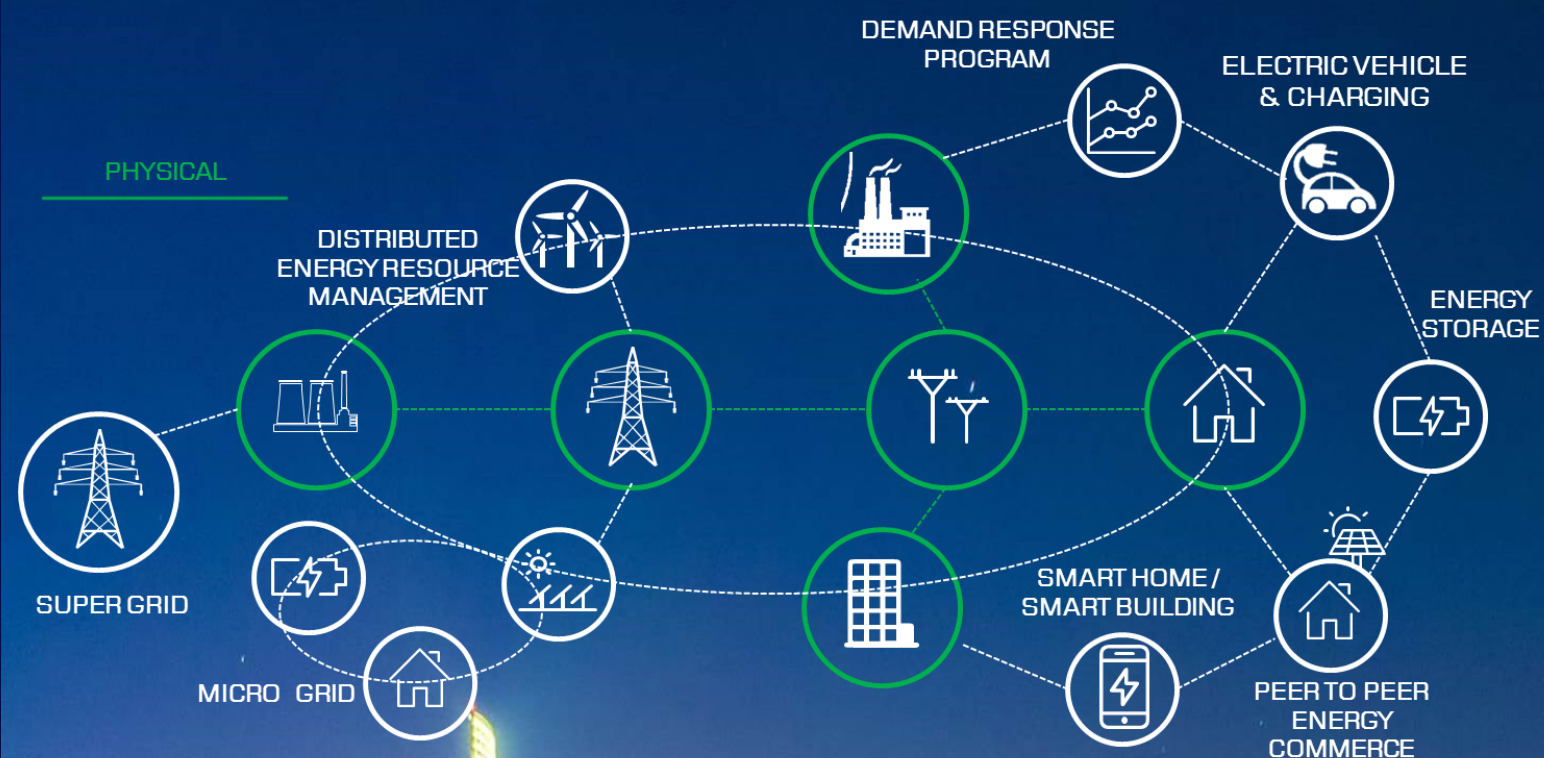




การไฟฟ้าส่วนภูมิภาค
PROVINCIAL ELECTRICITY AUTHORITY

PEA Digital Operation Plan 2018-2022

(2st Revised edition, 2020)



Changes in policies, laws, regulations that affect operations



Cybersecurity Act, B.E. 2562 (2019)

Given on the 24th Day of May B.E. 2562

Issues related to PEA digital action plan

- Require important information infrastructure and government agencies to have standards and guidelines for cyber security.
- There is a threat alert and a response plan to restore the system to work as normal.
- There is collaboration and coordination with the Office of Cyber Security.



