multimedia
Hastags	
CoP	
TPM Pillar	
Knowledge Status	Published to KM GPSC
Attachments	Cycle of Cooling Tower.jpg
Version: 7.0 Created at 11/20/2017 3:29 PM by Yutthasak Dissayapong-GPSC Last modified at 11/20/2017 3:29 PM by Workflow on behalf of Yutthasak Dissayapong-GPSC	

Close



KNOWLEDGE MANAGEMENT

> KNOWLEDGE MANAGEMENT

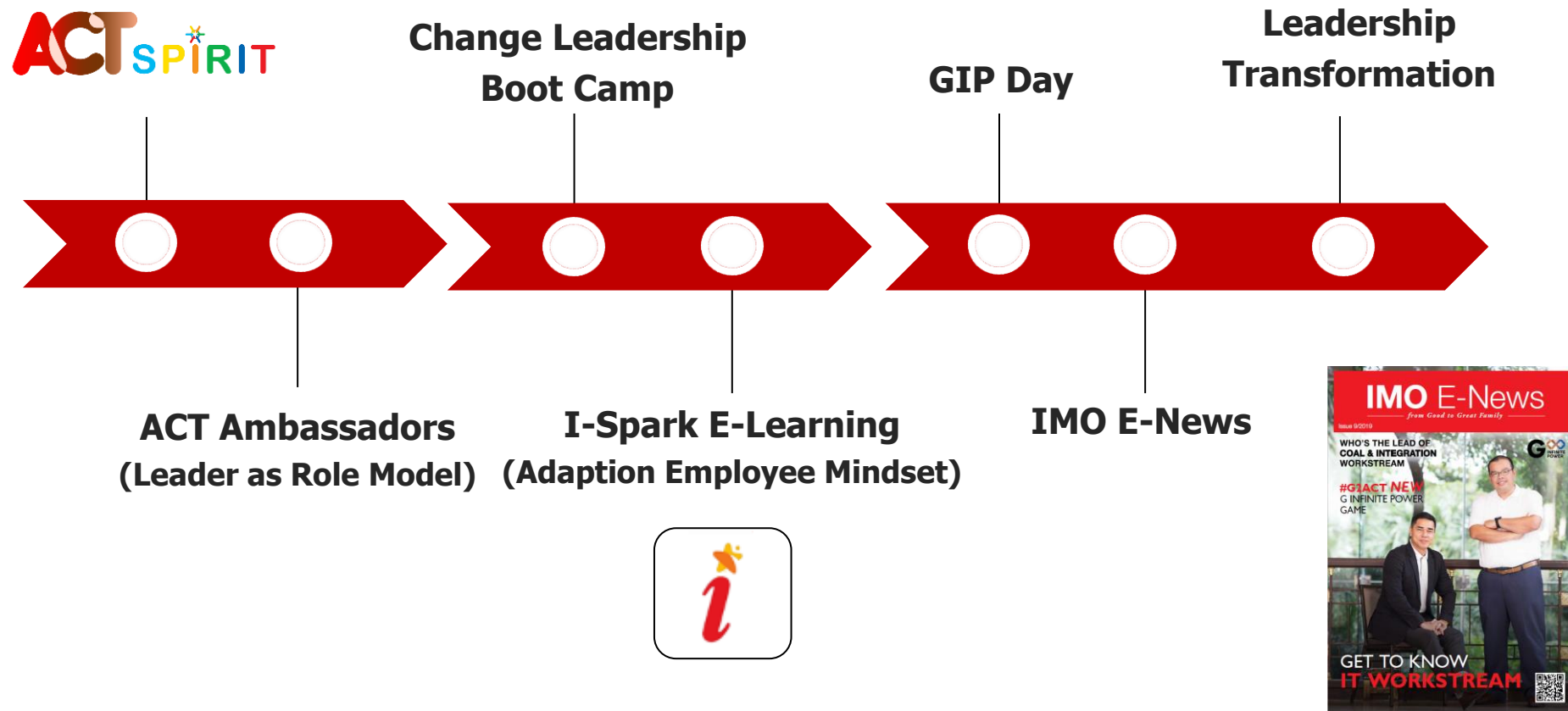
Advantages of natural gas turbines

Close

Title	ข้อดี ของโรงไฟฟ้าพลังกังหันก๊าซ
Executive Summary	ข้อดี ของโรงไฟฟ้าพลังกังหันก๊าซ 1.ใช้เวลาก่อสร้างและติดตั้งน้อยกว่าโรงไฟฟ้าประเภทอื่นๆ 2.สามารถเดินเครื่องจ่ายกระแสไฟฟ้าได้รวดเร็ว ใช้เวลาประมาณ 15 นาที 3.เนื่องจากใช้เชื้อเพลิงที่มีคุณภาพดี ทำให้ไอเสียที่ระบายออกทางปล่องของโรงไฟฟ้าอยู่ใน เกณฑ์มาตรฐาน 4.มีระดับเสียงดังน้อยกว่า 5.มีค่าใช้จ่ายเชื้อเพลิงสำรอง(Neural Gas)อย่างเพียงพอ 6.สามารถนำไอเสียจากโรงไฟฟ้าไปผลิตก๊าซไปผลิตไฟฟ้าใน ระบบไฟฟ้ากังหันไอน้ำได้
Division	ศูนย์การผลิต OPV
Department	ส่วนการผลิตไฟฟ้าสำหรับ OSN
Section	
Company	GPSC
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Document Content Type	Document
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Knowledge Status	Published to KM GPSC
Version: 13.0 Created at 7/21/2019 9:08 PM by Phitaya Promvung-GPSC Last modified at 8/7/2019 2:04 PM by Workflow	

Close

Change Management Training & I-Spark E-learning



ACT SPIRIT



GPSC prioritizes and actively fosters the ACT SPIRIT corporate culture to create a collaborative and unified workplace environment. In 2022, the key behaviors under ACT SPIRIT were revised to align with GPSC's vision, missions, and strategic goals based on the perspectives of executives and employees obtained through interviews and workshops along with national and international research data. The new key behaviors comprise Ambition, Commitment, and Trust.

Throughout 2022, GPSC publicized the revised key behaviors across the organization through four participatory and accessible activities: ACT Ambassador, Happy ACT the Series, ACT SPIRIT in Action, and You're My ACT SPIRIT Idol, with the awareness target of 70% of the total personnel.

ACT Ambassador:



GPSC created PR materials to publicize the key behaviors of ACT SPIRIT, including interviews of executives who exemplified the behaviors – ACT Ambassadors, published in ACT SPIRIT in GIP Magazine, describing the significance of a change in corporate culture, the revised key behaviors, as well as the connection between ACT SPIRIT and the operation within the organization.

