



Energy Regulatory Commission
and Office of the Energy Regulatory Commission

ANNUAL REPORT 2021





Annual Report 2021

Energy Regulatory Commission
and Office of the Energy Regulatory Commission



Produced by :
Office of the Energy Regulatory Commission
319, 19th-20th Floor, Chamchuri Square Bld., Phayathai Rd.,
Pathumwan, Bangkok 10330, Thailand



ISBN : 978-616-92702-5-6
Published : 2022
Edition : 1



Call Center : 1204 | Tel : 0 2207 3599
Fax : 0 2207 3506, 0 2207 3502



e-mail : support@erc.or.th



www.erc.or.th



Youtube: OERCTHAI



Twitter: OERC_Thailand



Facebook: สำนักงาน กกพ.

CONTENTS

05 Message from Chairman
of the Energy Regulatory Commission

06 Message from Secretary General
of the Office of the Energy Regulatory
Commission

08 General Information

08 Energy Regulatory Commission
and Authority & Duties

10 Vision, Mission and Core Values

11 Action Plan for Energy Industry
Regulation, Phase 4 (2020-2022)

14 Organizational Structure
of the Office of the Energy
Regulatory Commission

16 Production and Distribution of
Electricity and Natural Gas
by Licensees in 2021

20 Energy Industry Regulation
Performances
in Fiscal Year 2021

40 Power Development Fund
Performances
in Fiscal Year 2021

43 Power Development Fund
Management in 2021

56 Operational Plan of the Office of
the Energy Regulatory Commission
in Fiscal Year 2022

68 Operational Plan of
the Power Development Fund
in Fiscal Year 2022

70 Abbreviations



Message from Chairman of the Energy Regulatory Commission

Mr. Samerjai Suksumek



The Energy Regulatory Commission (ERC), together with the Office of the Energy Regulatory Commission (OERC), in our capacity as the Regulator of the electricity and natural gas industry in Thailand in accordance with the mandated tasks under the Energy Industry Act B.E. 2550 (2007), has set the direction and targets of energy industry regulation in the Action Plan for Energy Industry Regulation, Phase 4 (2020-2022), so as to achieve our Vision, “Regulate Energy Industry to Attain Sustainable Development and Promote Proper and Fair Competition,” which is in line with Thailand’s 20-Year National Strategy and the Master Plan under the National Strategy, the National Energy Reform Plan and the 12th National Economic and Social Development Plan, including energy policies of the government. Importance has been placed on reinforcement of the national energy security, promotion of competition in the energy industry and “green” energy industry by promoting the use of alternative Clean Energy and developing energy-related infrastructure to accommodate changing energy business models in accordance with the disruptive technology development.

In Fiscal Year 2021, there were many challenges in mobilizing Thailand’s energy sector—climate change impacts that are globally recognized; the setting of zero emission of carbon dioxide or the Carbon Neutral target; and energy price volatility with a rising trend, which affected people’s living and the costs of the business sector amidst the stagnant economic conditions due to several waves of the Coronavirus Disease (COVID-19) outbreaks. As a result, the ERC stressed the importance of the energy sector administration and energy procurement cost management.

The ERC managed the costs of energy procurement to assist 23.70 million electricity consumers, which accounts for 97% of electricity consumers nationwide. In addition, a measure was issued on exemption of Minimum Charge to assist the business sector, non-profit organizations and water pumping for agricultural purposes, by exploiting around 28,526.78 million Baht to manage electricity tariffs.

The variable electricity tariff (F_v) rate was also stabilized so that consumers still paid for their electricity bills at the rate of 3.61 Baht/unit (exclusive of VAT) throughout the year 2021; this was in support of the government policy to mitigate impacts of the COVID-19 outbreak. Moreover, the spending of Power Development Fund money in designated areas was accelerated, aiming to create employment to boost grassroots economy and to help solve public health problems via undertakings of COVID-19 protection, control or treatment.

As for the direction of major tasks in Fiscal Year 2022, the ERC is prepared to push ahead with the promotion of competition in the natural gas industry, Phase 2, to attain tangible outcomes and to develop the energy industry regulatory framework to accommodate competition promotion in the electricity industry and development of renewable energy trading market. Importance will also be given to the promotion of participation of all stakeholders in upgrading the implementation of energy industry regulation so as to attain transparency and accountability.

In conclusion, the achievements throughout the Fiscal Year 2021 would not have been possible if without the great collaboration from both internal and external agencies. Therefore, on behalf of the ERC, I wish to thank all agencies concerned, the management and staff members of the OERC for concerted efforts to support the execution of our mission so as to upgrade the energy industry and to mobilize secured and sustainable economy and society of the country.

A handwritten signature in blue ink, consisting of a stylized 'S' followed by a long horizontal line.

Mr. Samerjai Suksumek
Chairman of the Energy Regulatory Commission



**Message from
Secretary General
of the Office of the Energy Regulatory Commission**

Mr. Khomgrich Tantravanich

The Office of the Energy Regulatory Commission (OERC) has the status of a juristic person, supporting the ERC work execution so as to achieve the objectives under the Action Plan for Energy Industry Regulation, involving the energy industry regulation, licensing, protection of energy consumers and stakeholders against adverse impacts resulting from energy industry operation as well as other activities in accordance with the government policy and missions prescribed under the Energy Industry Act B.E. 2550 (2007).

In Fiscal Year 2021, mobilizing the energy sector in Thailand had to deal with many challenges under the situations where all over the world recognized the impacts of climate change and deterioration of the ecosystem that each country will have to face. As a result, the international community has given importance and attention to a holistic approach to conservation and management of natural resources and environment. Hence, renewable energy and alternative energy, including creation of balance between energy and food security, tend to be of greater importance. Rules, regulations and agreements pertaining to the environment will be intensified and become more stringent. Development frameworks under major international agreements, e.g. the Sustainable Development Goals and the Paris Agreement, will be translated into action more seriously, and the targets of net-zero emissions, or the move towards Carbon Neutrality, have been set in the next 30-45 years.

Moreover, in Fiscal Year 2021 all over the world still faced the COVID-19 pandemic, which had continually affected life and well-being of Thai people as well. The OERC had taken part in supporting the government in their efforts to mitigate the impacts of COVID-19 outbreaks, by introducing relief measures via electricity bill reduction for 23.70 million power consumers, or 97% of power consumers nationwide, with a total budget of 28,526.78 million Baht, and stabilizing the F_t rate for three billing rounds so that power consumers could pay for their electricity bills at the rate of 3.61 Baht/unit (exclusive of VAT) throughout the year 2021.

With regard to mobilization of low carbon economy and society in accordance with the state policy, the OERC had implemented programs on electricity procurement from renewable energy generation pursuant to the government policy. The focus in this year was on power purchase under the Solar-PV Rooftop Program for the People Sector, classified into the residential group and the

group covering schools, academic institutions, hospitals and water pumping for agricultural purposes, with the objective to encourage people to generate electricity mainly for own use, and power purchase from Community-based Power Plants for Grassroots Economy (Pilot Project) to provide opportunities for the community to have rights and to participate in power plant operations—being co-owners, jointly determining fuel types of which the community can be suppliers and which create optimum benefits to the community, particularly agricultural plants that can be used as fuel for power generation, having power purchase agreements with relevant Distribution Utilities as a guarantee of assured and continued income for at least 20 years, which will enhance economic circulation at the local level which is the grassroots economy of the country. Additionally, the OERC has studied the regulatory framework to be applied to the future power trading market of renewable energy generation, or “RE 100 Package,” to accommodate the government policy in the future, which emphasizes competitiveness enhancement in the industrial sector of Thailand, to be in line with the international targets of carbon dioxide emission reduction.

As for the regulation of energy tariffs in this year, the ERC has established the criteria and electricity tariff structure for the period of 2021–2025, in line with the policy on electricity tariff structure for the corresponding period.

Promotion of competition in the natural gas industry, which is now in Phase 2, has been bolstered in continuation of the pilot project which has trialed the LNG terminal capacity to accommodate operations by multi-Shippers and the ability to maintain the system stability. In this connection, relevant rules and regulations have been revised to open third party access to LNG Receiving Terminal services and to the use of or connection to natural gas network systems; the natural gas price structure has been established, including the framework for LNG procurement and the issuance of licenses for private entrepreneurs with readiness to be natural gas procurement and wholesale business operators (Shippers), pursuant to the rules and covenants in law which intend to create competition on a level playing field; to date, a total of eight Shippers have been granted licenses.

For the regulation of environmental and safety standards of

the electricity generation business, the OERC has focused on post-audits via a digital platform, by developing a digital platform for audit-data collection and online submission of environmental-related reports and also developing the ERC Smart Audit Platform (ERC-SAP) for electricity generation business to link the information about environmental quality with other concerned agencies, e.g. the Office of Natural Resources and Environmental Policy and Planning, the Industrial Estate Authority of Thailand and the Department of Industrial Works, etc., so that the regulation of environmental quality and safety standards of power plants would be accurate and accountable.

Efforts have been made to push ahead with a systematic participatory process, by revising the regulation on hearing and creating understanding of the public and stakeholders with regard to the consideration of electricity generation license issuance, aiming to encourage energy consumers, local communities, the general public and licensees to participate in energy industry regulatory process.

Regarding energy consumer protection, the OERC has still followed up with the Metropolitan Electricity Authority (MEA), the Provincial Electricity Authority (PEA) and the Sattahip Electricity Authority—the Royal Thai Navy Welfare Concession (SEA)—to expedite refunds of the customer guarantee deposit (CGD) to power consumers who have paid the CGD based on the category and capacity of their power meters. So far, CGD refunds have already been made to 8.03 million cases, accounting for 15,327 million Baht, from a total of 24.07 million cases nationwide that are eligible to claim for the CGD refunds, with a total budget of over 33,810 million Baht.

For the Power Development Fund operations under Section 97(3), the OERC has given importance to laying the foundation for the local administration system in continuation of the implementation in Fiscal Year 2020, by reviewing and making revisions to relevant notifications, criteria and manuals to be in line with the Regulation of the ERC on the Power Development Fund for Development or Rehabilitation of Localities Affected by Power Plant Operation B.E. 2563 (2020), effective since 1 October 2020. Moreover, the OERC has recruited new sets of Community Development Committee for Areas Surrounding Power Plants, at the required proportion, in order to decentralize authority relating to approval, modification and cancellation of community projects to the local level. A system for audits and evaluation of performance of projects in designated areas has also been established so that the implementation of projects in designated areas would create sustainable development or rehabilitation of areas surrounding power plants.

In undertaking the operations so far, the OERC has been determined to develop rules and regulations for energy industry regulation to be up to international standards, to continuously upgrade workflows and service provision to be of greater efficiency and transparency to attain confidence and satisfaction of service recipients and stakeholders. In Fiscal Year 2021,

the OERC was rated by the Integrity & Transparency Assessment (ITA) of government agency performance, according to the criteria of the Office of the National Anti-Corruption Commission, and obtained Level A outcome, with a score of 92.55, and the Quality Management System (QMS) was certified according to the ISO 9001: 2015 standard by the Management System Certification Institute (Thailand), Foundation for Industrial Development, Networking Institution of the Ministry of Industry.

In Fiscal Year 2022, the direction of OERC operations will still be based on the concept “Learning from the Past for Further Development – Adjusting the Present – Creating New Future Values,” to mobilize the mission to regulate the electricity and natural gas industry so as to achieve the ERC Vision, “Regulate Energy Industry to Attain Sustainable Development and Promote Proper and Fair Competition.” Emphasis will be placed on the outcomes contributing to the development in the following three aspects: (1) the revision of rules, regulations and standards pertaining to energy industry regulation to accommodate changing models of energy industry development and the competition promotion atmosphere while maintaining energy security; (2) the development of operational procedures and service provision to be efficient on a par with international standards, by giving importance to further expansion of urgent missions already undertaken in Fiscal Year 2021, for instance, the development of digital operating systems and service provision pertaining to licensing, auditing of energy industry operation facilities, Power Development Fund administration and complaint management; and (3) the development of ERC Data Sharing Platform to be used for energy industry regulation and further development of the transparency of the corporate operations.

Lastly, in my capacity as Secretary General of the OERC, I would like to thank all of the OERC management, staff members as well as employees for their determination to carry out duties with the utmost efforts in support of the regulation of the electricity and natural gas industry to be strong and sustainable for optimum benefits of the people who are energy users and of the country as a whole. Despite various challenges faced in the past year relating to government policies; economic, social and political situations; and innovative technologies, including difficulties caused by the spread of COVID-19, the undertakings of OERC missions still met the targets and could promptly respond to the government policies.

.....
Mr. Khomgrich Tantravanich
Secretary General
Office of the Energy Regulatory Commission

General Information

Energy Regulatory Commission and Authority & Duties



Energy Industry
Act of 2007

Under the Energy Industry Act of 2007 (the Act), it is stipulated that there shall be the Energy Regulatory Commission (ERC), comprising seven members, to regulate the electricity and natural gas industry operation to ensure compliance with the objectives of the Act under the policy framework of the government, with the support of the Office of the Energy Regulatory Commission (OERC), which is a state agency, functioning as the secretariat to the ERC in their duty execution.

On 1 October 2018, a new set of the ERC was graciously appointed, pursuant to Section 15 of the Act, having the composition as follows:

- | | | |
|----|-------------------------------|--|
| 1. | Mr. Samerjai Suksumek | Chairman of the Energy Regulatory Commission |
| 2. | Mr. Sudharma Yoonaidharma | Commissioner |
| 3. | Mr. Chanvit Amatamatucharti | Commissioner |
| 4. | Mr. Peerapong Achariyacheevin | Commissioner |
| 5. | Mr. Buntoon Srethasirote | Commissioner |
| 6. | Mr. Sahust Pratuknukul | Commissioner |
| 7. | Mrs. Atchaka Sibunruang | Commissioner |



Under Section 11 of the Act, the ERC has the following authority and duties:

1. regulate energy industry operation to ensure compliance with the objectives of this Act under the policy framework of the government;
2. issue an announcement determining types of licenses for energy industry operation, and propose the issuance of a Royal Decree to determine the categories, capacities and characteristics of energy industry which are exempt from license requirement;
3. impose measures to ensure security and reliability of electricity system;
4. impose the regulations and criteria of the electricity procurement and the issuance of Requests for Proposals for the purchase of electricity as well as monitor the selection procedures to ensure fairness for all parties;
5. provide opinions on the power development plan, the investment plan of the electricity industry, the natural gas procurement plan and the energy network system expansion plan for submission to the Minister under Section 9(3);
6. inspect the energy industry operation of the licensees to ensure efficiency and transparency;
7. issue regulations or announcements and supervise the customer service standards and quality, including measures to protect energy consumers against adverse impacts resulting from energy industry operation;
8. propose the rules and Codes of Conduct of the Commissioners and the competent officials to the Minister under Section 9(10);
9. issue regulations or announcements on policy and guidelines with regard to the holding of interests or conflict of interests of the Commissioners and the competent officials;
10. issue regulations or announcements on criteria, method and conditions of the contributions given to the Fund and the Fund utilization to be in line with the policy of the National Energy Policy Council pursuant to Section 9(8);
11. issue orders and prescribe the administrative fines pursuant to Division 8: Administrative Enforcement;
12. provide opinions or recommendations on energy industry operation to the Minister and the cabinet;
13. promote and support study and research on energy industry operation;
14. promote and encourage the general public to have energy knowledge and awareness;
15. promote and support human resources development in order to increase efficiency in energy industry operation;
16. promote economical and efficient use of energy, renewable energy and energy that has minimal impact on the environment, with due consideration of efficiency of electricity industry operation and balance of natural resources;
17. coordinate with other agencies in relation to the execution of the duties stipulated in this Act; and
18. perform any other task as stipulated in this Act or in other laws as part of the Commission's authority and duties.

Vision, Mission and Core Values

Vision

“Regulate Energy Industry to Attain Sustainable Development and Promote Proper and Fair Competition”

Mission

To regulate energy industry operation to be in compliance with the objectives of the Energy Industry Act of 2007 and the state policy framework.

To promote and support study and research pertaining to development of energy industry regulation and energy industry operation.

To increase knowledge and awareness of the public about management and inspection of energy-related operations.

To develop institutional capability with good governance and enhance human resource potential in energy industry regulation.

Core Values



Trust

Stakeholders can be confident in the ERC's decisions and action.



Reliability and Consistency

The ERC will execute its duty without prejudice and the ERC's decisions will be consistent over time.



Unity

The duty execution will be in harmony with unity, happiness and common goals.



Social Accountability

The operation and decisions will be accountable and open to public.



Transparency and Independence

The operation, decisions, appeal process and complaint-handling will be transparent and in compliance with the law, with high relevance to stakeholders and financial independence.

Action Plan for Energy Industry Regulation Phase 4 (2020-2022)

The Energy Regulatory Commission (ERC) has formulated the Action Plan for Energy Industry Regulation, Phase 4 (2020-2022) to set the direction and framework for duty execution of the Office of the Energy Regulatory Commission (OERC) so as to mobilize energy industry regulation in accordance with the tasks specified under the Energy Industry Act of 2007, taking into consideration the interrelation with the National Strategy, the Master Plan under the National Strategy, the National Energy Reform Plan, the 12th National Economic and Social Development Plan (2017 - 2021) and energy policy of the government, including the Digital Thailand (or the digital development plan for the economy and society).