Personal Data Protection Act, B.E. 2562 (2019)

Given on the 24th Day of May B.E. 2562

Issues related to PEA digital action plan

• Cannot disclose personal information If not consent

Requests for consent must be made explicitly. In books or made through electronic systems, except by the condition that consent cannot be obtained by the said method.

• Maintain data security

Not to be changed Or access information by people not involved in the information.

• Have the right to withdraw consent

The data owner has the right to withdraw consent. Request to delete or destroy data at any time If it is the wish of the data owner.



Digital Administration and Services Act B.E. 2562

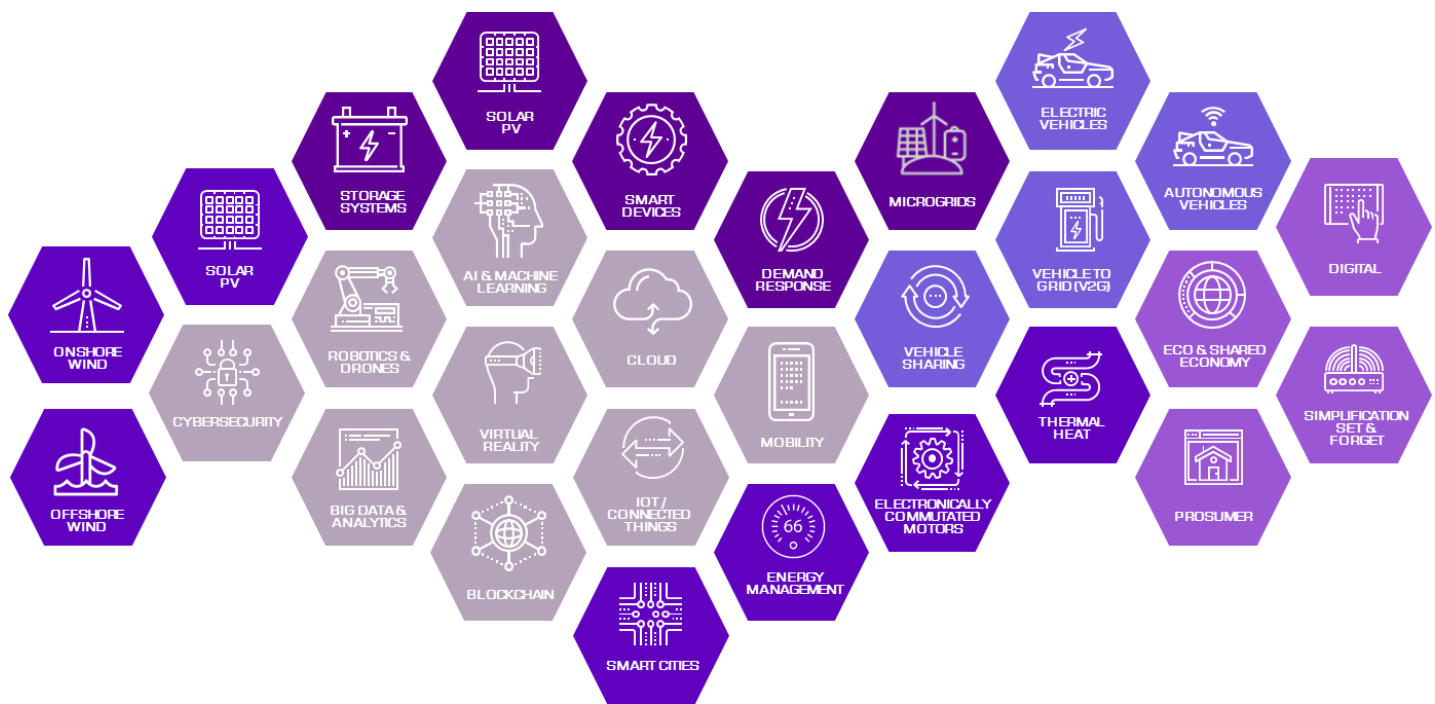
Given on the 23th Day of May B.E. 2562

Issues related to PEA digital action plan

- Have government agencies create digital information and services (Digitization)
- Have government agencies disclose digital government data (Open Government Data)
- Allow government agencies to exchange and link data integration between each other and have a central data exchange center. Support linking digital services Providing total public service.