Happy ACT the Series



For a period of five months, GPSC created monthly content on proper practice for working from home, such as how to organize an effective virtual meeting by setting out a clear agenda, how to take care of physical and mental health, and how to arrange the room to create a conducive work environment. The content also incorporated the corporate culture and the revised key behaviors in order boost awareness and enable employees to apply them in the new normal era.

ACT SPIRIT in Action:



GPSC created materials promoting the corporate culture tailored to days of significance in Thailand, such as Songkran, National Science Day, and gave employees an opportunity to better understand the corporate culture through various activities, such as the pairing of key behaviors and the ACT SPIRIT corporate culture.

You're My ACT SPIRIT Idol:



GPSC gave employees an opportunity to offer compliments to other employees who exhibited behaviors aligning with the corporate culture and the revised key behaviors. The goal was to develop ACT SPIRIT role models. Over 350 messages were sent.

Leadership Transformation



Leadership Development through the Leadership Transformation Project:

GPSC strived to enhance the leadership of division managers and vice presidents through lectures and workshops as part of the Leadership Transformation Project, placing emphasis on fostering the ability to formulate strategic plans that will give GPSC a competitive advantage; their leadership amid global situations characterized by volatility, uncertainty, complexity, and ambiguity; as well as the development of teams that took diversity and equity into consideration. The project was well received, with a satisfaction score among the participants of 3.6 out of 5.

GIP Day: Key Principles for Success



Experience

Knowledge

Knowhow

- Apply synergy idea into the other areas
- Create new synergy
- Improve existing initiatives
- Less dependent to 3rd parties
- Expand services withing the group



G-Infinite Power (GIP): The project that is responsible in measuring incremental benefits from synergy initiatives after GPSC & GLOW M&A including EBITDA increasing from CAPEX avoidance and other factors impacting net profit. The benefits are compared with the baseline/business plan before merging.

I-Spark E-learning



- Objective :
- To build GPSC Group Strategy
 - Overall G Infinite Power and update status
 - Coaching Session
 - Deployed KPI Target



THANK YOU