**20-year
National
Strategy**



Vision:
“Thailand to become a developed country with security, prosperity and sustainability in accordance with the Sufficiency Economy Philosophy”

- National Strategy on Competitiveness Enhancement
- National Strategy on Eco-Friendly Development and Growth
- National Strategy on Public Sector Rebalancing & Development



**Master Plans
under the
National Strategy**



Issue 7: Infrastructure, Logistics and Digital Systems



**National Energy
Reform Plan
(Revised Edition)
and Big Rock**



Energy Management	Electricity & Petroleum	Renewable Energy Promotion	Technology, Innovation & Infrastructure
<ul style="list-style-type: none"> • One Stop Service (OSS) • Standards and audits system for power plants • Standards and evaluation of Power Utilities' services related to electricity network connection 	<ul style="list-style-type: none"> • Promote competition in electricity & natural gas industry • 5-Year Plan for Integrated Infrastructure Development Investment 	<ul style="list-style-type: none"> • Deregulated Solar-PV Rooftops • Deregulated electricity industry using renewable energy in communities & households 	<ul style="list-style-type: none"> • Promotion of electric vehicle utilization • Promotion of ESS Technology Application to energy generated from Solar-PV Rooftops



**12th National
Economic &
Social
Development Plan**



Strengthen the economy and competitiveness on a sustainable basis	Eco-friendly Growth for Sustainable Development	Infrastructure and Logistics System Development	Development of Science, Technologies, Research and Innovations
---	---	---	--



**Energy Policy
of the
Government**



SDGs 7	Digital Thailand	Thailand Integrated Energy Blueprint	Energy Policy
--------	------------------	--------------------------------------	---------------

Action Plan for Energy Industry Regulation Phase 4 (2020-2022)

Objective 1

To promote adequate and secure energy service provision, while ensuring fairness to both energy consumers and licensees

1



2



Objective 2

To protect energy consumers' benefits in terms of both tariffs and service quality

3



4



Objective 4

To promote fair and transparent energy network system service provision, without unjust discrimination



Action Plan for Energy
Industry Regulation,
Phase 4 (2020-2022)

Objective 5

To promote efficient energy industry operation and ensure fairness to both licensees and energy consumers

5



Objective 7

To promote economical and efficient use of energy and resources in the energy industry operation and to raise public awareness of energy saving as well as renewable energy utilization, with due consideration of environmental impact and balance of natural resources

7



9



6



8



Objective 9

To administer a modern and efficient organization and build up human resource capacity to be professional in energy industry regulation

Objective 6

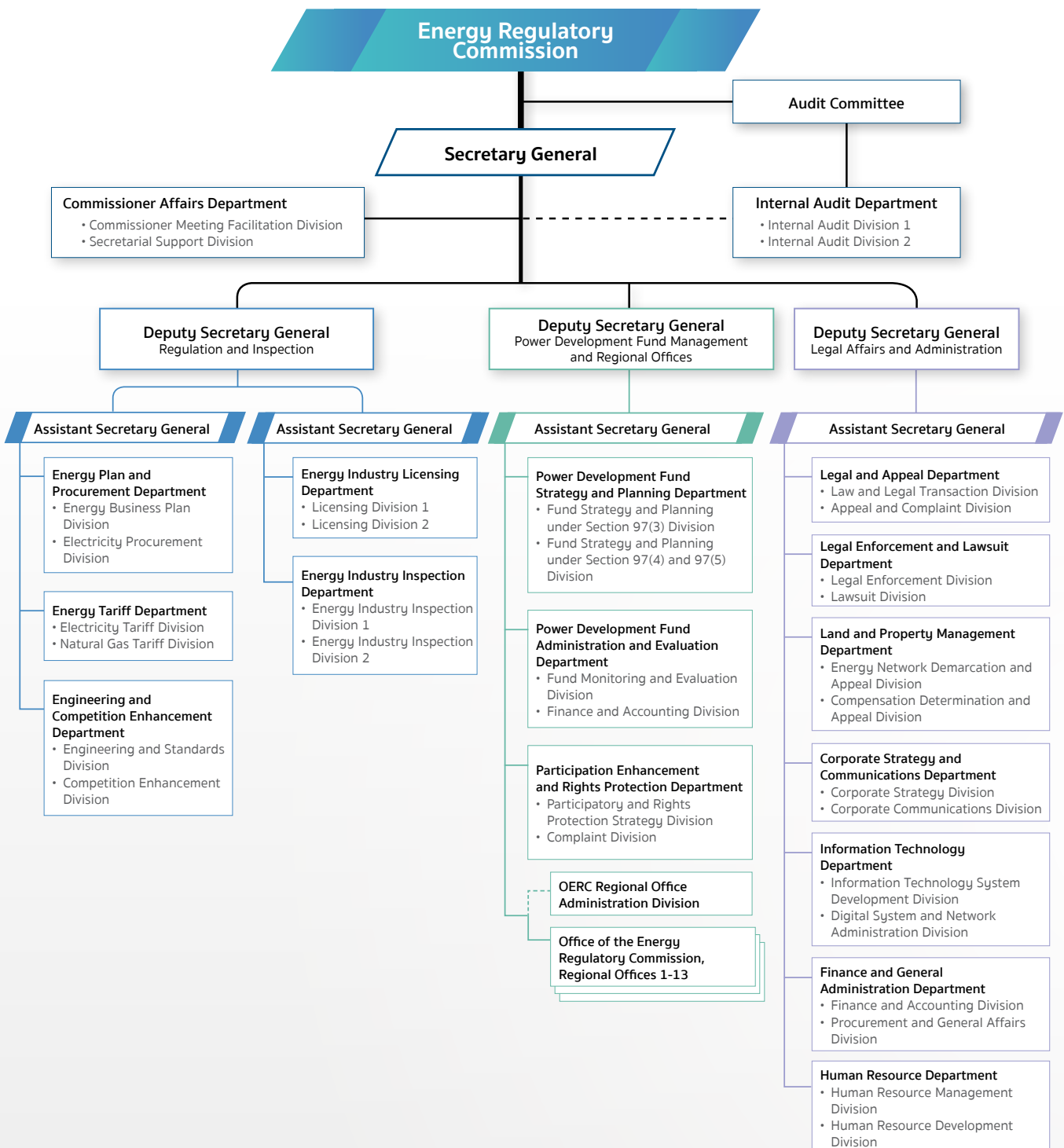
To protect rights and liberty of energy consumers, local communities, the general public and licensees in terms of participation, accessibility, utilization and management of energy under the criteria which are fair to all parties

Objective 8

To promote the use of renewable energy for electricity industry operation that renders minimal impact on the environment

Organizational Structure of the Office of the Energy Regulatory Commission

The internal organizational structure of the Office of the Energy Regulatory Commission is in pursuance of the Regulation on the Organization of the Office of the Energy Regulatory Commission B.E. 2562 (2019), with the work administration divided into three functions, comprising 30 Departments, of which 17 Departments are at the OERC Head Office and 13 Departments are the OERC Regional Offices, plus one OERC Regional Office Administration Division.



Map Showing Locations of 13 OERC Regional Offices

“To enhance extensive energy industry regulation and energy consumer protection, the ERC has directed to have OERC Regional Offices established in all 13 energy consumer regions nationwide to be a supportive mechanism in carrying out the work pertaining to licensing energy industry operation, auditing energy industry operation facilities, energy consumer protection and the implementation relating to the Power Development Fund.”



Remark: RO: Regional Office



OERC Regional Offices

1 OERC Regional Office 1 (Chiang Mai)

- In charge of 6 provinces:**
- Chiang Rai
 - Chiang Mai
 - Lampoon
 - Lampang
 - Phayao
 - Mae Hong Son

2 OERC Regional Office 2 (Phitsanulok)

- In charge of 8 provinces:**
- Nan
 - Uttaradit
 - Tak
 - Phitsanulok
 - Phrae
 - Sukhothai
 - Kamphaeng Phet
 - Pichit

3 OERC Regional Office 3 (Nakhon Sawan)

- In charge of 6 provinces:**
- Phetchabun
 - Sing Buri
 - Chai Nat
 - Uthai Thani
 - Nakhon Sawan
 - Lopburi

4 OERC Regional Office 4 (Khon Kaen)

- In charge of 8 provinces:**
- Nongkhai
 - Sakon Nakhon
 - Nong Bua Lam Phu
 - Khon Kaen
 - Nakhon Phanom
 - Udon Thani
 - Loei
 - Bueng Kan

5 OERC Regional Office 5 (Ubon Ratchathani)

- In charge of 8 provinces:**
- Mukdahan
 - Maha Sarakham
 - Yasothon
 - Ubon Ratchathani
 - Kalasin
 - Roi-et
 - Amnatcharoen
 - Si Sa Ket

6 OERC Regional Office 6 (Nakhon Ratchasima)

- In charge of 4 provinces:**
- Chaiyaphum
 - Nakhon Ratchasima
 - Burirum
 - Surin

7 OERC Regional Office 7 (Saraburi)

- In charge of 7 provinces:**
- Ang Thong
 - Prachinburi
 - Nakorn Nayok
 - Saraburi
 - Phra Nakorn
 - Sa Kaeo
 - Si Ayutthaya
 - Pathum Thani

8 OERC Regional Office 8 (Chonburi)

- In charge of 5 provinces:**
- Chachoengsao
 - Trad
 - Chanthaburi
 - Rayong
 - Chonburi

9 OERC Regional Office 9 (Kanchanaburi)

- In charge of 4 provinces:**
- Kanchanaburi
 - Suphanburi
 - Nakhon Pathom
 - Samut Sakhon

10 OERC Regional Office 10 (Ratchaburi)

- In charge of 6 provinces:**
- Ratchaburi
 - Chumphon
 - Prachuap Khiri Khan
 - Phetchaburi
 - Samut Songkhram
 - Ranong

11 OERC Regional Office 11 (Surat Thani)

- In charge of 6 provinces:**
- Surat Thani
 - Nakorn Si Thammarat
 - Krabi
 - Phuket
 - Phang-nga
 - Trang

12 OERC Regional Office 12 (Songkhla)

- In charge of 6 provinces:**
- Phatthalung
 - Yala
 - Pattani
 - Songkhla
 - Satun
 - Narathiwat

13 OERC Regional Office 13 (Bangkok)

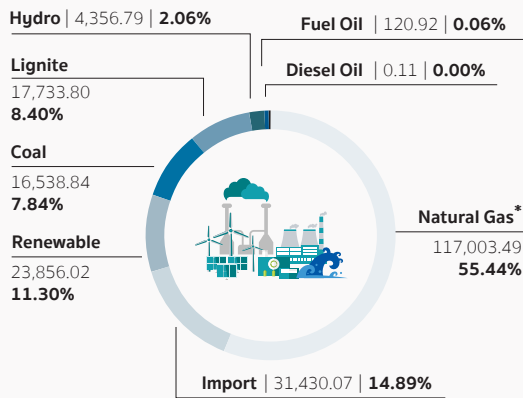
- In charge of 3 provinces:**
- Bangkok
 - Samut Prakan
 - Nonthaburi

Production and Distribution of Electricity and Natural Gas

by Licensees in 2021



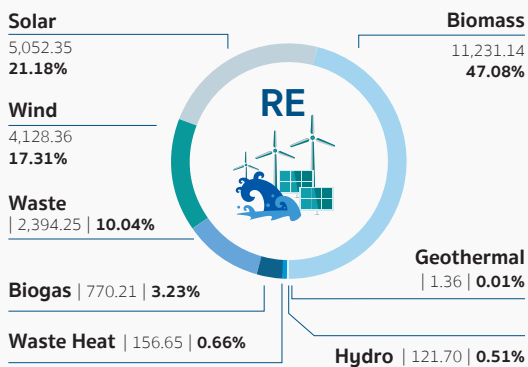
Electricity Generation in the Utilities' System [EGAT, PEA and MEA] Classified by Fuel Type



Total: 211,040.04 GWh

*Inclusive of that used as secondary fuel during the gas crisis.

Renewable Energy Generation in the Utilities' System [EGAT, PEA and MEA] Classified by Renewable Fuel



Total: 23,856.02 GWh

Gas Supply (BBTU)

Gulf of Thailand

Benjamas, Tantawan

18,112.43

CTEP1-3

291,752.14

GBN

184,513.70

GBS

117,203.91

Arthit

85,251.90

Pailin

144,074.52

JDA A18

150,784.49

JDA B17

3,003.96

Natural Gas Supply

16.05%

Myanmar Gas

252,179,259.46 MMBTU

20.64%

LNG

324,287,577.86 MMBTU

63.31%

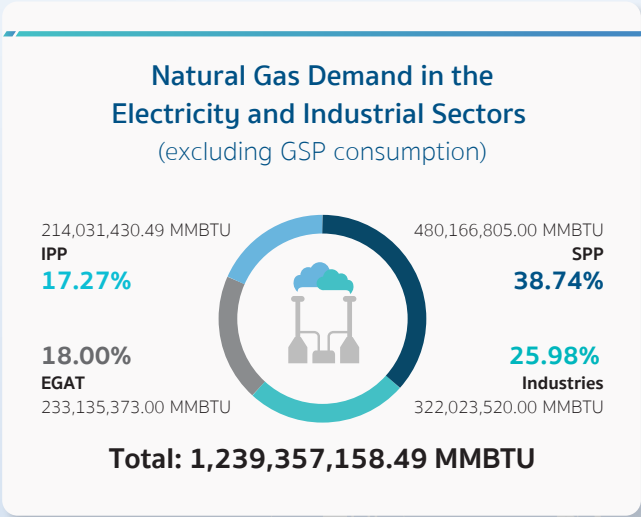
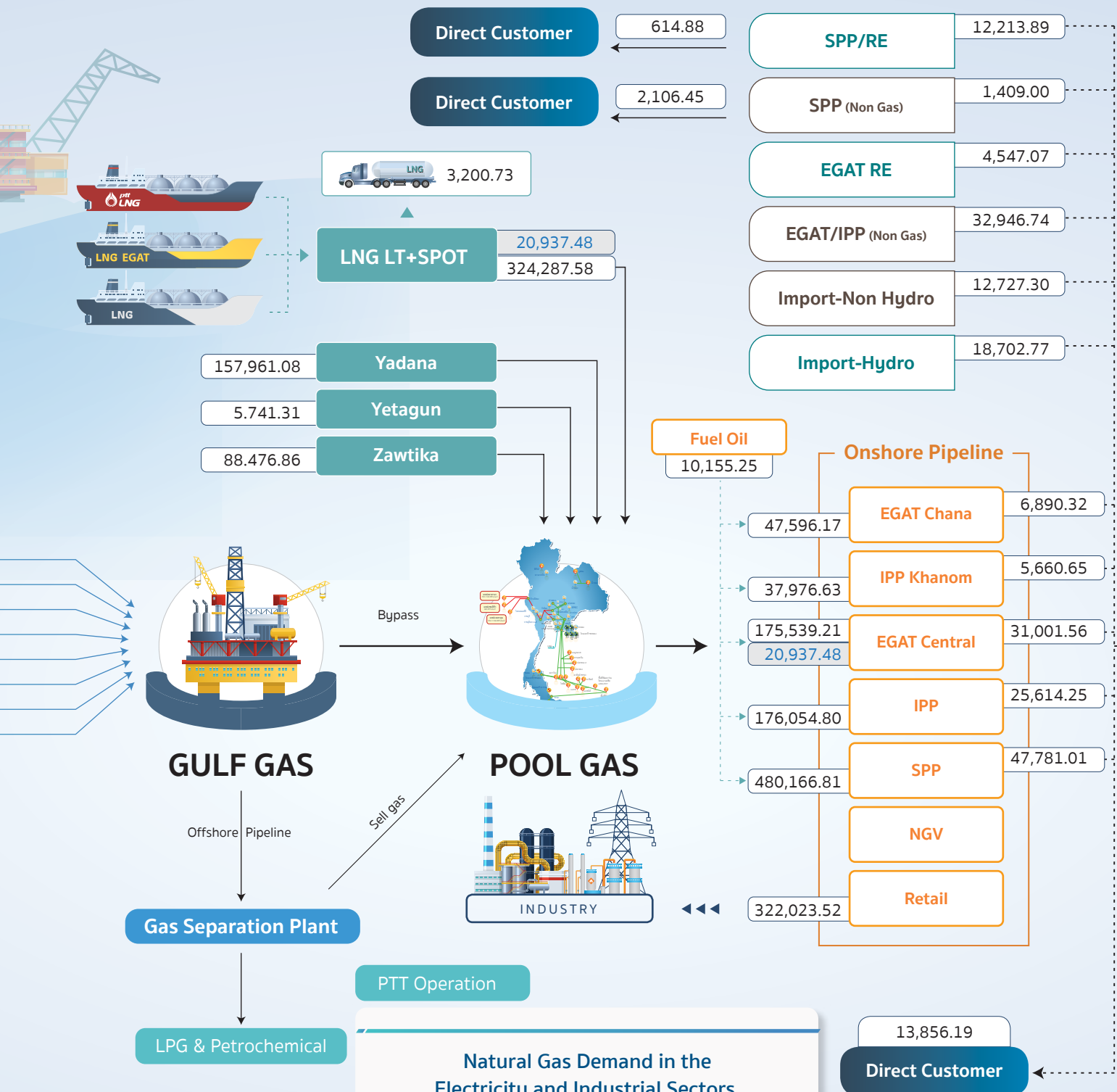
Gulf Gas