Electrical industry direction

The global electric power industry today has changed both the structure and business operations. Due to the birth of a new player in energy, liberalization to increase competition in the electricity business market, higher expectations of consumers both the stability of the electrical system network and the various customer services.



SIX GAME CHANGERS TRANSFORMING THE TRADITIONAL BUSINESS MODEL

1. **Renewables Ramp Up** The need to decarbonize the power model is pushing renewables deployment – particularly Wind and Solar – to absorb 2/3 of future power gen investments.
2. **Distributed Energy Resources Proliferation** Decreasing costs improves the case for rooftop PV, batteries and micro-grids driving to a more decentralized power model.
3. **Exponential Transport Electrification** Paradigm shift: from owned oil fueled cars to electric and potentially autonomous and shared vehicles. Opportunity to offset demand slowdown while driving environmental benefits and engage consumers.
4. **Energy Consumer Activism** New values beyond price - such as eco concerns. Clients are adopting a more active role increasing self supply and optimizing consumption. Digital interactions are the new norm.
5. **Energy-Efficiency Innovation** Energy Consumption has decoupled from Economic Growth driven by Energy Efficiency challenging global demand growth.
6. **Instant Intelligence** Digital plays a central role to transform both the power system and Utilities, enabling new business and operating models to generate additional revenue streams, and take efficiency to the next level.



Digital Technology Direction

For the year 2019, the direction of digital technology (Accenture technology vision 2019) is as follows

TREND

1

DARQ Power

Understanding the DNA of DARQ

New technologies are catalysts for change, offering businesses extraordinary new capabilities. Distributed ledger technology, artificial intelligence, extended reality, and quantum computing will be the next set of new technologies to spark a step change, letting businesses reimagine entire industries.

TREND

2

Get to Know Me

Unlock unique customers and unique opportunities

Technology-driven interactions are creating an expanding technology identity for every consumer. This living foundation of knowledge will be key to not only understanding the next generation of consumers, but also to delivering rich, individualized, experience-based relationships in the post-digital age.

TREND

3

Human+Worker

Change the workplace or hinder the workforce

Workforces are becoming human+ each individual is empowered by their skillsets and knowledge plus a new, constantly growing set of capabilities made possible through technology. Now, companies must adapt the technology strategies that successfully created this next generation workforce to support a new way of working in the post-digital age.

TREND

4

Secure US to Secure ME

Enterprises are not victims, they're vectors

While ecosystem-driven business depends on interconnectedness, those connections increase companies' exposures to risks. Leading businesses are recognizing that just as they already collaborate with entire ecosystems to deliver best-in-class products, services, and experiences, it's time security joins that effort as well.

TREND

5

MyMarkets

Meet consumers' needs at the speed of now

Technology is creating a world of intensely customized and on-demand experiences, and companies must reinvent their organizations to find and capture those opportunities as they come. That means viewing each opportunity as if it's an individual market-a momentary market.

PEA Digital Utility



2562



Driving Value Growth in the Evolving
Utility Landscape



2565-2566



Transformation to the Era
of The Digital Utility



2570 and onwards



To be a Regional leader

PEA strategic position in 2022-2023 is "Transformation to the Era of The Digital Utility". And the vision of the Governor is "Aiming for an excellent organization in electric power business, Meet the expectations of customers, Create value to society and the environment With digital technology" with the KEEN14 strategy, focusing on the development of various processes by applying technology and innovation to enhance operational efficiency by asset management and new businesses development.

PEA Digital Transformation Strategy

PEA Digital roadmap is developed transformation of PEA's core capability into following Digital strategy:



	1. Digital Energy Operation - Creating digitally enabled grid and maximizing the convergence of power and information for grid reliability and operational excellence.
	2. Connected Customer - Engaging the digital consumer in the new connected world. Designing a phenomenal customer experience and empowering digital trust.
	3. Next Generation Enterprise - Digitizing enterprise capability to become strategic partner with business.
	4. Workforce of the Future - Inventing workforce for future digital operations and new talent marketplaces to drive the most profound business transformation
	5. Digital Platform - Building a robust ecosystem platform that beyond just a technology platform with flexible and agile delivery to scale at speed.

PEA Digital Roadmap Development Principle

To achieve strategic positioning to be Digital Utility within 2565, PEA need to consider its digital roadmap to conduct along with the principle "At Speed"- doing quick, delivering fast outcomes and "At Scale"- transforming across PEA. However, transformation is not about the responsible of one single workstream, every PEA workstream will be involved and transformed. PEA Digital roadmap will be developed under "Think Big, Smart Small, Build Fast, and Scale for Value".



Develop rapidly For instant results



Expand the scope of change throughout the organization.

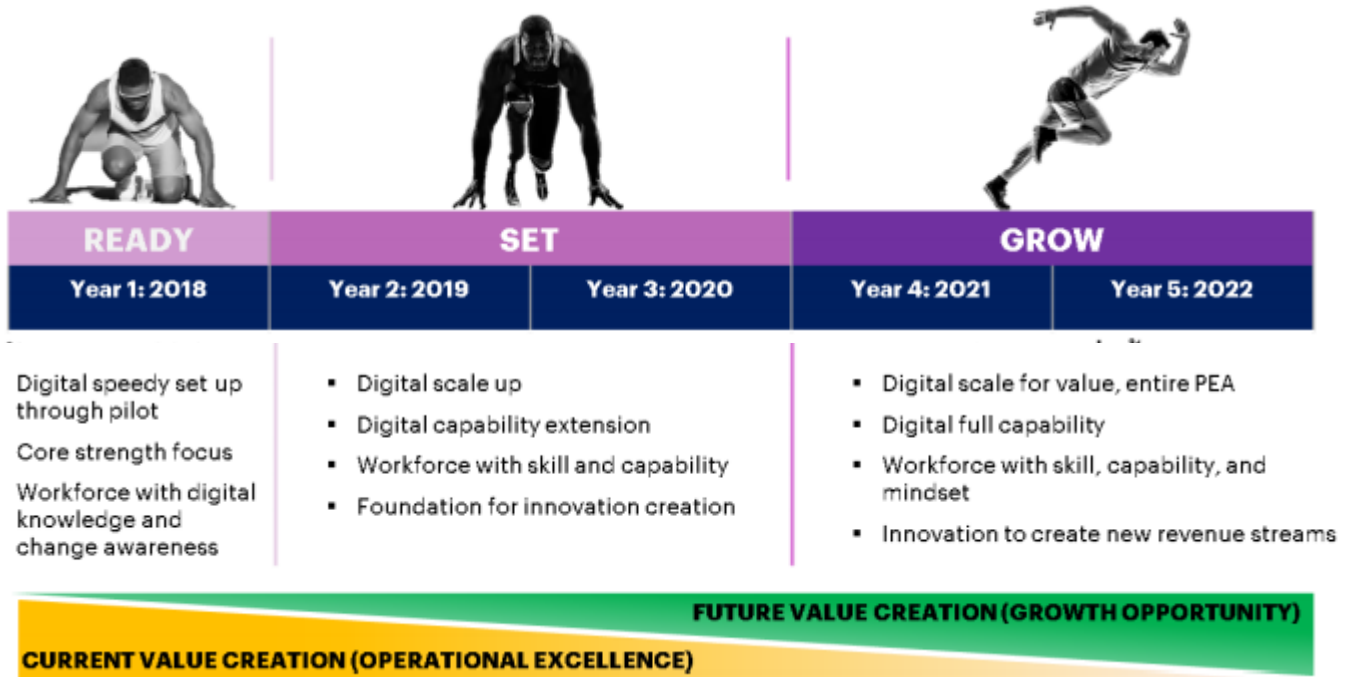


Think Big – Analyze and design overall picture of PEA capabilities to be able to define target stage of development and to be able to integrate processes, workforce, and related technology. The outcome is "Think Big" is to be able to define broader context and value in initiative plan.

Start Small – Implement initiative plan to limited users by conducting pilot to deliver value quickly and to create go-forward plan.

Build Fast – Extend capabilities from pilot outcome to larger user and leverage current technology investment.

Scale for Value – Continue expansion of capabilities across target communities



PEA Digital Roadmap will create value to PEA as follow:

1. Current Value – In phase “Ready” and “Set”, digital technology will be used to increase productivity and effectiveness of PEA operation (Operational Excellence).
2. Future Value – After PEA has accomplished operational excellence and innovative workforce, digital technology will enhance growth opportunity in the phase “Grow”.