994,697,057.17 MMBTU

Total: 1,571,163,894.49 MMBTU

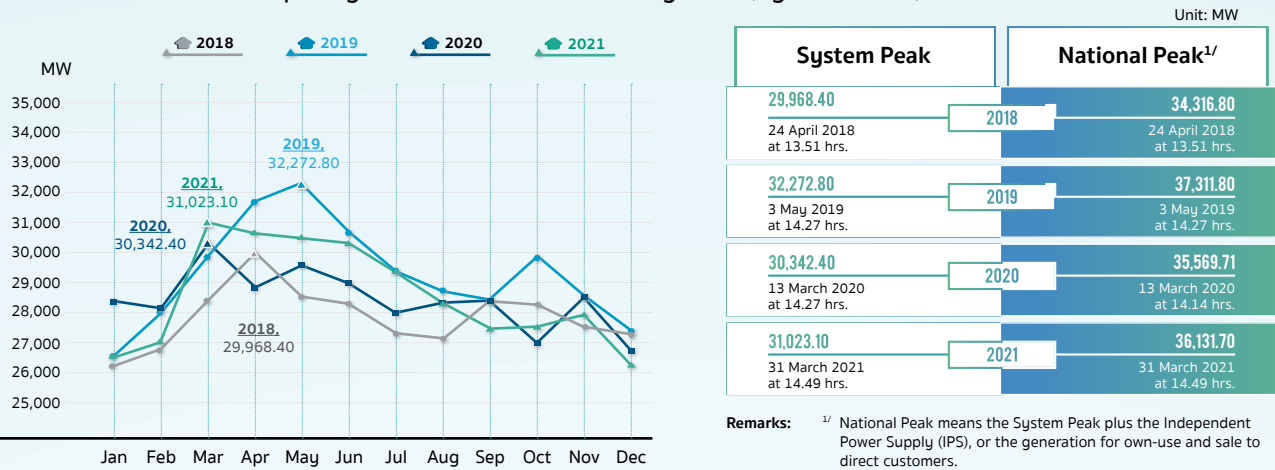
Remarks: excluding LNG EGAT

Data as at 31 December 2021

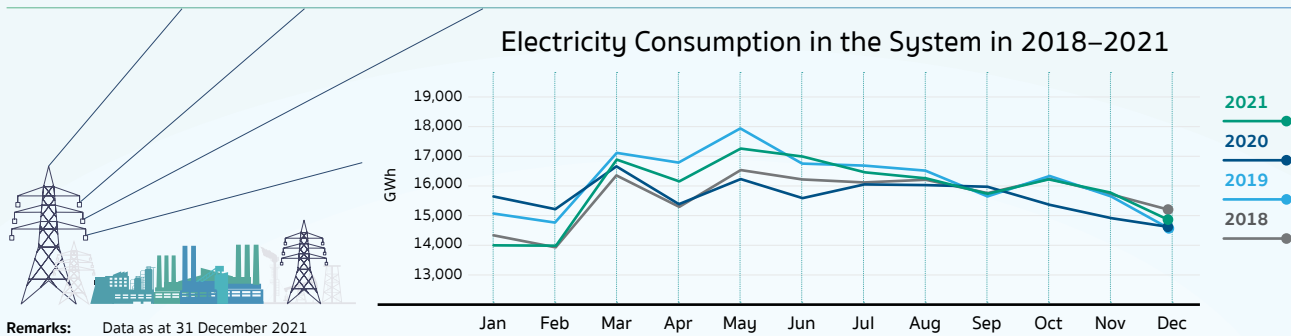


Data as at 31 December 2021

Peak Capacity Demand in the Power System (System Peak) in 2018-2021



Electricity Consumption in the System in 2018-2021

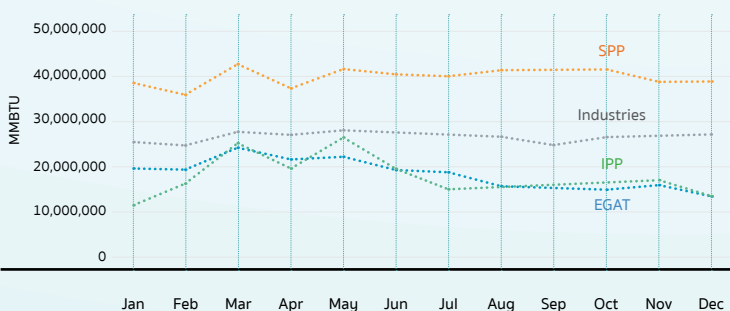


Electricity Consumption Classified by Consumer Category in 2018-2021

Power Consumer Category	2018		2019		2020		2021	
	GWh	GWh	Growth Rate (%)	GWh	Growth Rate (%)	GWh	Growth Rate (%)	
Residential	45,206.57	49,199.09	8.83%	52,860.38	7.44%	54,290.95	2.71%	
Small General Service	21,300.36	22,340.78	4.88%	21,125.77	-5.44%	20,707.78	-1.98%	
Medium General Service	30,550.60	31,382.18	2.72%	29,795.53	-5.06%	29,593.06	-0.68%	
Large General Service	78,655.91	77,330.19	-1.69%	71,794.85	-7.16%	73,976.33	3.04%	
Specific Business Service	6,483.08	6,794.06	4.80%	4,748.30	-30.11%	4,019.33	-15.35%	
Non-profit Organization	203.49	213.11	4.73%	206.07	-3.30%	203.04	-1.47%	
Agricultural Water Pumping	364.94	467.82	28.19%	416.85	-10.90%	397.76	-4.58%	
Temporary Power User	1,352.13	1,416.45	4.76%	1,364.76	-3.65%	1,252.31	-8.24%	
Standby	255.35	304.30	19.17%	290.97	-4.38%	381.73	31.19%	
Export	202.67	911.55	349.76%	623.81	-31.57%	83.73	-86.58%	
Electric Vehicle	0.05	0.05	-0.14%	0.09	100.30%	1.03	1,028.50%	
Interruptible Power User	0.00	0.00	0.00%	795.99	0.00%	1,869.64	134.88%	
Public Lighting	3,228.36	3,368.68	4.35%	3,545.39	5.25%	3,797.09	7.10%	
On-site Use ^{1/}	38.20	41.16	7.75%	40.55	-1.47%	38.27	-5.62%	
Total	187,841.72	193,769.43	3.16%	187,609.32	-3.18%	190,612.05	1.60%	

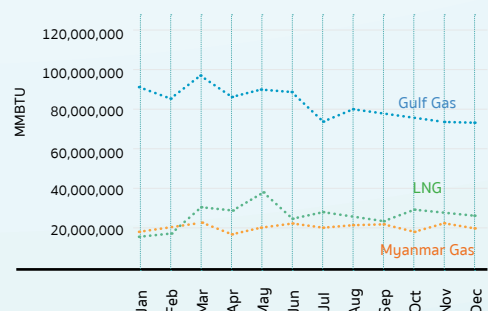
Remarks: Data as at 31 December 2021
^{1/} On-site use means consumption by office buildings of the Power Utilities.

Monthly Natural Gas Demand in 2021 in the Electricity and Industrial Sectors (excluding GSP consumption)



Remarks: Data as at 31 December 2021

Monthly Natural Gas Supply in 2021



Remarks: Data as at 31 December 2021

Energy Industry Regulation Performances


in Fiscal Year 2021




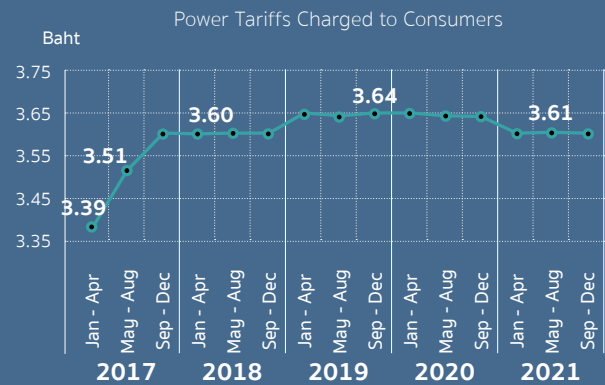


Support the Government Policy on Electricity-bill Relief during the COVID-19 Outspread



 **Electricity-bill relief measure** — covering a total of 23.70 million power users, or 97% of the power users nationwide, together with the measure on Minimum Charge exemption to assist power consumers under Schedules 3-7, accounting for budget utilization of over 28,562.78 million Baht.

 **Stabilized the power tariff according to the automatic power tariff adjustment (F_t)** — in 2021 power users paid for their electricity bills at an average rate of 3.61 Baht/unit throughout the year.



Remarks:

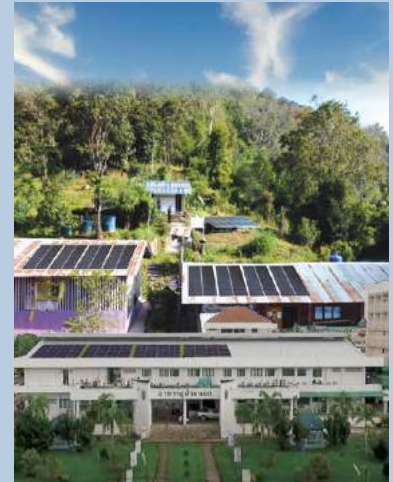
1. Base Tariff will be reviewed every 3-5 years to correspond with the investment in the construction of power plants, power transmission and distribution lines, operating expenses, appropriate returns, fuel costs, power purchase cost and policy expense.
2. F_t rate will be reviewed every 4 months to reflect variable costs that differ from the costs in the base tariff, i.e. fuel costs, power purchase cost and policy expense.

Regulate Energy Industry to Attain Sustainable Development

Procure electricity to ensure adequate and secure energy service provision

Solar-PV Rooftop Program for the people sector, under the residential group and the group covering schools, academic institutions, hospitals, including water pumping for agricultural purposes, with a target of 100 MW (for a period of 10 years), emphasizing primarily power generation for own use, while the excess capacity can be sold to the Distribution Utilities.

Community-based Power Plants for Grassroots Economy (Pilot Project) with a purchase target of 150 MW from power plants using biomass and biogas as fuel with a view to developing local economy and creating investment in renewable energy power plants in the country. A total of 43 project participants, with a combined proposed sale capacity of 149.50 MW, have been selected.



Promote Proper and Fair Competition

Revise relevant rules, regulations and codes to open access to LNG terminal services and the use of natural gas network systems to promote competition in the natural gas industry, Phase 2, in order to enhance competition in natural gas procurement and wholesale business (Shippers), to reduce fuel costs for power generation or to have competitive power tariffs when compared with neighboring countries — to date, a total of eight Shippers have been granted licenses, namely: (1) PTT Public Company Limited, (2) Electricity Generating Authority of Thailand, (3) Gulf Energy Development Public Company Limited, (4) Hin Kong Power Holding Co., Ltd., (5) B.Grimm LNG Ltd., (6) Electricity Generating Public Company Limited, (7) Siam Cement Public Company Limited and (8) PTT Global LNG Company Limited.

Protect Energy Consumers' Rights

Regulate, follow up and speed up customer guarantee deposit (CGD) refunds to Residential and Small General Service power consumers. To date, CGD refunds have already been made to 8.03 million power users, accounting for 15,327 million Baht, out of a total of 24.07 million users nationwide that are eligible to claim for the CGD payback, with a total budget of over 33,810 million Baht.



Energy Industry Regulation Performances in Fiscal Year 2021

The Energy Regulatory Commission (ERC) emphasizes the execution of its mission as mandated under the Energy Industry Act of 2007 (the Act), by conducting operations pursuant to the Annual Work Plan for Fiscal Year 2021 under the Action Plan for Energy Industry Regulation, Phase 4 (2020-2022). Major performances of the Office of the Energy Regulatory Commission (OERC) in Fiscal Year 2021 in pursuance of the nine main objectives of energy industry regulation can be summarized in the following.



Objective 1

To promote adequate and secure energy service provision, while ensuring fairness to both energy consumers and licensees

The development of Thailand's energy sector has placed emphasis on reinforcement of the electricity system security along with sustainable development. With a view to diversifying fuel sources for electricity generation, promotion has been made on electricity generation from renewable energy, via incentive measures in terms of power purchasing prices, as well as promotion of electricity generation for own use. The status of power purchase from renewable energy generation, according to the government policy on renewable energy generation promotion, as at 30 September 2021, can be summarized as follows. A total of 9,579 projects have been committed to supply electricity to the grid, with

a combined installed capacity of 9,820 MW, classified into: (1) projects that are commercially supplying power to the grid, i.e. commercial operation date (COD) started: 8,025 projects, with a total installed capacity of 9,074 MW; (2) projects with Power Purchase Agreements (PPAs) signed, pending COD: 847 projects, with a total installed capacity of 507 MW; and (3) projects having been notified of power purchase acceptance: 707 projects, with a total installed capacity of 239 MW. In addition, there are 1,841 renewable energy generation projects for own use and sale to direct customers (Independent Power Supply: IPS), with a total installed capacity of 2,349 MW.

Status of Renewable Energy Generation

Fuel	Committed to supply electricity to the grid ^{1/}		Power Producers, using renewable energy as fuel, for own use and sale to direct customers	
	No. of Projects	Installed Capacity (MW)	No. of Projects	Installed Capacity (MW)
(1) Waste	56	496	-	-
- Municipal Solid Waste	49	458	-	-
- Industrial Waste	7	38	-	-
(2) Biomass	246	4,070	44	1,064
(3) Biogas	182	415	46	129
(4) Hydro	75	164	-	-
(5) Wind	38	1,540	-	-
(6) Solar	8,977	3,037	1,734	873
- Solar Farm	473	2,510	102	144
- Solar Rooftop	6,129	130	1,632	729
- Solar—Government/Agricultural coop.	98	384	-	-
- Solar PV Rooftop—People Sector	2,277	13	-	-
(7) RE - Others ^{2/}	5	98	17	283
Total	9,579	9,820	1,841	2,349

Source: Power purchase of EGAT, MEA and PEA

Remarks: Data as at 30 September 2021

^{1/} Projects committed to supply electricity to the grid mean projects that are commercially supplying electricity to the grid, projects with PPAs signed, and projects having been notified of power purchase acceptance.

^{2/} RE-Others refer to electricity generation using waste gas from the manufacturing process and geothermal energy.



In Fiscal Year 2021, the OERC regulated the purchase of renewable energy generation in pursuance of the government policy and Thailand Power Development Plan 2018-2037, Revision 1 (PDP 2018, Rev.1), approved by the cabinet on 20 October 2020. Regulations and notifications were issued by the OERC on power purchase under the following major programs:

1.1 Program on Solar-PV Rooftop for the People Sector, according to the resolution of the National Energy Policy Council (NEPC) on 25 December 2020, classified into two groups:

(1) The Residential Group—the purchasing price for the sale of excess electricity to the grid is 2.20 Baht/kWh, with a purchase target of 50 MWp and a purchasing period of 10 years. The ERC has issued a regulation and a notification on power procurement from power generation projects using solar PV rooftop systems in the people sector, under the residential group, and has the grid-connection cost under this Program reduced from 8,500 Baht to 2,000 Baht, effective since 8 May 2021. So far (from 2019 to 2021), there have been 789 participants in the implementation of the People-Sector Solar-PV Rooftop Program—Residential, pursuant to the government policy, accounting for a total installed capacity of 4,309.8 kWp.

(2) The Group of Schools, Academic Institutions, Hospitals and Agricultural Water Pumping (Pilot Project)—the purchasing price for the sale of excess electricity to the grid is 1.00 Baht/kWh, with a purchase target of 50 MWp, divided into: schools and academic institutions, 20 MWp; hospitals,

20 MWp; and agricultural water pumping, 10 MWp; with an installed capacity more than 10 kWp but less than 200 kWp with a purchasing period of 10 years. The ERC has issued a regulation and a notification on power purchase from projects under the People-Sector Solar-PV Rooftop Program for schools, academic institutions, hospitals and agricultural water pumping (pilot project). Applications to sell electricity were accepted from 1 June 2021 to 30 September 2021, and 70 applications were submitted in the PEA service areas, with a combined installed capacity of 7,687.0 kWp.

1.2 Program on Community-based Power Plants for Grassroots Economy (Pilot Project), with a purchasing target of 150 MW from projects using biomass and biogas as fuel, pursuant to the NEPC resolution of 16 November 2020, with a view to enhancing the grassroots economy, especially for farmers who grow energy plants to enjoy assured incomes from selling energy plant as feedstock under the contract farming system and to obtain common benefits from the power plants. In addition, the power plants will take part in community development and provision of social welfare for communities surrounding the plants. In this regard, the ERC issued the Regulation on Electricity Procurement from Very Small Power Producers under the Program on Community-based Power Plants for Grassroots Economy (Pilot Project), B.E. 2564 (2021), followed by the ERC Notification on Request for Proposals for Power Purchase from Very Small Power Producers under the Program on Community-based Power Plants for Grassroots Economy (Pilot Project), B.E. 2564 (2021). Consequently, 43 projects have been selected to participate in the Program, accounting for a total proposed sale capacity of 149.50 MW, with the following averaged power tariffs:

Fuel	No. of Projects	Proposed Sale Capacity (MW)	Weighted Average Price (Baht/kWh)		Average Discount (%)
			Rates prescribed by NEPC	Rates from Bidding	
Biomass	16	75.00	4.4985	2.7972	-38
Biogas	27	74.50	4.7772	3.5717	-25
Total	43	149.50	4.6374	3.1831	-31

Remarks: FIT_v rates as prescribed by the NEPC and applied to community-based power plants for grassroots economy that supplied electricity to the grid in 2019; the FIT_v rates will be revised annually according to the core inflation.

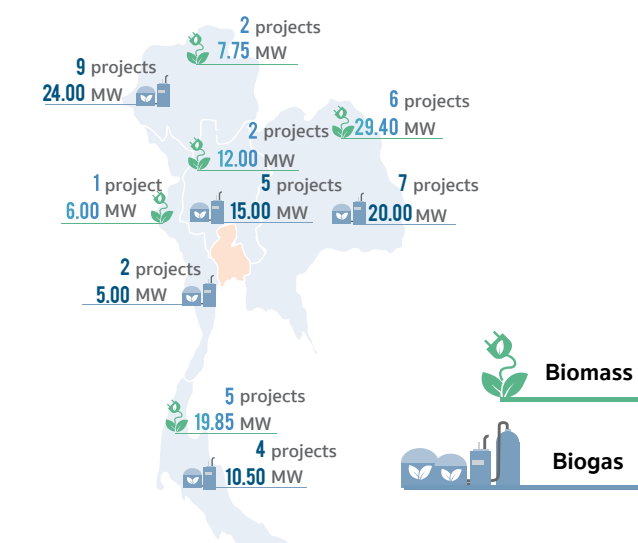
A seminar was organized by the OERC to provide the selected applicants with guidelines on project development pursuant to the Energy Industry Act (2007) together with required compliance to relevant rules and regulations so as to ensure smooth project development.



On 16 February 2021, the OERC organized a seminar to obtain opinions from Focus Groups on the “Draft ERC Regulation on Electricity Procurement under the Program on Community-based Power Plants for Grassroots Economy (Pilot Project) and the Draft Notification on Request for Proposals for Power Purchase.” 300 interested persons registered to participate in this online seminar. A hearing was also arranged via the OERC website for a period of 15 days, from 21 January – 4 February 2021.