Key Success Factors

PEA Digital Transformation Program Management

LEADERSHIP



Clear ambition and passion for digital across all levels and effective decision making

OPERATING MODEL



Clarity of how digital capabilities are organized across the organization to drive speed, agility and synergy

PARTNERSHIP



Defined ecosystem of digital partners to rapidly achieve the ambition

Change Management & Training

CULTURE



Digital mindset and new ways of working at all levels of the organization

CAPABILITY



New capability to enable core and disruptive business models that exploit new sources of value

Benefits of PEA Digital Roadmap



Public sector

- ◆ Improving State Enterprises performance to be faster, more convenient and more transparent.
- ◆ Improving access ability to reliable and updated data, connecting and encouraging more energy information sharing between government agencies.
- ◆ Improving digital skills and capabilities of government officers and related government agencies.
- ◆ Building stable and secure infrastructure in Smart grid and Digital Platform



Customers / citizen

- ◆ Improving stability of energy distribution system by implementing technology into management.
- ◆ Increasing service channels and Improving customers service by implementing technology into process.
- ◆ Building excellent customers experience with PEA which leading to earning customers trust and good brand image.



PEA Enterprise / People

- ◆ Increasing efficiency in working, energy network system management planning and services by implementing technology into the processes together with building in-depth data analysis capability.
- ◆ Connecting and strengthening cooperation between functions.
- ◆ Building a culture of innovation and new sources of income for PEA in the future.
- ◆ Improving the quality of PEA people's life by implementing technology in working process that will increase efficiency, productivity and security.