Community-based Power Plants for Grassroots Economy (Pilot Project)

Region	No. of Projects	MW
North		
Biomass	2	7.75
Biogas	9	24.00
Central		
Biomass	2	12.00
Biogas	5	15.00
Northeast		
Biomass	6	29.40
Biogas	7	20.00
West		
Biomass	1	6.00
Biogas	2	5.00
South		
Biomass	5	19.85
Biogas	4	10.50
Total	43	149.50



1.3 Preparedness to be the Regional LNG Trading Hub and regulatory guidelines for commercial operation of the LNG Receiving Terminal to accommodate the implementation pursuant to the National Energy Reform Plan, by compiling in-depth information about the operation of Thailand’s LNG Receiving Terminal to prepare a report and recommendations about the feasibility of Thailand to become the Regional LNG Trading Hub together with regulatory guidelines for commercial operation of the LNG Receiving Terminal.

1.4 Improvement of the One Stop Service (OSS) licensing process to reduce the processing time and procedures for granting energy industry licenses, pursuant to the target of reform activities which will create a significant impact on licensees (Big Rock) under the National Reform Plan (revised edition). In this regard, the ERC has issued three secondary laws pertaining to OSS licensing in response to the Ministry of Industry’s issuance of the Ministerial Regulation Annulling the Factory Type or Kind No. 88, namely: 1) the Regulation on Preparation of an Environmental Report for Electricity



Generation Operations Exempted from or Not Falling within the Scope of the Environmental Impact Assessment Report Requirement, or Exempted from or Not Falling within the Scope of Compliance with Codes of Practice; 2) the Regulation on Safety Standards, Environmental Standards and Sewage or Waste Management for a Power Plant; and 3) the Regulation on Criteria, Procedures and Conditions for Consideration of Power Plant Location and Environment for Granting Electricity Generation Licenses. In addition, the OERC had completed the preparation of a Memorandum of Understanding (MoU) between the ERC and the Ministry of Interior on Guidelines and Procedures for Granting Permits for Building Construction and Other Structures for Energy Industry Operation, for signing by the concerned parties.

As for the preparation of a draft MoU on Regulation of the Environment, Safety and Sewage or Waste Management of a Power Plant among the ERC, the Ministry of Natural Resources and Environment (MNRE) and the Ministry of Industry, the MNRE has sent in its confirmation letter on the draft MoU. Presently, the OERC is awaiting revision of the Ministerial Regulation to annul the Factory Type or Kind No. 88 and the amendment to the Royal Decree on Determination of Regulated Energy.

In order to provide rapid license granting for energy industry operation, the OERC has developed the e-licensing system for electricity generation business, covering all fuel types, including the EV charging station service, via PCs and

smart phones using the application that is compatible with both iOS and Android operating system, which has been in operation since 1 October 2021.

1.5 Issuance of licenses for electricity and natural gas industry operation within the specified timeframe, totaling 198 licenses; 650 licenses for regulated energy production under the law on energy development and promotion; and 100 licenses for power generation facility operation under the law on factories. In addition, permits for building construction or modification for the purpose of energy industry operation, and designated building construction certificates were issued, totaling 100 permits/certificates.

Summary of the Issuance of Energy Industry Licenses and Licenses for Regulated Energy Production under the Law on Energy Development and Promotion in Fiscal Year 2021

License Type	Number of Licenses Granted	
	2020	2021
Issuance of Energy Industry Licenses		
1. Electricity Industry Licenses:	125	194
1.1 Electricity Generation License	73	109
1.2 Electricity Transmission System License	-	-
1.3 Electricity Distribution System License	21	23
1.4 Electricity Retail License	31	62
1.5 Electricity System Operation License	-	-
2. Natural Gas Industry Licenses:	3	4
2.1 Natural Gas Transmission through Transmission Pipeline System License	-	1
2.2 Natural Gas Procurement and Wholesale License	3	3
2.3 Natural Gas Retail through Distribution Pipeline System License	-	-
2.4 Natural Gas Storage and Transformation of Liquid to Gas License	-	-
Total	128	198
3. Licenses for Regulated Energy Production under the Law on Energy Development and Production		
3.1 Regulated Energy Production License	749	650
3.2 Power Generation Facility Operation License	66	100
Total	815	750

Remarks: Data as at 30 September 2021

Summary of the Issuance of Permits for Building Construction or Modification for Energy Industry Operation, and Designated Building Construction Certificates in Fiscal Year 2021

License Type	Number of Permits Granted	
	2021	
Permits for Building Construction or Modification	Construction	Modification
1. New Permits	53	6
2. Permit Renewal — 1 st renewal and 2 nd renewal	25	-
Certificates for Designated Building Construction	13	3
Total	91	9

Remarks: Data as at 30 September 2021

Objective 2

To protect energy consumers' benefits in terms of both tariffs and service quality

2.1 Issued electricity-bill relief measures to help mitigate impacts of the outspread of coronavirus disease 2019 (COVID-19) on energy consumers, involving a total of 23.70 million power users, or 97% of power users nationwide, i.e. the measure on 90-unit free of charge electricity consumption for residential consumers with consumption not exceeding 150 units/month; the measure on power tariff reduction for large residential consumers with consumption over 150 units/month; 50-unit free of charge electricity consumption for Small General Service power consumers (excluding government agencies and state-owned enterprises); and exemption of the Minimum Charge to help commercial consumers under the following categories: Medium General Service, Large General Service, Specific Business Service, Non-profit Organizations and Water Pumping for Agricultural Purposes, accounting for a total budget of 28,526.78 million Baht.

2.2 Reviewed the power tariff according to the Automatic Power Tariff Adjustment Mechanism (F_t) every four months so that the tariff would reasonably reflect changes in the costs of power procurement and would be fair for power consumers, i.e. the fuel cost, power purchase cost and impact of the state policy (“policy expense”), which differ from those calculated in the base tariff. In Fiscal Year 2021, deliberation was made on the F_t rate reduction as follows: for the round of January – April 2021, the F_t rate was reduced by 2.89 Satangs/unit, resulting in the F_t charged at –15.32 Satangs/unit; and for the rounds of May – August 2021 and September – December 2021, the ERC decided to stabilize the F_t rate at –15.32 Satangs/unit; as a result, the power tariff for consumers remained unchanged, at the rate of 3.61 Baht/unit (exclusive of the value added tax). The main reason for F_t stabilization for the round of September – December 2021 was due to the global economic recovery a few months earlier, coupled with the coming winter

then in foreign countries, which had caused the price of natural gas—the main fuel for power generation—to rise continuously in accordance with increasing crude oil prices in the world market pursuant to the upward trend of oil demand, while Thailand’s economic sector was still fragile and adversely affected by a new wave of COVID-19 outspread which was still severe and kept expanding. Therefore, the ERC deemed it appropriate to sustain the economy and mitigate the impact on power consumers, not to aggravate the situation by increasing energy prices.



2.3 Established the electricity tariff regulatory framework and the electricity tariff structure for the period 2021–2025 in accordance with the policy on electricity tariff structure for 2021–2025, approved by the NEPC on 1 April 2021. In this regard, the ERC passed a resolution approving the draft framework for determining the electricity tariff structure and issued the ERC Notification on Electricity Tariff Regulatory Framework, B.E. 2564 (2021), effective since 28 October 2021.

2.4 Developed the electricity industry regulatory guidelines for the future trading of renewable energy generation in the market (“RE 100 Package”) by examining the criteria for setting power tariffs and the execution of virtual power purchase agreements (Virtual PPA) to accommodate the promotion of Green Energy trading according to the government policy, which emphasizes the increase in competitiveness in the industrial sector of the country to be in line with the international target of carbon emission reduction.

2.5 Upgraded the electricity tariff regulation by developing the accounting criteria to be up to international standards (Uniform System of Accounts: USOA) to ensure that concerned licensees prepare their accounting and financial reports in accordance with the specified criteria, to be used for auditing and regulating electricity tariffs to be cost-reflective, by developing a Manual for Preparing Accounting and Financial Reports for the Electricity Industry, pursuant to the ERC Notification on Criteria, Procedures and Conditions for Preparing Accounting and Financial Reports for Energy Industry Licensees B.E. 2563 (2020), and issuing the ERC Notification on Requirement for Natural Gas Industry Licensees to Have the Duty to Prepare Regulatory Accounting and Financial Reports B.E. 2564 (2021). In this connection, the OERC has established academic cooperation

with the United States Agency for International Development (USAID) to exchange and learn about experiences of other countries in the implementation of accounting and financial report preparation to meet the international standards.

2.6 Regulated tariffs in the natural gas industry.

The ERC's regulation of tariffs in the natural gas industry in 2021 can be summarized as follows.

(1) On 31 March 2021 the ERC approved the natural gas throughput tariff for natural gas transportation through the natural gas transmission pipeline system, in the part of variable costs (Tc), of the PTT Public Company Limited and the tariff for storage and transformation of liquid to gas, in the part of variable costs (Lc) for 2021, of the PTTLNG Company Limited, effective from 1 April to 31 December 2021, or until the tariff adjustment is approved by the ERC.



Natural Gas Transmission Tariffs through the Natural Gas Transmission Pipeline System by Zone

Unit: Baht per MMBTU

Zone	Fixed Costs (Td)	Variable Costs (Tc)
Zone 1: Offshore natural gas transmission pipeline, in Rayong	8.5899	1.0405
Zone 2: Offshore natural gas transmission pipeline, at Khanom	14.2177	1.0405
Zone 3: Onshore natural gas transmission pipeline	12.0654	1.0405
Zone 4: Onshore natural gas transmission pipeline, at Chana	2.4855	0.0994
Zone 5: Onshore natural gas transmission pipeline, at Namphong	1.1299	0.0000

Remarks: Data as at April 2021

LNG Receiving Terminal Tariffs

Unit: Baht per MMBTU

Tariff for fixed costs	Tariff for variable costs
Ld 18.3506	Lc 0.5423

Remarks: Data as at April 2021

(2) The ERC approved the natural gas price structure to accommodate the operation pursuant to the Guidelines on Promotion of Competition in the Natural Gas Industry, Phase 2, approved by the NEPC on 1 April 2021, and on 4 August 2021 the OERC presented the aforesaid structure to the NEPC for approval. Later, on 20 and 29 September 2021, the ERC approved the tariff setting framework for four types of natural gas industry, namely: (1) Natural Gas Transmission through Transmission Pipeline System, (2) Natural Gas Storage and Transformation of Liquid to Gas,

(3) Natural Gas Retail through Distribution Pipeline System, and (4) Natural Gas Procurement and Wholesale. Publication of the tariff setting framework was made in the Government Gazette, with enforcement as from 15 December 2021.

2.7 Revisited the service quality standards in the electricity industry to be imposed on electricity transmission system licensees and electricity system operation licensees so as to regulate and ensure adequate energy service provision, secure and reliable electricity systems, with fairness for energy consumers and licensees.

Objective 3

To promote competition in the energy industry and prevent abusive use of dominance in energy industry operation



Issuance of rules and regulations as well as undertaking the natural gas industry regulation pursuant to the Guidelines on Promotion of Competition in the Natural Gas Industry, Phase 2, approved by the NEPC on 1 April 2021. In Fiscal Year 2021, the ERC carried out the following:

3.1 Regulated the Transmission System Operator Code (TSO Code)¹ to be in compliance with the principles stipulated in the Notification of the ERC on Transmission System Operator Regulatory Framework B.E. 2563 (2020) (“TSO Regulatory Framework”) so as to accommodate the opening of competition in natural gas procurement & wholesale business among the Shippers. The PTT has announced and enforced its TSO Code since 1 August 2021 and has provided explanation to create understanding of all Shippers, pursuant to the ERC resolution.

3.2 Regulated the Third Party Access Code (TPA Code) for the use of or connection to LNG Terminal, No. 3, of PTTLNG Company Limited to be in compliance with the principles of the Notification on TPA Regime related to the opening of access to the use of or connection to the natural gas transmission system and LNG Terminal by a third party. PTTLNG has posted the TPA Code for LNG Terminal on its website since 1 August 2021.

3.3 Managed the LNG Terminal capacity as well as natural gas in the Gulf of Thailand to adequately meet the

demand of gas separation plants and set the framework for the use of bypass gas by PTT. On 17 November 2021 the ERC gave consent to the (Draft) Notification of the ERC on Regulatory Framework for Bypass Gas Management for the Pool Gas Manager, and the OERC is taking required proceedings to have the notification publicized and put into force.

3.4 Established practice guidelines for natural gas procurement and wholesale licensees to be of the same standards. The ERC has issued the Notification on Code of Conduct for Natural Gas Procurement and Wholesale Licensees B.E. 2564 (2021) to provide practice guidelines for natural gas procurement and wholesale licensees to be of the same standards, taking prime consideration of fairness in the competition and removal of trade barriers, including maintaining energy security of the country.

3.5 Regulated power dispatch orders of electricity system operation licensees. In this regard, the ERC issued the Notification on Power Dispatching Framework for Electricity System Operation Licensees B.E. 2564 (2021), which has come into force since 27 November 2021.

3.6 Improved the information system for regulating electricity generation and monitoring natural gas demand and supply in the form of near real time to enable management during a crisis, by developing the system to link the data via the ERC Data Sharing Platform.

¹ TSO Code comprises the code governing the use of a natural gas transmission system (Transmission Code), the code governing the connection to a natural gas transmission system (Connection Code) and the code governing the operation of a natural gas transmission system (Operations Code).

Objective 4

To promote fair and transparent energy network system service provision, without unjust discrimination

4.1 Reviewed the Third Party Access Regime (TPA Regime)—the principles and directions for setting TPA Codes for the use of or connection to the natural gas transmission system and LNG Terminal—so that utilization of the natural gas network system would be transparent and fair, taking into account problems and obstacles encountered under the trial operation on spot LNG import, conducted by EGAT pursuant to the Guidelines on Promotion of Competition in the Natural Gas Industry, Phase 1.

4.2 Implemented the ERC Sandbox Program to trial innovative business practices and management of new models of the electricity system so as to enhance energy industry regulation to accommodate the policy on promotion of competition in the electricity industry of the country and to be prepared for the electricity industry deregulation in the future. On 17 March 2021 the ERC gave consent to the proposed guidelines for determining Wheeling Charges for access to the use of electricity network systems under the ERC Sandbox Program. In this regard, Sandbox Program participants were required to report their information about electricity trading, capital expenditures and financial performance, and likewise the three Power Utilities had to report impacts on the use of or connection to the grid of the Sandbox projects to the OERC every three months and when the project implementation was completed. Later, on 2 June 2021, the ERC considered the Third Party Access Code (TPA Code), governing the use of or connection to an electricity network system by a third party, to be put into trial operation in the actual power trade under the ERC Sandbox Program, in order to test the technical feasibilities and examine impacts which may occur. Then, the OERC would gather information from the trials under the ERC Sandbox Program to improve the TPA Code and the framework for determining the Wheeling Charges and to review the Connection Codes for connection to the electricity distribution systems of the Distribution Utilities so that the Codes would be standardized in Fiscal Year 2022. In addition, on 18 August 2021, the ERC approved the principles and guidelines for developing the Third Party Access Framework for the Use of or Connection to an Electricity Network System (TPA Framework), which is expected to come into force by March 2022.

4.3 Studied regulatory guidelines to develop rules and regulations about standards and requirements relating to electricity network systems in order to accommodate electricity consumption arising from promotion of innovations, such as the promotion of electric vehicle (EV) utilization and promotion of Energy Storage System (ESS) technology. In this regard, the OERC has established academic cooperation with USAID Clean Power Asia in conducting a study on technical standards in order to establish Thailand's standards for Battery Energy Storage



System (BESS). Three experimental battery innovation projects were implemented under the ERC Sandbox Program, i.e. 1) Electricity Generation and Distribution from Wind Farms combined with ESS to improve the electricity quality and increase the distribution system stability, with a capacity of 22,000 volts and 4-month project duration; 2) Energy Bank at Ko Pha-ngan, with 6-month project duration; and 3) Smart Battery Energy Storage on Samui Island, with 3-month project duration. The preliminary study outcomes of the three projects were submitted, and on 20 September 2021 the ERC passed a resolution approving the regulatory guidelines for the ESS utilization in the energy industry.



Objective 5

To promote efficient energy industry operation and ensure fairness to both licensees and energy consumers

5.1 Conducted post-audits of energy industry operation according to the terms and conditions of license granting.

The OERC audited a total of 105 electricity generation facilities, as planned, divided into: 35 facilities via field audits and 70 facilities via the self-declaration system. In addition, with a view to regulating power plants' compliance with the environmental quality standards, the OERC has developed a digital platform for audit-data collection and online submission of environment-related reports so as to digitalize the reports and data collection and has prepared a Memorandum of Understanding (MoU) on Development of the Digital Platform "Smart EIA Management System" for management and evaluation of environmental impact of the country. Presently, the ERC Smart Audit Platform (ERC-SAP) for electricity generation business is being developed by the OERC in order to link the information about environmental quality with other concerned agencies, e.g. the Office of Natural Resources and Environmental Policy and Planning, the Industrial Estate Authority of Thailand and the Department of Industrial Works, which is expected to complete in 2022.

5.2 Issued the criteria, method and conditions for the use of COVID-19 infectious waste as fuel to regulate electricity generation licensees using municipal solid waste or industrial waste as fuel amidst the COVID-19 outbreak in order to control the transportation, storage and disposal of COVID-19 infectious waste which will be used as fuel for electricity generation, including the standards of waste gas emitted from electricity generation facilities.



On 8 March 2021, Mr. Auttapol Rerkpiboon, President and Chief Executive Officer of PTT Plc. (3rd from the left); Dr. Raweewan Bhuridej, Secretary General of the Office of Natural Resources and Environmental Policy and Planning (2nd from the left), Dr. Somchint Pilouk, Governor of the Industrial Estate Authority of Thailand (far left), Mr. Khomgrich Tantravanich, OERC Secretary General (3rd from the right), Ms. Nantika Thangsuphanich, Director General of the Department of Energy Business (2nd from the right); and Mr. Tavan Tanakitcharoenpat, Deputy Director General of the Department of Energy Business (far right), jointly signed the MoU on Development of the Digital Platform "Smart EIA Management System" for management and evaluation of environmental impact of the country, aiming to facilitate entrepreneurs in planning investment in energy project development, infrastructure projects and other related industries in compliance with relevant environmental laws, with the application of technology to create innovations so that environment-related work of the country would be mobilized efficiently and to be a key mechanism to enhance sustainability in economic, social and environmental aspects, including upgrading the innovation-driven competitiveness of the country.