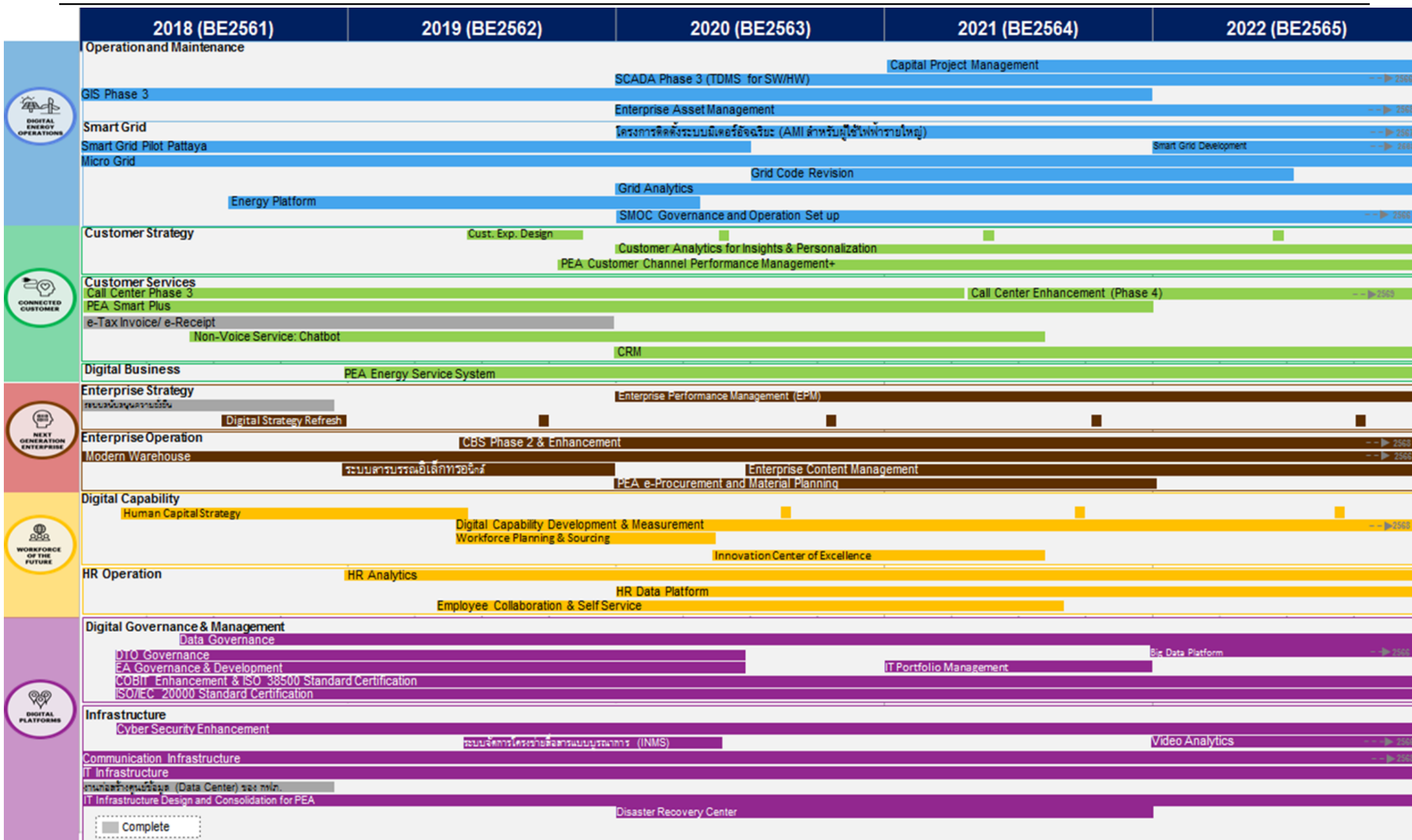
Community / Society and Environment

- ◆ Improving access ability to energy information and supporting government policy in encouraging people and community in electricity usage management.
- ◆ Improving the quality of people's life with better access ability to information from State Enterprises.







Partners

- ◆ Improving business process with partners to be more transparent and faster by effective content management.