Objective 6

To protect rights and liberty of energy consumers, local communities, the general public and licensees in terms of participation, accessibility, utilization and management of energy under the criteria which are fair to all parties

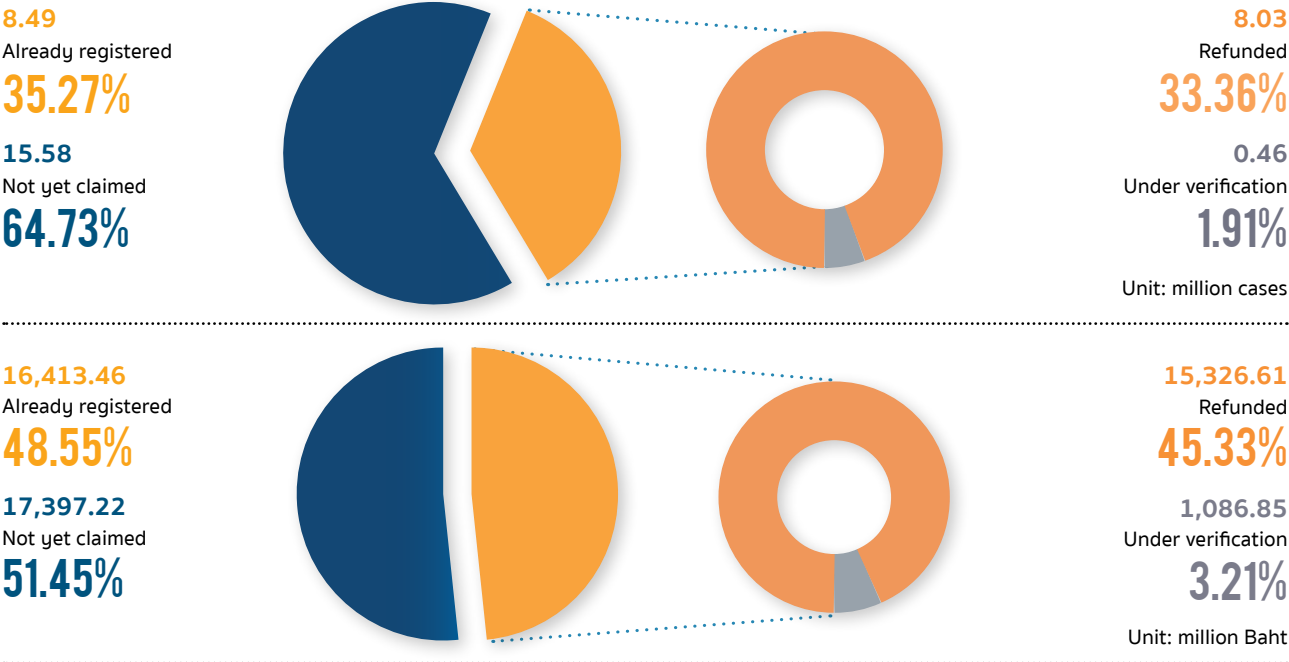
6.1 Improved the process of participation in energy industry regulation. The ERC has issued the regulation on hearing and creating understanding of the general public and stakeholders with regard to the consideration of electricity generation license issuance, with the aim of encouraging energy consumers, local communities, the general public and licensees to participate in the energy industry regulatory process.

6.2 Regulated the implementation of the measure on customer guarantee deposit (CGD) refunds on a continuous basis so as to protect energy consumers, in pursuance of the ERC Notification on Customer Guarantee Deposit Refunds to Power Consumers under Schedule 1: Residential Customers and Schedule 2: Small General Service, B.E. 2563 (2020), taking effect as from 20 March 2020, so that the Metropolitan Electricity Authority (MEA), the Provincial Electricity Authority (PEA) and the Sattahip

Electricity Authority—the Royal Thai Navy Welfare Concession (SEA)—could pay the CGD back to power consumers who have placed the CGD based on the schedule and capacity of their power meters; this involves 24.07 million power consumers nationwide that are eligible to claim for the CGD refunds, accounting for a total budget of over 33,810 million Baht. Moreover, the CGD collection will be discontinued for new power consumers, except for the case where consumers change their customer schedules from Schedule 1 and Schedule 2 to other schedules. In this regard, the Distribution Utilities have been paying back the CGD, starting from 31 March 2020. So far, 8.49 million cases have registered for the CGD refunds, accounting for a total refund of 16,413 million Baht. Of these, 8.03 million cases have been refunded, with a total refund amount of 15,327 million Baht, and 0.46 million cases are under verification, accounting for a budget of 1,087 million Baht (Data as at 19 December 2021).

Progress of Consumer Guarantee Deposit (CGD) Refunds

Total consumers eligible for CGD refunds: 24.07 million cases, accounting for a total budget of 33,810 million Baht



Data as at 19 December 2021

6.3 Addressed complaints within the specified timeframe. The ERC finalized complaint consideration for a total of 121 cases, and 16 cases are still under consideration within the specified timeframe.

Summary of the Performance on Complaint Consideration

	Issue	No. of Complaints	Status of Complaint Consideration		
			Finalized	Under Consideration	Total
1.	Complaints under Sections 100 and 103—where energy consumers have difficulties as a result of service provision of the licensees and unfair collection of service charge	85	79	6	85
2.	Complaints under Section 90—where electrification expansion is requested or where the service exists but is inadequate to meet energy consumers' demand	15	12	3	15
3.	Complaints opposing power plant construction	19	17	2	19
4.	Complaints against operators regarding wastewater disposal and soot emission	2	1	1	2
5.	Complaints about communication lines and telecommunications equipment installed on utility poles	6	3	3	6
6.	Other complaints	10	9	1	10
Total		137	121	16	137

Remarks: Data as at 30 September 2021

6.4 Considered appeals relating to utilization of immovable property for installation of energy network systems. The ERC finalized consideration of 1,073 appeals against the demarcation of areas to be surveyed, notification on demarcation of an energy network system, determination of compensation prices for land and assets, objection to energy network system construction, and appeals on compensation for property covered by energy network system boundaries, and 318 cases are still under consideration.

Performance on the Regulation of Immovable Property Utilization

	Issue	No. of Appeals	Status of Appeal Consideration		
			Finalized	Under Consideration	Total
1.	Notification on demarcation of areas to be surveyed for energy network systems, pursuant to Section 105	7	6	1	7
2.	Notification on demarcation of energy network system areas, pursuant to Section 106	31	24	7	31
3.	Determination of compensation prices for land and assets	14	5	9	14
4.	Appeals against notifications on demarcation of energy network system areas and objection to energy network system construction, pursuant to Section 106 and Section 108(1)	485	268	217	485
5.	Appeals on compensation for property covered by energy network system boundaries, pursuant to Section 108(4)	854	770	84	854
Total		1,391	1,073	318	1,391

Remarks: Data as at 30 September 2021

On 30 March 2021, the OERC jointly with the Law and Development Research Center (LDRC) of the Faculty of Law, Chulalongkorn University, organized a Focus Group consultation to obtain opinions on the “Project on Review and Study to Improve the Criteria for Paying Compensation for Land and Assets,” at InterContinental Hotel Bangkok, with 100 participants, comprising ERC Commissioners,

OERC executives and officials, licensees, people whose pieces of land were covered by energy network system boundaries, and the interested general public. The opinions and recommendations obtained from stakeholders will be taken into account in the OERC’s improvement of the criteria for paying compensation for land and assets.



6.5 Administered the Power Development Fund money pursuant to Section 97(1) of the Energy Industry Act of 2007—to ensure compliance with the Fund’s objective under the aforesaid section, i.e. to compensate and subsidize electricity industry licensees who have provided services for underprivileged power consumers or to enhance extensive electrification. In Fiscal Year 2021, the total compensation and subsidies was 14,359 million Baht (Data as at September 2021).

6.6 Administered the Power Development Fund money pursuant to Section 97(3) of the Energy Industry Act of 2007—to ensure compliance with the Fund’s objective under the aforesaid section, i.e. to develop or rehabilitate localities affected by power plant operation. The OERC has upgraded efficiency and standards of the Fund administration under Section 97(3) in continuation of the implementation in Fiscal Year 2020, by reviewing and making revisions to relevant notifications, criteria and manuals to be in line with the Regulation of the ERC on the Power Development Fund for Development or Rehabilitation of Localities Affected by Power Plant Operation B.E. 2563 (2020), which has been in effect since 1 October 2020. Moreover, the OERC has recruited new sets of Community Development Committee for Areas Surrounding Power Plants, at the required proportion, to decentralize authority

and responsibility to the local level with regard to mobilizing community projects in designated areas so as to create sustainable development or rehabilitation of areas surrounding power plants. A system for audits and evaluation of the performance of projects in designated areas has also been established. In this regard, the ERC approved the budget framework for Fiscal Year 2021 to provide a framework for preparing Annual Work Plans for Category A and Category B local Power Development Funds (local PDFs), which receive a budget of more than three million Baht/year, involving 56 local PDFs with a combined budget of 2,919.24 million Baht. A total of 4,640 community projects in designated areas under 55 local PDFs were approved, accounting for a total budget of 1,950.70 million Baht, to carry out community development activities in the following aspects: public health—to reduce or prevent health problems of the communities surrounding power plants; education—to increase the educational quality of students and teachers in government schools in areas surrounding power plants; economics—to increase income of the communities surrounding power plants; environment—to enhance or conserve the environment in areas surrounding power plants for good quality of life; public utilities—to increase access to and extensive provision of public utility services; and community-based energy—to promote coexistence between the power plants and communities.



**Awards Ceremony “Click Idea, Plick Chumchon” Project
(Bright Ideas to Better Your Community)**

On 30 October 2020, Mrs. Atchaka Sibunruang—Commissioner, together with Mr. Khomgrich Tantravanich—OERC Secretary General, presented awards to the selected contestants in the project “Click Idea, Plick Chumchon,” implemented by the Power Development Fund under Section 97(3), with the intention to provide the youth with a platform to show their ideas and take part in upgrading their own communities in their capacity as residents in the areas around a power plant. The Fund saw the opportunity to help and support the youth to get income and to communicate their concepts towards their own community via a creative video clip, up to 5 minutes long, under the theme “Community—Development—Sustainability,” so as to win scholarships and prize money for use in the development of their own community. The awards were presented to the contest winners to be used for their community development and create jobs for people in the areas surrounding a power plant.

**Visit and Award Presentation to the 1st Winner
“Click Idea, Plick Chumchon” Project**

On 8 February 2021, Commissioner Atchaka Sibunruang travelled to visit and hand over the equipment (Compression Molding Machine) to the 1st winner of the contest under the “Click Ideas, Plick Chumchon” Project, i.e. the LW The Devoler team (Green Straw Project), at Lat Yao Wittaya School, Lat Yao District in Nakhon Sawan Province, to be used for community development and create jobs for people in the areas surrounding the power plant.



Objective 7

To promote economical and efficient use of energy and resources in the energy industry operation and to raise public awareness of energy saving as well as alternative energy utilization, with due consideration of environmental impacts and the balance of natural resources

7.1 Administered the Power Development

Fund money pursuant to Section 97(4) of the Energy Industry Act of 2007—to promote the use of renewable energy and technologies for electricity industry operation that render minimal impact on the environment. The OERC has regulated the implementation of projects pertaining to the study, research, demonstration of improvement in technologies for electricity industry operation to be efficient and create minimal impact on the environment

as well as the promotion of economical use of resources in energy industry operation and the use of renewable energy in the electricity industry, of which the budgets were granted in Fiscal Year 2020, totaling 13 projects with a combined budget of 137.67 million Baht. As for Fiscal Year 2021, the ERC has approved a budget framework of 1,920 million Baht to promote activities under Section 97(4) and will allocate the Fund money to eligible projects under this Section accordingly.



On 23 March 2021, the OERC jointly with a news agency, The Bangkok Insight, organized a seminar on **the “Green Station” project** to build up knowledge and create networking for sustainable growth of clean energy under the campaign, “Clean Energy for Life: Use Clean Energy for Better Quality of Life for All,” at Songphanburi Hotel in Suphanburi province. The seminar was chaired by Mrs. Ruedee Paringkan, Assistant Secretary General of the OERC, and attended by the Director of the OERC Regional Office 9 (Kanchanaburi) and OERC officials; Executive Editor of The Bangkok Insight news agency & website; Asst. Prof. Pisit Maneechot, School of Renewable Energy and Smart Grid Technology, Naresuan University; academics; representatives of government agencies; entrepreneurs; community leaders and the general public, totaling 200 participants.

7.2 Wrapped up the research study outputs as well as the dissemination and application of the outputs to extend practical implementation under the projects on promotion of research study to improve electricity system efficiency and load management as a result of the promotion of EVs and ESS and to develop the digital technology to accommodate energy management due to the promotion of electricity generation from renewable energy, including research on the use of energy and resources in the electricity industry, which is efficient and creates minimal impact on the environment in line with technological changes in the future.

7.3 Implemented the project on promotion of economical use of energy. The OERC provided support for implementing the project on energy-saving home designing, via the Power Development Fund under Section 97(5), and publicized the derived home designs so that the general public could download the designs, free of charge.



On 18 March 2021 the OERC jointly with Chula Unisearch, Chulalongkorn University, organized the 10th Roadshow, “Young Architect Trip,” at Khon Kaen University.

The activity was part of the Project on “Young Architect ECO Home Contest,” which was funded by the Power Development Fund in Fiscal Year 2020 under Section 97(5). Also attended the event was Mr. Toranapong Leksagundilok, Senior Professional of the Power Development Fund Strategy and Planning Department of the OERC (2nd from the left).

Objective 8

To promote the use of alternative energy for electricity industry operation that renders minimal impact on the environment

8.1 Reviewed and improved the regulation of power purchase from renewable energy generation pursuant to the government policy. The OERC has gathered problems and obstacles to the issuance of regulations and notifications on the past purchase of renewable energy generation and has examined business models of power generation from renewable energy as well as regulatory models/codes of practice in other countries to be input into further review and improvement of the regulation of power purchase from renewable energy generation.

8.2 Supported the study, research and demonstration of the improvement in technologies for electricity industry operation to be efficient while causing minimal impact on the environment, and promoted the use of renewable energy in the electricity industry, via the Power Development Fund under Section 97(4). The outcomes of the funded study and research were publicized on the OERC website, for example, the project on promotion of the use of solar PV systems and energy storage systems in remote areas, and the project on sustainable electricity generation system using renewable energy for national parks and wildlife sanctuaries in Thailand.

8.3 Administered the Power Development Fund money pursuant to Section 97(5) of the Energy Industry Act of 2007—to increase knowledge, awareness and participation of the public in power-related issues. Emphasis was still placed on the build-up of knowledge about renewable energy on a continuous basis, under the theme “Affordable and Clean Energy,” focusing on the communication of issues regarding electricity from solar energy, waste, biomass and biogas as well as practical application of the knowledge gained.



“101 Days from the First Light to Hospitals with Electricity from the Sky”—an activity under the campaign, “Clean Energy for Life: Use Clean Energy for Better Quality of Life for All”

On 4 March 2021 the Energy Regulatory Commission together with the Ministry of Energy, Ministry of Public Health, Rural Doctor Foundation and alliance networks attended the pilot batch delivery of Solar-PV System Installation for 8 community hospitals in 8 provinces under the campaign “101 Days from the First Light to Hospitals with Electricity from the Sky,” which was honored by the presence of Mr. Supattanapong Punmeechaow, Deputy Prime Minister and Energy Minister, and Mr. Samerjai Suksumek, ERC Chairman, who co-chaired the delivery ceremony, and the presence of Mr. Anutin Charnvirakul, Deputy Prime Minister and Minister of Public Health, together with Dr. Supat Hasuwannakit—Director of the Rural Doctor Foundation, and representatives from 8 hospitals, who jointly represented the recipients of the Solar-PV Systems, at Sai Noi Hospital in Nonthaburi province.

Opening Ceremony of the Training “Chang Bandarn Fai Season 2”—Skill Upgrading Course



On 15 February 2021, the OERC, by Mr. Kittipong Pinyotrakool —Deputy Secretary General, together with the Director General of the Department of Skill Development, presided over the Opening Ceremony of the Training “Chang Bandarn Fai Season 2” (Technician Training)—Skill Upgrading Course on the installation and maintenance of solar cell (photovoltaic) systems at Pakorn Angsusingha meeting room, 10th floor, Department of Skill Development.



Objective 9

To administer a modern and efficient organization and build up human resource capacity to be professional in energy industry regulation

ITA
2021

Ranked

A

Scored

92.55

9.1 Upgraded the corporate operations management system towards transparency, good governance and efficient operations on a par with international standards. The OERC has undergone the Integrity & Transparency Assessment (ITA) of government agency performance, according to the criteria of the Office of the National Anti-Corruption Commission, and obtained Level A outcome, with a score of 92.55. The OERC is determined to develop rules and regulations pertaining to energy industry regulation to be up to international standards and to continuously upgrade workflows and service provision to be efficient and transparent so as to attain confidence and satisfaction of service recipients and stakeholders. Therefore, the Quality Management System (QMS) according to the ISO 9001: 2015 standard has been applied to the organization since Fiscal Year 2020, and the OERC has been ISO 9001: 2015 certified by the Management System Certification Institute (Thailand), Foundation for Industrial Development, Networking Institution of Ministry of Industry (MASCI), with the continued certification duration valid from 24 December 2021 to 23 December 2024.



On 11 March 2021, the ERC Chairman, the OERC Secretary General, together with OERC officials, joined the video production to promote and campaign for duty execution with transparency and honesty.

The ERC Chairman stressed, “Working with transparency and respect for the rights of others should be practised, starting with oneself and encouraging others in the organization to instill the value of living a transparent life among the youth so as to lay a good foundation for the society.” The OERC Secretary General encouraged OERC officials to carry out duties with honesty to create credibility and to gain acceptance from service recipients.