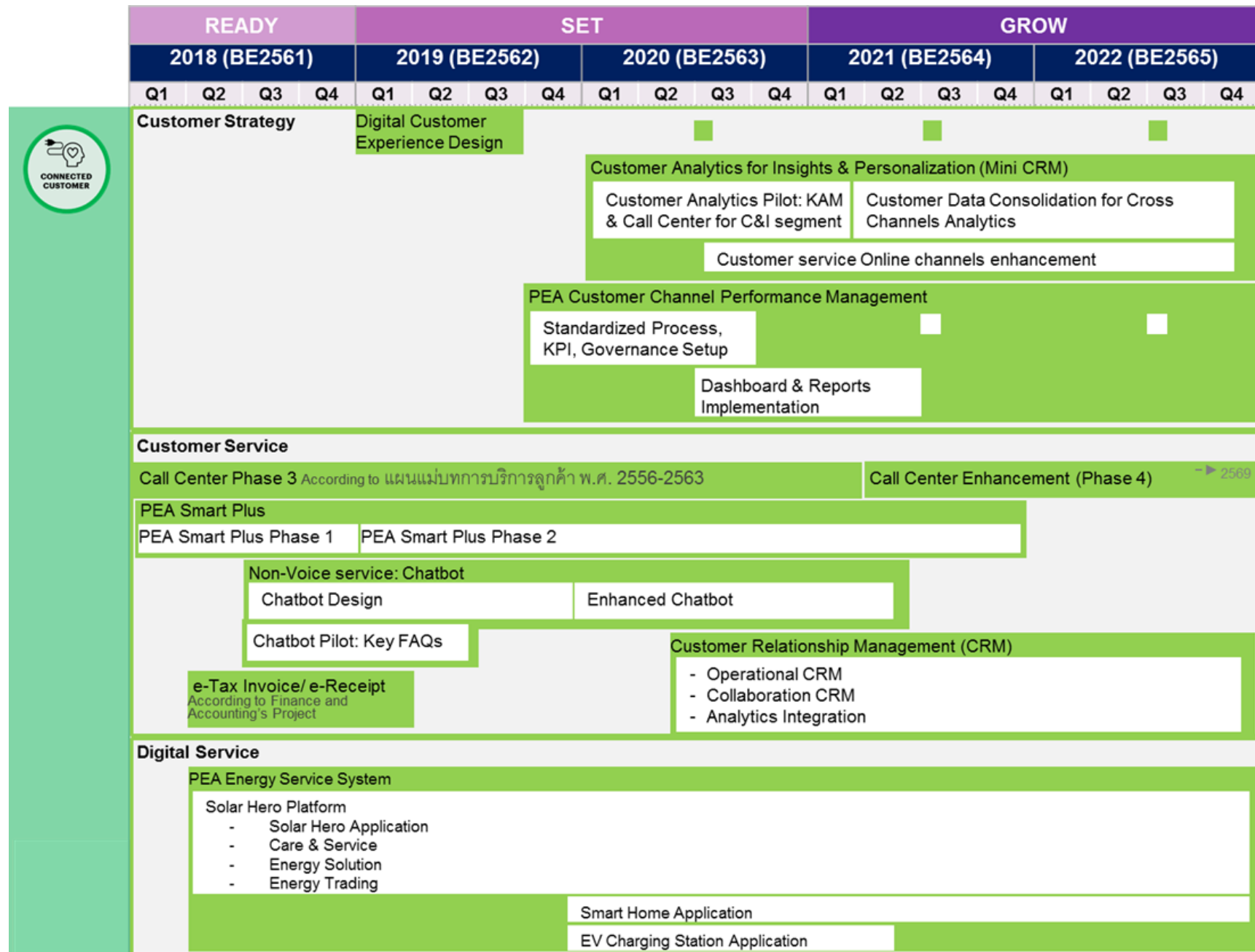


PEA Digital Action Plan 2018-2022 52 projects




	READY				SET								GROW							
	2018 (BE2561)				2019 (BE2562)				2020 (BE2563)				2021 (BE2564)				2022 (BE2565)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Operation and Maintenance												Capital Project Management							
													CPM Pilot (Assessment & Tool)				CPM Roll-out			
													SCADA Phase 3 (TDMS for SW/HW)							
	GIS Phase 3 according to PEA Digital Plan 2561																			
													Enterprise Asset Management							
													People – Process – Technology Changes for ISO 55000 accreditation							
													Condition Based Risk Management (CBRM) & Sensors							
													Model and Apps Development Pilot for Power Transformer							
													Enterprise Asset Management (EAM)							
	Smart Grid												โครงการติดตั้งระบบมิเตอร์อัจฉริยะ (AMI สำหรับผู้ใช้ไฟฟ้ารายใหญ่)							
	Smart Grid Pilot Pattaya																			
	Micro Grid																			
													Smart Grid Development							
													Demand Response Management Pilot				Demand Response Management Roll-out			
																	Smart Meter Installation (739,000 Meters)			
																	MDMS Consolidation			
													Grid Impact Assessment & Grid Code revision (e.g., for EV Charging, Solar rooftop)							
													Grid Analytics							
													Grid Analytics Pilot				Grid Analytics Extension			
	Energy Trading Platform																			
	National Energy Trading Platform (NETP)																			
													SMOC Governance and Operation Set up							