9.2 Developed the corporate operations management system and service provision via digital technology.

The OERC has reviewed the Digital Action Plan 2023–2027 and developed the information system, “ERC Data Sharing Platform,” for OERC internal use at the initial stage, by setting a standardized format for data collection, compilation and storage of basic information about electricity and natural gas, and developed the Application Programming Interface (API) and Web Services to provide a focal platform for data interconnection and exchange according to the established standards, including developing the e-licensing service for energy industry operation, which has been in operation since October 2021. In addition, the OERC has assessed its information security risks and prepared the standards for cyber-security audit and assessment of agencies under its supervisory authority in accordance with the criteria prescribed by the Office of the National Cyber Security Commission.

9.3 Continuously developed the human resource management system.

The ERC approved the OERC administration restructuring, effective as from 1 October 2021, and the improvement of rules and regulations on human resource management to be up-to-date. In addition, human resource potential has continuously been enhanced, focusing on insights into energy industry regulation and preparation of the basic knowledge of energy regulatory work and energy plan analysis.

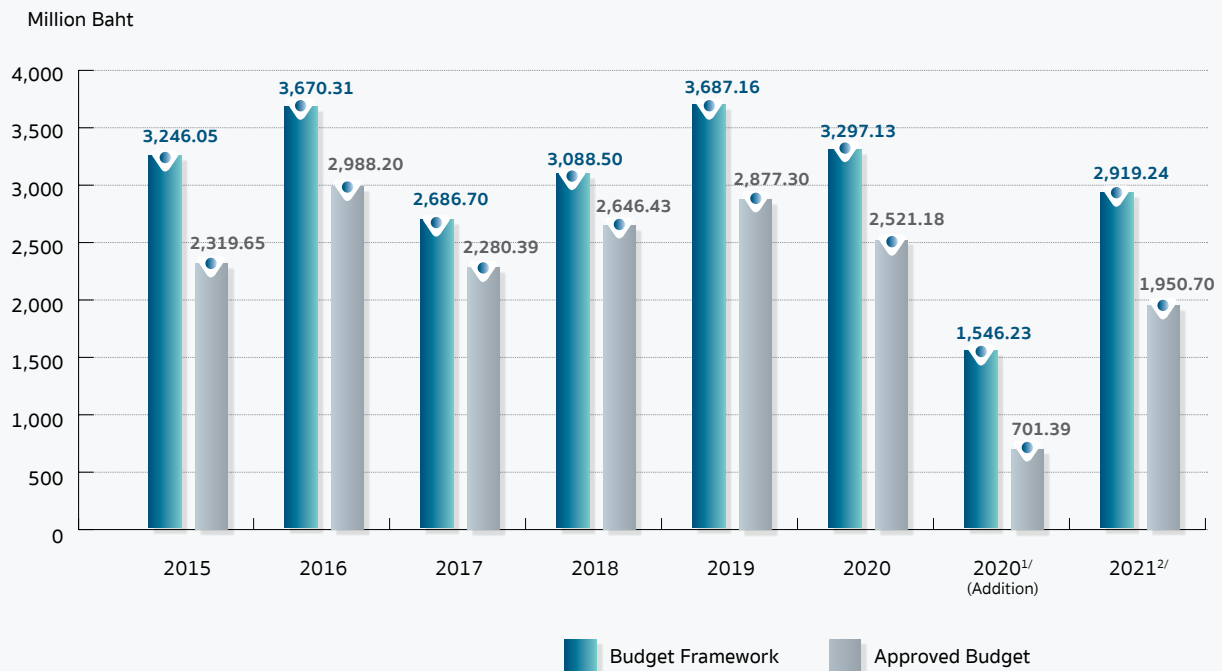




Power Development Fund Performances

in Fiscal Year 2021

Budget Framework and Approved Budget



Remarks: ^{1/} Additional budget framework in 2020 for boosting economics according to government policy and to solve problems related to COVID-19.
^{2/} No budget for Category C Fund in the 2021 budget framework.

Large-scale Fund (Category A Fund)

Name of Local Power Development Fund (PDF)	Province	No. of Power Plants	Fiscal Year 2021 Budget Framework (Million Baht)	Approved Budget in Fiscal Year 2021 (Million Baht)
PDF: Mae Moh, Lampang Province	Lampang	1	303.96	28.13
PDF: Wang Noi Power Plant, Phra Nakorn Si Ayutthaya Province	Phra Nakorn Si Ayutthaya, Pathum Thani, Saraburi	2	62.95	52.09
PDF: Gulf JP UT Co., Ltd.	Phra Nakorn Si Ayutthaya	1	36.77	25.77
PDF: Saraburi Province 1	Saraburi	10	34.96	28.07
PDF: Gulf JP NS Co., Ltd.	Phra Nakorn Si Ayutthaya	1	63.66	54.19
PDF: Chonburi Province 1	Chonburi	10	73.17	62.95
PDF: Map Ta Phut Industrial Estate, Rayong Province	Rayong	20	487.98	246.28
PDF: Bang Pakong	Chachoengsao, Chonburi	2	162.82	161.14
PDF: Ratchaburi Province 1	Ratchaburi	2	218.71	186.26
PDF: Khanom	Nakhon Si Thammarat	2	74.06	72.47
PDF: Chana Power Plant, Songkhla Province	Songkhla	4	86.69	80.81
PDF: Samut Prakan Province 3	Samut Prakan, Bangkok	3	128.89	115.39
PDF: North Bangkok Combined Cycle Power Plant	Nonthaburi, Bangkok	2	120.24	87.63
Total: 13 PDFs		60	1,854.86	1,201.17

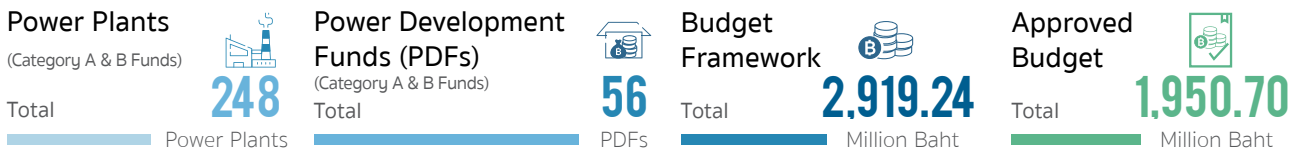
Medium-scale Fund (Category B Fund)

Name of Local Power Development Fund (PDF)	Province	No. of Power Plants	Fiscal Year 2021	Approved
			Budget Framework (Million Baht)	Budget in Fiscal Year 2021 (Million Baht)
PDF: Sirikit Dam Power Plant, Uttaradit Province	Uttaradit	1	26.71	26.21
PDF: Bhumibol Dam Power Plant, Tak Province	Tak, Chiang Mai, Lampoon	3	29.75	26.04
PDF: Phitsanulok Province 3	Phitsanulok	2	13.02	1.93
PDF: Nakhon Sawan Province 1	Nakhon Sawan, Chai Nat	5	9.18	7.67
PDF: Phetchabun Province 3	Phetchabun	4	5.06	5.05
PDF: Nam Phong District, Khon Kaen Province	Khon Kaen	4	44.81	42.94
PDF: Loei Province 1	Loei	4	17.58	17.10
PDF: Kalasin Province 1	Kalasin, Roi-et	3	6.46	6.11
PDF: Lamtakong Jolabha Vadhana Power Plant, Nakhon Ratchasima Province	Nakhon Ratchasima	2	6.29	5.89
PDF: Nakhon Ratchasima Province 4	Nakhon Ratchasima	4	11.47	10.79
PDF: Mitr Phol Bio-Power Co., Ltd.	Chaiphaphum, Khon Kaen	1	5.35	5.03
PDF: Pathum Thani Province 1	Pathum Thani, Phra Nakorn Si Ayutthaya	8	74.29	24.25
PDF: Pathum Thani Province 2	Pathum Thani, Bangkok, Nonthaburi	3	28.32	19.00
PDF: Phra Nakorn Si Ayutthaya Province 2	Phra Nakorn Si Ayutthaya	7	42.49	31.17
PDF: Phra Nakorn Si Ayutthaya Province 4	Phra Nakorn Si Ayutthaya	4	18.32	8.75
PDF: Phra Nakorn Si Ayutthaya Province 12	Phra Nakorn Si Ayutthaya	3	16.04	10.27
PDF: Ang Thong Province 5	Ang Thong, Lopburi, Sing Buri	1	6.73	3.62
PDF: Saraburi Province 2	Saraburi, Phra Nakorn Si Ayutthaya	10	40.37	32.32
PDF: Saraburi Province 3	Saraburi	8	18.78	16.13
PDF: Prachinburi Province 2	Prachinburi	8	67.40	59.50
PDF: Prachinburi Province 3	Prachinburi	3	21.47	-
PDF: Sa Kaeo Province 1	Sa Kaeo, Prachinburi	15	7.54	7.51
PDF: Sa Kaeo Province 2	Sa Kaeo	4	3.43	1.74
PDF: Chonburi Province 2	Chonburi, Rayong	3	12.93	11.20
PDF: Chonburi Province 3	Chonburi, Chachoengsao	5	46.87	32.44
PDF: Rayong Province 1	Rayong, Chonburi	13	76.46	7.62
PDF: Rayong Province 2	Rayong	5	31.05	5.98
PDF: Rayong Province 3	Rayong	3	40.38	38.38
PDF: Chachoengsao Province 1	Chachoengsao	6	36.12	34.65
PDF: Gulf JP NNK Company Limited	Chachoengsao	1	9.03	9.03
PDF: Kancharaburi Province 2	Kancharaburi	3	3.73	3.60
PDF: Kancharaburi Province 5	Kancharaburi	3	37.59	36.55
PDF: Kancharaburi Province 8	Kancharaburi	2	22.38	22.18
PDF: Kancharaburi Province 9	Kancharaburi	5	11.76	10.76
PDF: Suphanburi Province 3	Suphanburi	7	6.98	6.98
PDF: Ratchaburi Province 2	Ratchaburi, Kancharaburi	8	52.99	44.18
PDF: Ratchaburi Province 3	Ratchaburi	1	10.29	9.79
PDF: Ratchaburi Province 6	Ratchaburi	3	17.57	14.28
PDF: Rajjaprabha Dam Power Plant, Surat Thani Province	Surat Thani	1	15.01	12.62
PDF: Bang Lang Dam & Ban Santi Dam Power Plants, Yala Province	Yala	2	4.92	4.08
PDF: Samut Prakan Province 1	Samut Prakan	5	71.54	45.50
PDF: Samut Prakan Province 2	Samut Prakan, Bangkok	4	16.82	13.86
PDF: Eastern Power and Electric Co., Ltd.	Samut Prakan, Chachoengsao	1	19.10	16.83
Total: 43 PDFs		188	1,064.38	749.54

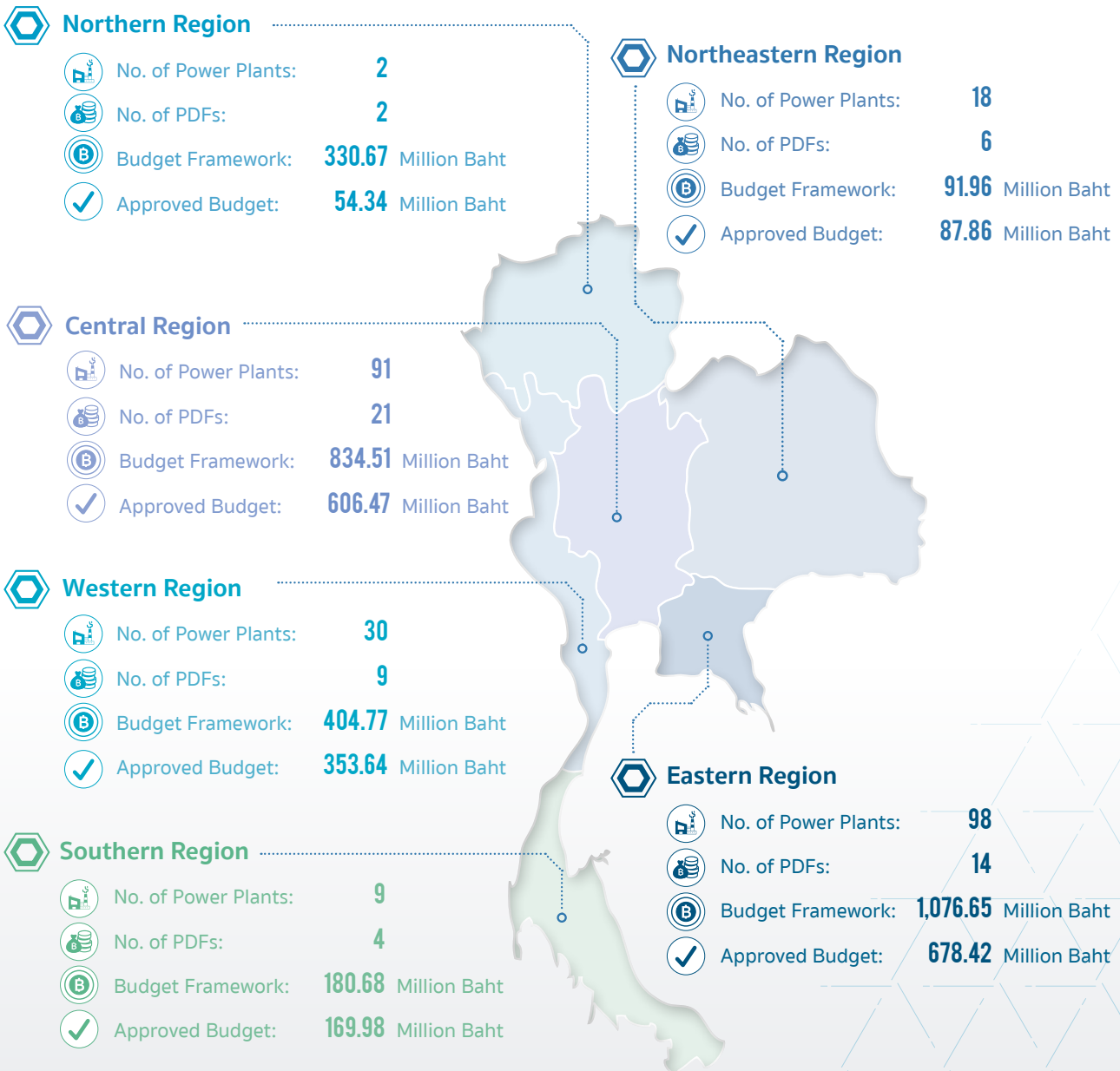
Power Development Fund Management in 2021



Overview of Power Development Fund Management Under Section 97(3) in 2021



Section 97(3) — for development or rehabilitation of localities affected by power plant operation.



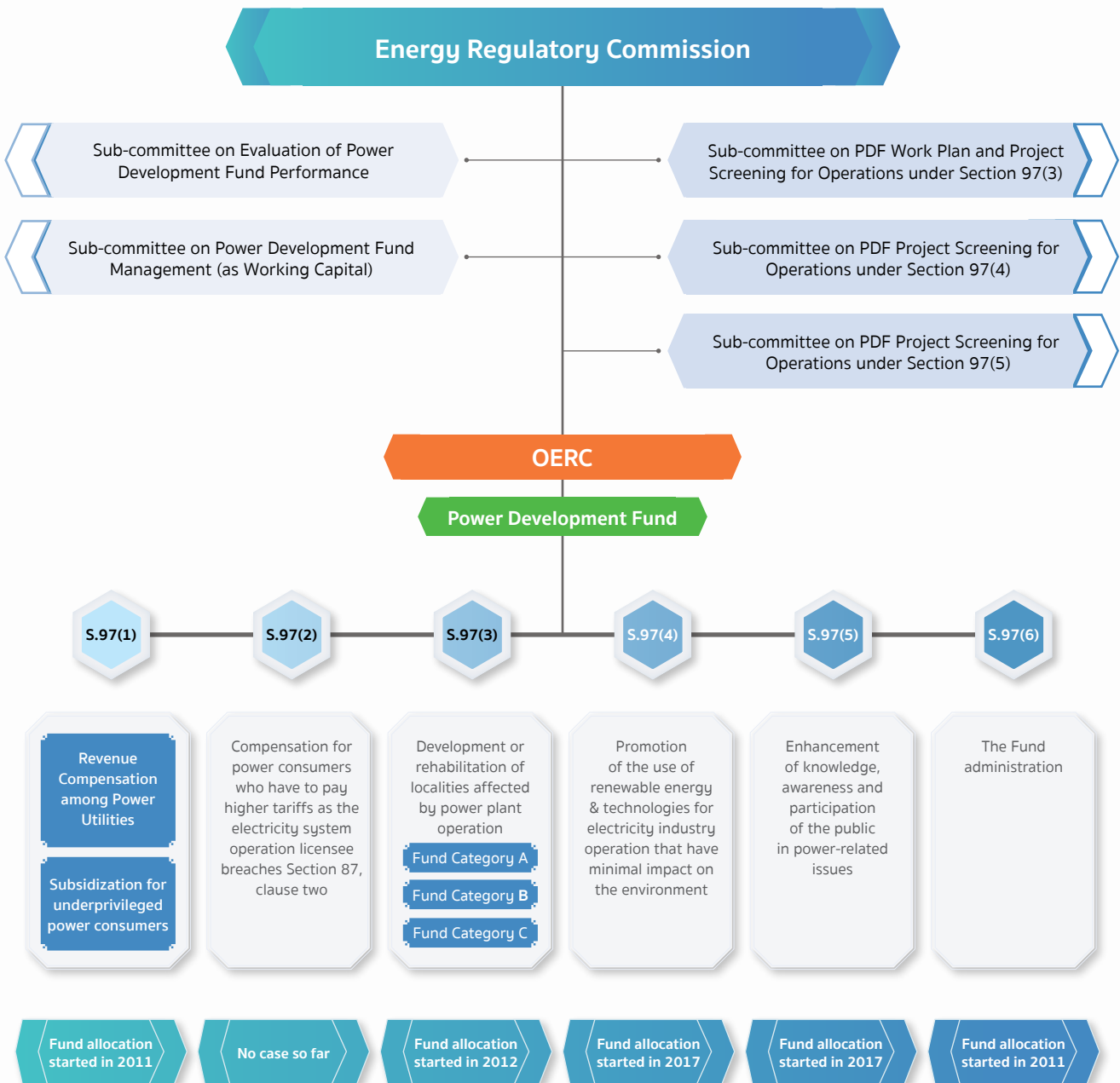
Power Development Fund Performances in Fiscal Year 2021



The “Power Development Fund (the Fund)” is working capital with no juristic person status and is set up under the Office of the Energy Regulatory Commission (OERC), which is a state agency, pursuant to the Energy Industry Act of 2007 (the Act) with the objectives to be used as the capital to support extensive extension of electricity service provision to various localities so as to decentralize prosperity to provincial areas; to develop the local communities affected by the operation of a power plant; to promote the use of renewable energy and technologies in the electricity industry operation that have minimal impact on the environment, with due consideration on the balance of natural resources; and to create fairness for power consumers. The Fund shall be used for activities under Section 97(1)–Section 97(6) of the Act, as follows:

1. to compensate and subsidize electricity industry licensees who have provided services for underprivileged power consumers or to enhance extensive electrification or to support the policy on development decentralization to provincial areas;
2. to compensate power consumers who have to pay more expensive electricity rate resulting from the licensee who has an electricity system operator breaches Section 87, clause two;
3. to develop or rehabilitate localities affected by power plant operation;
4. to promote the use of renewable energy and technologies for electricity industry operation that have minimal impact on the environment;
5. to increase knowledge, awareness and participation of the public in power-related issues; and
6. to pay for administrative cost of the Fund.

Internal Management Structure of the Power Development Fund



Remarks: Information as at 30 September 2021

The Fund operations will be under the ERC regulation in accordance with the policy framework of the National Energy Policy Council (NEPC). The Fund money and assets are not subject to remittance to the Ministry of Finance as state revenue under the law on treasury balance and the law on budgetary procedure. The OERC is tasked with the receipt, disbursement, keeping and management of the Fund money in

conformity to the regulations prescribed by the ERC, by separating the Fund account from the OERC budget. The Fund operations will be subject to an audit by the State Audit Office of the Kingdom of Thailand (SAO).

As for the performance in Fiscal Year 2021, the OERC had collected contributions to the Fund and allocated the Fund money pursuant to the objectives of the Fund utilization under Section 97 of the Act, as follows:

Fund Performance under Section 97(1)

To compensate and subsidize electricity industry licensees who have provided services for underprivileged power consumers or to enhance extensive electrification or to support the policy on development decentralization to provincial areas. In Fiscal Year 2021, the compensation and subsidies totaled 14,359 million Baht (data as at September 2021).

Revenue compensation among the Power Utilities:

to compensate electricity industry licensees who have provided extensive electricity services. In this connection, the ERC has issued an order regarding sending contributions to and disbursement of money from the Fund under Section 97(1) for revenue compensation among the Power Utilities to enhance extensive electrification. During Fiscal Years 2011–2015, the OERC collected contributions from the Electricity Generating Authority of Thailand (EGAT) and the Metropolitan Electricity Authority (MEA) for use as revenue compensation to the Provincial Electricity Authority (PEA). As from 2016 onwards, contributions have been collected from the MEA to compensate the PEA. Up to the present, the revenue compensation among the Power Utilities has totaled around 161,949 million Baht, or an annual average of about 14,722 million Baht. In Fiscal Year 2021 alone, the revenue compensation among the Power Utilities was 12,327 million Baht.

Subsidization for underprivileged power consumers:

to subsidize electricity industry licensees who have provided services for underprivileged power consumers. In this regard, the ERC has issued an order regarding electricity retail licensees' sending of contributions to and disbursement of money from the Fund under Section 97(1) for subsidizing underprivileged power consumers. Since November 2018, the OERC has collected contributions at a rate of 0% and subsidized for underprivileged power consumers according to the government policy, by paying subsidies via four electricity retail licensees who are public utilities, i.e. EGAT, MEA, PEA and Sattahip Electricity Authority—the Royal Thai Navy Welfare Concession (SEA), and about 301 private-sector electricity retail licensees at the present, from July 2011 – May 2012 under the 90-unit free-of-charge electricity consumption measure and since June 2012 up to the present under the 50-unit free-of-charge electricity consumption measure. To date, the accumulated subsidization for free-of-charge electricity consumption for underprivileged power consumers has been around 34,848 million Baht, or an annual average of about 3,168 million Baht for the implementation of the 50-unit free-of-charge measure (counting as from the year 2013 onwards). In Fiscal Year 2021, the collection and subsidization for free-of-charge electricity consumption for residential power consumers, with the installation of a 5-ampere meter and consumption not over 50 units per month for at least three consecutive months, accounted for a total sum of 2,032 million Baht.

Compensation and Subsidization for Electricity Industry Licensees Having Provided Services for Underprivileged Power Consumers or to Enhance Extensive Electrification during Fiscal Years 2011-2021

Unit: Million Baht

Category	Fiscal Year											Total
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Revenue compensation among the PUs	9,707	13,291	14,192	14,404	12,456	21,028	19,153	15,679	14,874	14,838	12,327	161,949
Subsidization for underprivileged power consumers	2,810	8,631	3,212	3,631	3,578	2,428	2,109	2,225	2,113	2,079	2,032	34,848
Total	12,517	21,922	17,404	18,035	16,034	23,456	21,262	17,904	16,987	16,917	14,359	196,797

Remarks: Data of Fiscal Year 2021 is the data as at 30 September 2021

Fund Performance under Section 97(2)

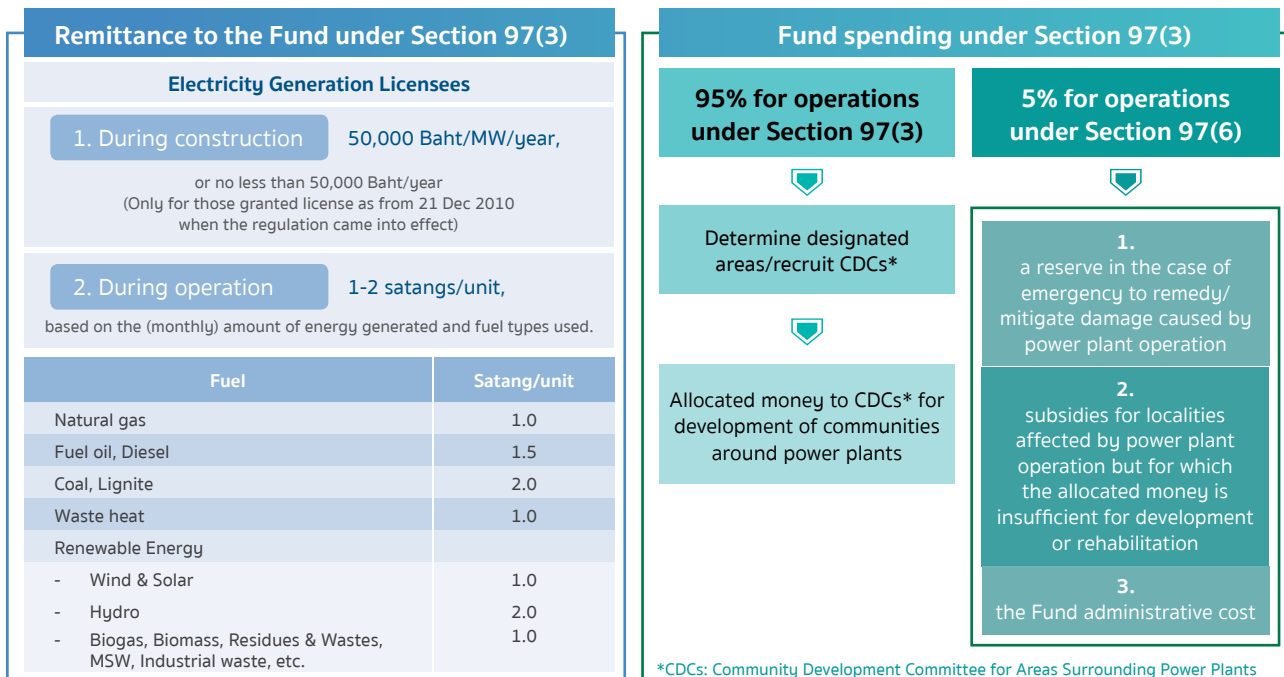
As for the Fund operation under Section 97(2), there has been no case reported so far regarding an unfair power dispatch order by the electricity system operation licensee. However, the OERC will get prepared to properly handle such a situation should any case arise.



Fund Performance under Section 97(3)

To develop and rehabilitate localities affected by power plant operation. Since 2012, the OERC has collected contributions from electricity generation licensees to the Fund, with a contribution rate based on the fuel type used for electricity generation, and allocated the Fund money in accordance with the objectives of the Fund spending under Section 97(3) of the Act. The OERC has allocated 95% of the Fund money for operations under Section 97(3) to develop communities surrounding power plants and the remaining 5% as the administrative cost of the Fund for operations under Section 97(6).

Power Development Fund Implementation under Section 97(3) to develop or rehabilitate localities affected by power plant operation





The performance in Fiscal Year 2021 can be summarized as follows.

1. Determined the designated areas of local Power Development Funds (PDFs) according to the Regulation of the ERC on the Power Development Fund for Development or Rehabilitation of Localities Affected by Power Plant Operation B.E. 2563 (2020). It is stipulated that the OERC, by and with ERC approval, issue notifications on determination of designated areas which are eligible to be beneficiaries of support from the Fund, by encompassing villages surrounding a power plant (for local PDFs established as from 1 October 2020 onwards) and encompassing Tambons (sub-districts) surrounding a power plant (for local PDFs established before 1 October 2020) within a radial distance of 1 or 3 or 5 kilometers from a power plant, based on the amount of annual electricity generation of the plant. To date, the OERC has already issued notifications on the establishment of 546 local PDFs.

Determination of Designated Areas of Local PDFs under Section 97(3)

Fund Category	Fiscal Year										
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Large-scale PDFs	10	11	11	12	12	12	13	13	13	13	14 ⁽³⁾
Medium-scale PDFs	28	40	40	49	55	55	55	62	73	73	43 ⁽⁴⁾
Small-scale PDFs	107	107	104 ⁽¹⁾	100 ⁽²⁾	214	251	278	287	408	408	489 ⁽⁵⁾⁽⁶⁾
Total	145	158	155	161	281	318	346	362	494	494	546

Remarks: Data as at 30 September 2021

⁽¹⁾ Certain Small-scale PDFs have been merged to form Medium-scale PDFs as the designated areas are overlapped.
⁽²⁾ Certain Small-scale PDFs have been reclassified as Medium-scale PDFs.
⁽³⁾ One Medium-scale PDF has been reclassified as Large-scale PDF.
⁽⁴⁾ 30 Medium-scale PDFs have been reclassified as Small-scale PDFs, and one new Medium-scale PDF has been established.
⁽⁵⁾ 65 Small-scale PDFs have been newly established.

⁽⁶⁾ Consideration will be made to annul 14 Small-scale PDFs due to the annulment of electricity generation licenses.
 No. (3) and No. (4) are the consequence of the amendment to the determination of Fund management categories pursuant to the Regulation of the ERC on the Power Development Fund for Development or Rehabilitation of Localities Affected by Power Plant Operation B.E. 2563 (2020).

2. Increased efficiency and upgraded standards of the Fund administration under Section 97(3) in continuation of the implementation in Fiscal Year 2020, by reviewing and making revisions to relevant notifications, criteria and manuals to be in line with the Regulation of the ERC on the Power Development Fund for Development or Rehabilitation of Localities Affected by Power Plant Operation B.E. 2563 (2020), which has been in effect since 1 October 2020. Moreover, the OERC has recruited new sets of Community Development Committee for Areas Surrounding Power Plants

(CDC), according to the required proportion, to decentralize authority and responsibility pertaining to community project approval, modification or cancellation to the local level as well as mobilization of the community project implementation in designated areas in order to create sustainable development or rehabilitation of areas surrounding power plants. The OERC has regulated the local PDF operations by providing knowledge and acting as an advisor, including setting a system for audits and evaluation of performance of the projects in designated areas.

3. The ERC approved the Fiscal Year 2021 budget framework for 55 local PDFs, with a combined budget of 2,919.24 million Baht. A total of 4,640 community projects in designated areas have been implemented, accounting for a total budget of 1,950.70 million Baht, involving the following aspects for community development: public health—to reduce or prevent health problems in the communities around power plants; education—to increase the educational quality of

students and teachers in government schools in community areas surrounding power plants; economics—to increase income of the communities in the vicinity of power plants; environment—to enhance or conserve the environment in areas surrounding power plants for good quality of life; public utilities—to increase access to and provision of public utility services; and community energy—to promote coexistence between power plants and communities.

Summary of the Power Development Fund Budget Approval under Section 97(3)

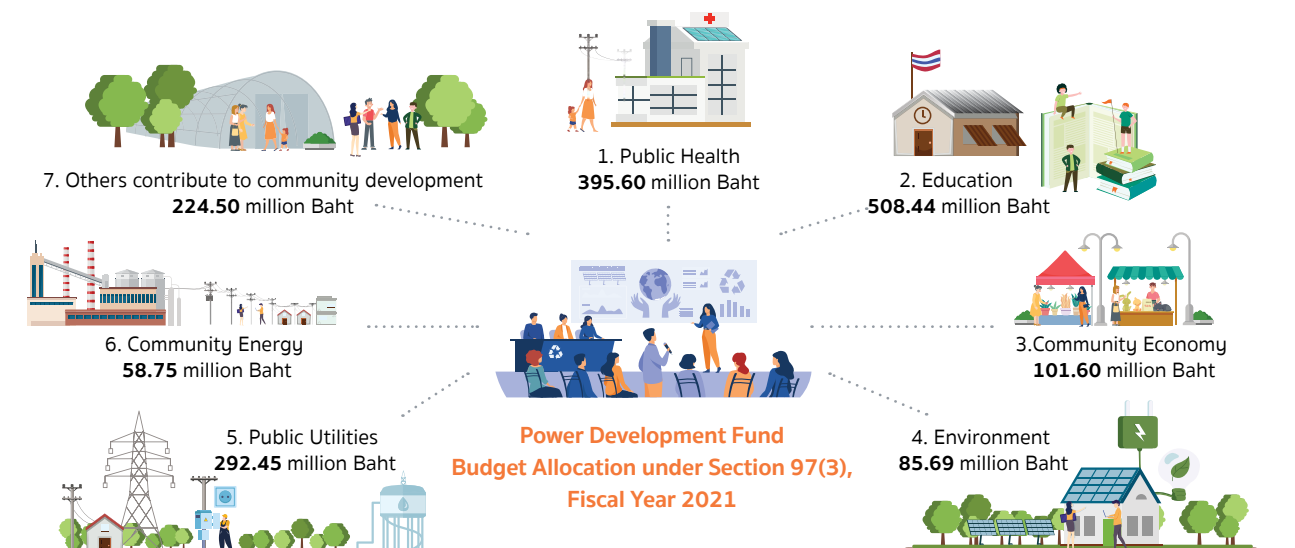
Fiscal Year	Budget Framework (M Baht)	Approved Budget							Total Approved Budget (M Baht)
		Large- and Medium-scale PDFs				Small-scale PDFs			
		No. of PDFs	Administration (M Baht)	Community Projects		Community Projects			
				No. of Projects	Budget (M Baht)	No. of PDFs	No. of Projects	Budget (M Baht)	
2017	2,686.70	67	236.29	5,560	1,989.99	145	393	54.11	2,280.39
2018	3,088.50	74	264.07	6,392	2,320.01	164	419	62.36	2,646.44
2019	3,687.16	75	273.98	7,184	2,517.57	169	498	85.75	2,877.30
2020	3,297.13	75	204.01	5,872	2,126.27	244	808	190.90	2,521.18
2020 (Addition) ⁽¹⁾	1,546.23	72	-	1,434	673.83	67	145	27.56	701.39
2021 ⁽²⁾	2,919.24	55	283.68	4,640	1,667.02	-	-	-	1,950.70

Remarks: Data as at 30 September 2021

⁽¹⁾ The ERC approved an additional budget to support the government policy to help mitigate drought problems, to create local employment in order to boost the economy and to solve public health problems due to COVID-19.

⁽²⁾ In Fiscal Year 2021, the administration of Small-scale PDFs was under revision; therefore, budget allocation was still pending.

In Fiscal Year 2021, the ERC acknowledged the result of Power Development Fund budget approval under Section 97(3) by the CDCs for implementing community projects of large- and medium-scale local PDFs, totaling 1,667.02 million Baht, which can be classified into seven work programs as shown in the figure.