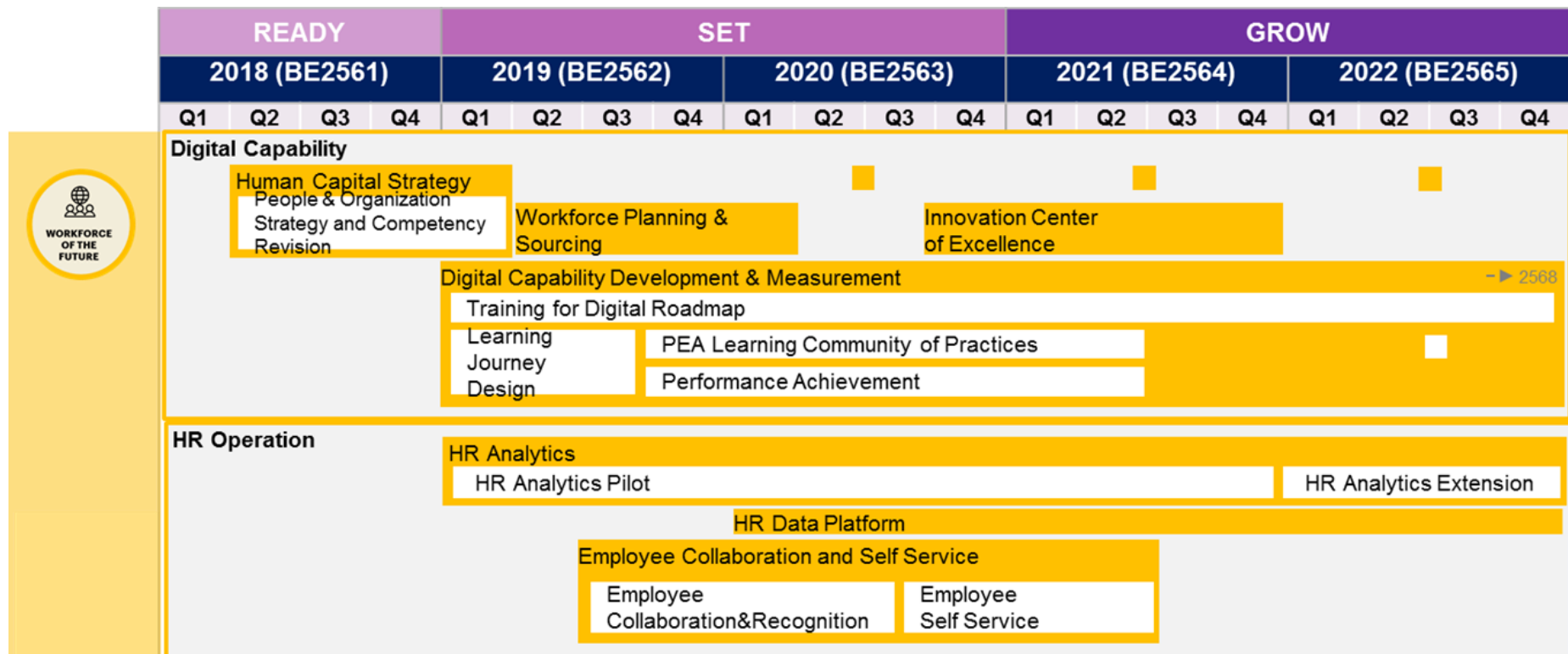
Digital Energy Operation



Connected Customer

	READY				SET								GROW											
	2018 (BE2561)				2019 (BE2562)				2020 (BE2563)				2021 (BE2564)				2022 (BE2565)							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
	Enterprise Strategy																							
													Enterprise Performance Management (EPM)											
													EPM Pilot (Report for BSC /Risk/Key Data)				EPM Roll-Out							
	ระบบสนับสนุนความยั่งยืน																							
	Digital Strategy Refresh																							
Enterprise Operation																								
												CBS Phase 2 & Enhancement												
												Technical Upgrade <small>10 existing modules</small>				Post Implementation & Assessment				CBS2 Enhancement				
																				→ 2568				
Modern Warehouse																								
Pilot					Roll-Out															→ 2566				
					จัดซื้อซอฟต์แวร์																			
					ระบบสารบรรณอิเล็กทรอนิกส์																			
												Enterprise Content Management (ECM)												
												ECM Assessment & Pilot								ECM Roll-Out				
												PEA e-Procurement and Material Planning												

Next Generation Enterprise



Workforce of the Future



READY				SET								GROW							
2018 (BE2561)				2019 (BE2562)				2020 (BE2563)				2021 (BE2564)				2022 (BE2565)			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Digital Governance & Management																			
Data Governance																Big Data Platform			
																IT-OT Convergence			
																Data Analytics Platform			
												IT Portfolio Management							
DTO Governance																			
EA Governance & Development																			
EA Tool																			
EA Governance & Development																			
COBIT Enhancement & ISO 38500 Standard Certification																			
COBIT Enhancement																			
ISO 38500 Standard Certification																			
ISO/IEC 20000 Standard Certification																			
Infrastructure																			
Cyber Security Enhancement																			
SOC Improvement for IT-OT																			
ISO 27001 Extension & Certification																			
Security Awareness Programme																			
Procurement and replacement cyber security equipment																			
ระบบจัดการโครงข่ายสื่อสารแบบบูรณาการ (INMS)																Video Analytics - ▶ 2566			
Communication Infrastructure (14 Projects)																			
Wide Area Network (WAN) - 4 projects																			
Local Area Network (LAN) - 1 project																			
Unifi Communication																			
Telephony & Surveillance - 6 projects																			
งานจัดหาระบบบริหารจัดการโครงข่าย (NMS) for DWDM																			
ระบบตรวจสอบสายเคเบิลใยแก้วนำแสงระยะไกล (Remote Fiber Monitoring System : RFMS)																			
IT Infrastructure (2 Projects)																			
งานจัดหา/ทดแทนเครื่องคอมพิวเตอร์และอุปกรณ์																			
Data Center: e-collaboration																			
งานก่อสร้างศูนย์ข้อมูล (Data Center) ของ กฟภ.																			
IT Infrastructure Design and Consolidation for PEA																			
Disaster Recovery Center																			
Digital Platform																			





PEA Digital Transformation : DX

Under the Digital Operation Plan of PEA, 2018-2022

(2nd Revised edition, 2020)

By

ICT Planning Department