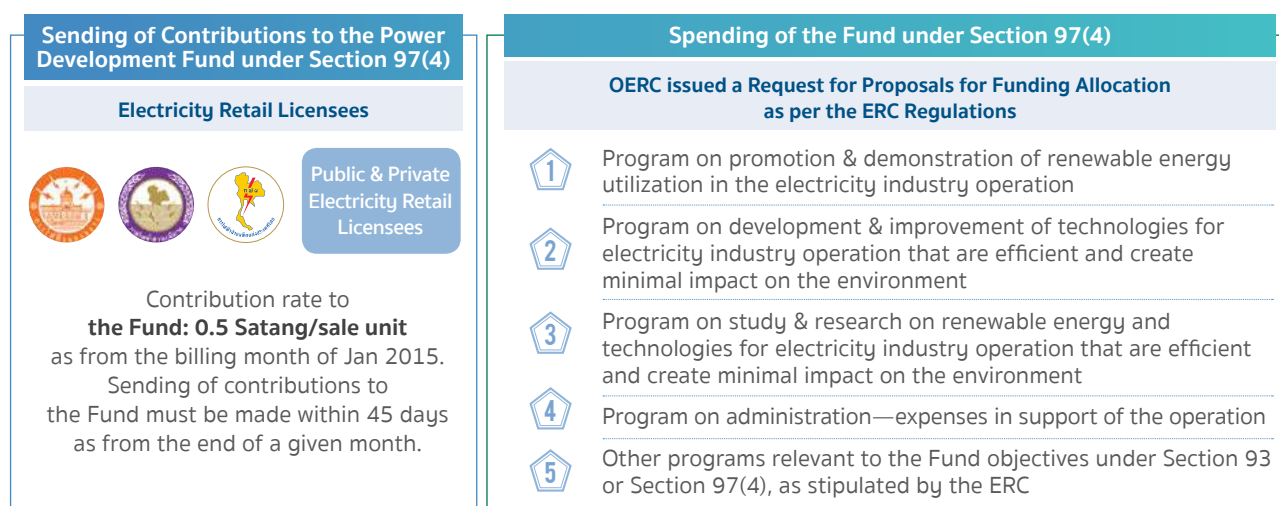
Fund Performance under Section 97(4)

With a view to promoting the use of renewable energy and technologies for electricity industry operation that render minimal impact on the environment, the ERC has stipulated that electricity retail licensees send contributions to the Fund for spending on the Fund operations under Section 97(4), pursuant to the NEPC policy framework, at the rate of 0.005 Baht per unit of electricity sale in a monthly billing cycle, effective since 31 December 2014. As a result, electricity retail licensees have been obliged to send contributions to the Fund as from March 2015 onwards. Also, the Regulation of the ERC on Criteria

and Procedures for Allocating Power Development Fund Money to Promote the Use of Renewable Energy and Technologies for Electricity Industry Operation that Have Minimal Impact on the Environment B.E. 2559 (2016) was issued by the ERC and hence, as from Fiscal Year 2017, Requests for Proposals have been issued to invite submission of local PDF projects on activities under Section 97(4) to promote the use of renewable energy and technologies for electricity industry operation that render minimal impact on the environment. The status of the Fund money allocation can be summarized as follows:

Power Development Fund Implementation under Section 97(4)

to promote the use of renewable energy and technologies for electricity industry operation that render minimal impact on the environment



Summary of the Power Development Fund Budget Approval under Section 97(4)

Fiscal Year	Budget Framework (M Baht)	Proposed Projects		Approved Projects	
		No. of Projects	Budget (M Baht)	No. of Projects	Budget (M Baht)
2017	650.00	725	2,942.56	4	18.08
2018	1,050.00	73	1,578.02	4	11.72
2019	1,880.00	54	2,149.24	9	625.56
2020	1,800.00	59	3,242.66	13	137.67
2021 ^{1/}	1,920.00	26	642.71	Work in progress	
Total	7,300.00	937	10,555.19	30	793.03

Remarks: Data as at 30 September 2021

^{1/} For Fiscal Year 2021, the OERC is still inviting submissions of project proposals under the project on promotion of electricity generation from renewable energy—Strategic Grant (with a budget of 95.08 million Baht for academic institutions and 210 million Baht for public health agencies). As for the projects under the MOU between the Ministry of Energy and the OERC, the project proposals are currently under revision.

In Fiscal Year 2021, the OERC issued the Notification on Power Development Fund Money Allocation for Promotion of the Use of Renewable Energy and Technologies for Electricity Industry Operation that Render Minimal Impact on the Environment for Fiscal Year 2021, dated 7 December 2020 and as amended dated 10 September 2021, with a total budget framework of 1,920 million Baht, comprising: (1) Open Grant projects: with a budget framework of 400 million Baht, (2) Strategic Grant projects: 620 million Baht, (3) projects contributing to electricity supply from renewable energy for remote areas with no access to or at the far end of the grid system: 500 million Baht, (4) projects in response to the policy in support of operations related to electricity industry operation under Section 97(4): 200 million Baht, and (5) projects in support of the OERC administration of the Fund: 200 million Baht.

In Fiscal Year 2021, the OERC allocated the Fund money for project proposals pertaining to promotion of electricity generation from renewable energy under the Strategic Grant category, involving the installation of off-grid solar-PV systems for schools in remote areas with no access to the grid system so as to upgrade the quality of life, particularly in terms of education, to be on a par with schools in urban areas and to be in compliance with 3 Goals out of the 17 Sustainable Development Goals of the United Nations, i.e. Goal 4: Quality Education, Goal 7: Affordable and Clean Energy and Goal 13: Climate Action. A total of 166 schools are the project beneficiaries, accounting for about 7,764 teachers and students who have received benefits.

Provision of Quality Education for Villagers in Remote Areas



The benefits that the schools will obtain from the Program on Solar-PV System Installation, which are in line with the UN Sustainable Development Goals in the parts related to access to equitable education, access to electricity by villagers in wilderness areas and reduction of climate change impact on the environment owing to promotion of renewable energy utilization, involve:

- Number of benefited schools: **166**
- Number of benefited students: **7,390**
- Number of benefited teachers: **374**
- Total number of beneficiaries: **7,764**
- Volume of electric energy supplied to the schools: **17,263 kWh/year**
- **CO₂** emission reduction = **425.55 tons of CO₂ /year**



In addition, the Power Development Fund has promoted the installation of on-grid solar-PV systems for 70 hospitals, with an installed capacity not exceeding 100 kWp/hospital, to help reduce electricity expenses and to increase the hospital potential to provide public health services.

Promotion of Renewable Energy Utilization at Public Health Agencies



The benefits that the hospitals will obtain from the Program on Solar-PV System Installation, which are in line with the UN Sustainable Development Goals:

- Good Health and Well-being
- Affordable and Clean Energy
- Climate Action

The benefits that the hospitals will obtain in terms of reduction of electricity expenses and increase in the hospital potential to provide public health services:

- Number of benefited hospitals: **70**
- Volume of electric energy generated by solar-PV systems: **10,150,000 kWh/year (70 hospitals)**
- **CO₂** emission reduction = **5,600 tons of CO₂/year**


The implementation of solar-PV system installation under the mentioned two programs can help reduce CO₂ emission by 6,025.55 tons of CO₂/year.

Fund Performance under Section 97(5)

In order to increase knowledge, awareness and participation of the public in power-related issues, the ERC has stipulated that electricity retail licensees send contributions to the Fund at the rate of 0.002 Baht per unit of electricity sale in a monthly billing cycle, to be spent on the Fund operations under Section 97(5) pursuant to the NEPC policy framework, effective since 31 December 2014. As a result, electricity retail licensees have sent contributions to the Fund as from March 2015 onwards. In addition, the ERC issued the Regulation of the ERC on the Criteria and Procedures for Allocating Power Development Fund Money to Increase Knowledge, Awareness and Participation of the Public in Power-related Issues B.E. 2559 (2016), and as amended. As from Fiscal Year 2017, Requests for Proposals have been issued to invite submissions of local PDF projects on activities under Section 97(5) to increase knowledge, awareness and participation of the public in power-related issues.

Power Development Fund Implementation under Section 97(5)

to increase knowledge, awareness and participation of the public in power-related issue

Sending of Contributions to the Power Development Fund under Section 97(5)	Spending of the Fund under Section 97(5)
<p style="text-align: center;">Electricity Retail Licensees</p> <div style="display: flex; justify-content: space-around; align-items: center;">  <div style="border: 1px solid #0070C0; padding: 5px; background-color: #D9E1F2;"> <p style="text-align: center; margin: 0;">Public & Private Electricity Retail Licensees</p> </div> </div> <p style="text-align: center;">Contribution rate to the Fund: 0.2 Satang/sale unit as from the billing month of Jan 2015. Sending of contributions to the Fund must be made within 45 days as from the end of a given month.</p>	<p style="text-align: center;">OERC issued a Request for Proposals for Funding Allocation as per the ERC Regulations</p> <ol style="list-style-type: none"> <li style="margin-bottom: 10px;">1 Program on enhancement of competency, role and knowledge about power-related issues <li style="margin-bottom: 10px;">2 Program on public relations to create awareness and foster consciousness, understanding & positive attitude towards power-related issues <li style="margin-bottom: 10px;">3 Program on promotion of participation in power-related issues, e.g. development of networking or creation of participatory networks of the public or power-related agencies <li style="margin-bottom: 10px;">4 Program on enhancement of power supply security and preparedness for electricity incidents <li style="margin-bottom: 10px;">5 Program on administration—expenses in support of the operation <li style="margin-bottom: 10px;">6 Other programs relevant to the Fund objectives under Section 93 or Section 97(5), as stipulated by the ERC

Summary of the Power Development Fund Budget Approval under Section 97(5)

Fiscal Year	Budget Framework (M Baht)	Proposed Projects		Approved Projects	
		No. of Projects	Budget (M Baht)	No. of Projects	Budget (M Baht)
2017	210.00	58	916.14	15	88.95
2018	490.00	54	734.56	9	126.92
2019	685.00	139	3,099.03	18	463.80
2020	600.00	163	3,459.98	26	476.47
2021*	600.00	Work in progress			
Total	1,985.00	414	8,209.71	68	1,156.14

Remarks: Data as at 30 September 2021

* For Fiscal Year 2021, consideration by the OERC is underway.

In Fiscal Year 2021 the OERC regulated the implementation of projects which have been granted the Fund money allocation under the Fiscal Year 2020 budget, totaling 26 projects with a combined budget of 476.47 million Baht, comprising: (1) communication to foster understanding about electricity generation from renewable energy, under the theme “Affordable and Clean Energy,” emphasizing communication on the following issues: electricity generation from solar energy, waste, biomass and biogas, totaling 20 projects with a budget of 365.287 million Baht; (2) communication to create understanding about energy industry regulation, divided into two main topics, i.e. communication about electricity industry

regulation and that about the policy on the electricity industry, totaling 3 projects with a budget of 46.855 million Baht; (3) increase in knowledge and awareness of electricity-related issues, using modern technology or social media, 1 project with a budget of 32.356 million Baht; and (4) increase in knowledge and awareness of economical and efficient use of energy, totaling 2 projects with a budget of 31.970 million Baht. However, due to the COVID-19 impact, some projects have to extend their implementation duration and adjust the formats of project activities to enable the implementation to proceed without interruption.

In Fiscal Year 2021, the ERC approved a budget framework of 600 million Baht to increase knowledge, awareness and participation of the public in power-related issues, pursuant to Section 97(5). The OERC is currently developing the funding framework in order to issue a Request for Proposals inviting submissions of local PDF project proposals on activities under Section 97(5). Emphasis will be given to practical and sustainable application of the knowledge gained.

Request for Project Proposals under Section 97(5) in 2021 Budget: 600 M Baht

<p>Big-Theme</p>  <p>Use Clean Energy for Better Quality of Life for All</p>	<p>“Communication Topics, Activities and Public Participation”</p> <div style="display: flex; justify-content: space-between;"> <div data-bbox="547 730 986 1043"> <p>Energy Transition and Climate Change</p> <ul style="list-style-type: none"> National Energy Plan: 4D 1E and relevant ERC’s role & duties Energy Innovations: EV, ESS and relevant ERC’s role & duties <p>150 M Baht (Max. 30 M Baht/project)</p> </div> <div data-bbox="1026 730 1465 1043"> <p>ERC Mission</p> <ul style="list-style-type: none"> Demand Response Energy Consumer Protection and Regional Energy Consumer Committee Public Participation Power Plant Regulation <p>160 M Baht (Max. 20 M Baht/project)</p> </div> </div>	
<p>Sub-Theme</p>  <p>Energy Transition and Climate Change</p> <p>Energy Transition to clean energy to mitigate Climate Change impacts</p>	<p>Power Plant and Power Development Fund</p> <ul style="list-style-type: none"> Role & duties of ERC and Community Development Committee for areas surrounding power plants Fund operations under Section 97(3) Participation of people in power plants’ vicinities: power plant inspection <p>250 M Baht (Max. 50 M Baht/project)</p>	<p>Knowledge and Communication Management</p> <ul style="list-style-type: none"> Management of knowledge and various forms of media Communication management of Fund operations under Section 97(3) <p>40 M Baht (Max. 20 M Baht/project)</p>

Fund Performance under Section 97(6)

To use the Fund money for the following three administrative matters: (1) the Fund administrative cost; (2) a reserve in the case of emergency to remedy or mitigate, in the first instance, damage caused by power plant operation; and (3) subsidies for development or rehabilitation of localities which are affected by power plant operation but for which the allocated money from the Fund is insufficient for such implementation.

Evaluation of the Power Development Fund Performance (as Working Capital)

The Power Development Fund is considered as working capital and hence it is required to have a performance evaluation system that is up to international standard with the application of Balanced Scorecard (BSC) principles, as stipulated by the Ministry of Finance, or with an equivalent tool to be applied. Moreover, a Third Party has to be appointed to conduct the evaluation and report the performance evaluation outcome to the Comptroller General's Department (CGD) so that the latter could collect the information and prepare a report summarizing the overall evaluation outcome of this working capital for presentation to the cabinet at the end of each fiscal year. In this connection, the OERC has conducted the evaluation of the Fund performance as working capital since Fiscal Year 2014 onwards.

In Fiscal Year 2021, the evaluation of the Fund performance, as a whole, resulted in an average score of 4.40 from the full score of 5, accounting for 88% which was above the specified benchmark and higher than the average score of 3.98, or 80%, obtained in Fiscal Year 2020. The score obtained in each aspect was as follows:

(1) Finance, with a score of 4.40, or 88%, having a rather low ratio of the operating expense and personnel expense to the Fund's total revenue, i.e. 1.36, which was close to the targeted ratio of 1.30;

(2) Response to Stakeholders' Benefits, with a score of 3.20, or 64%, because in Fiscal Year 2021 Thailand still faced the COVID-19 outbreak which had hindered the implementation of activities to create participation of alliance networks, as stipulated in the work plan;

(3) Operations, with a score of 5.00, or 100%, via the establishment of the Fund performance standards, the Fund monitoring and evaluation, and the development of the Fund's information system to cover core transactions and to be interconnected nationwide;

(4) Power Development Fund Administration & Improvement, with a score of 4.88, or 98%, via the Fund's upgrading of the risk management and internal control, the internal audit, and the information and digital management;

(5) Performance of the Managing Committee, Fund (Working Capital) Administrator, Staff & Employees, with a score of 4.94, or 99%, which was reflected in the efficient regulation of the Fund Managing Committee and the performances of the Fund Administrator, staff and employees; and

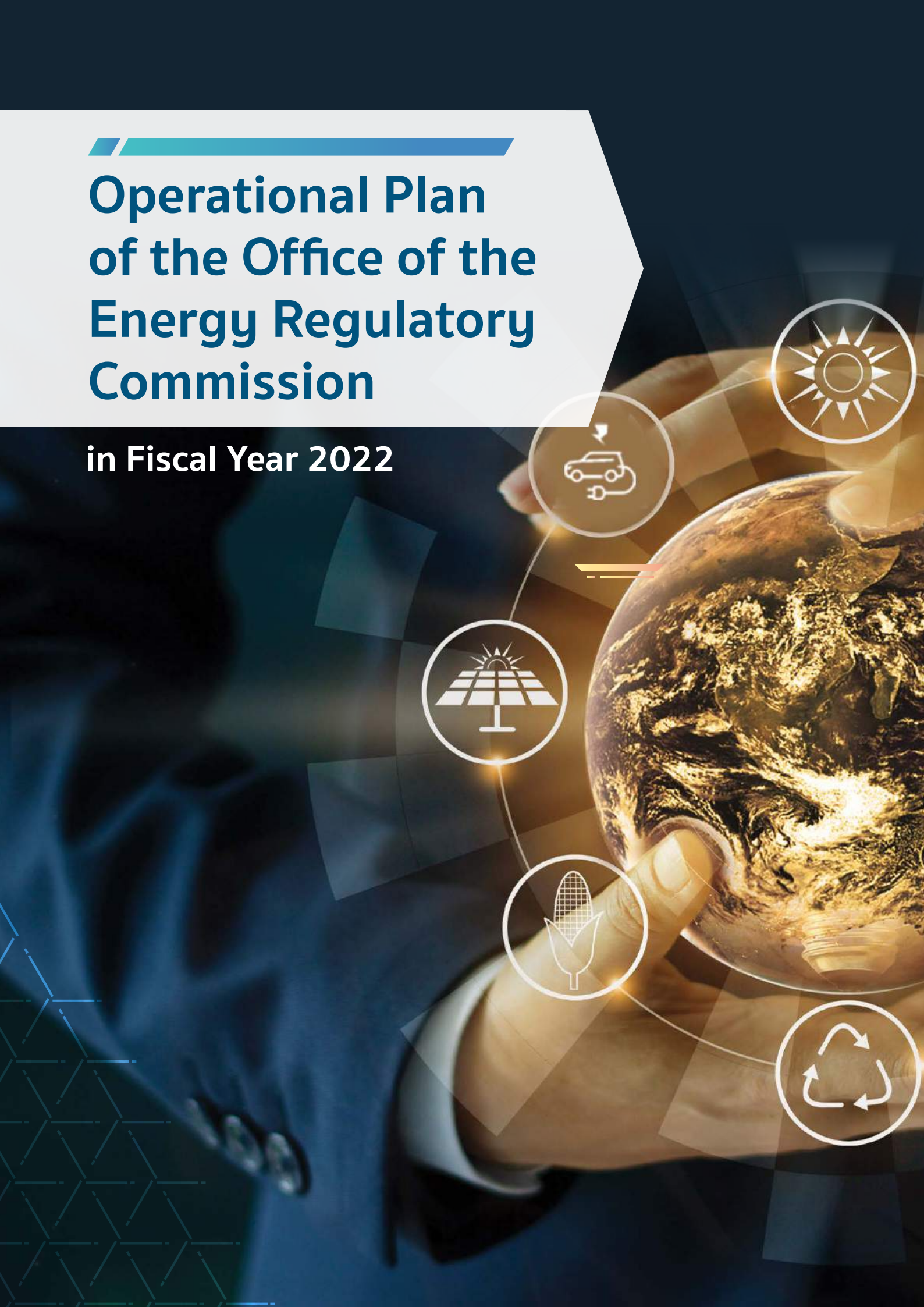
(6) Implementation pursuant to Policies of the Government/Ministry of Finance, with a score of 3.40, or 68%, resulting from the Fund's improvement regarding the submission of the fiscal year-end financial statement which was more rapid and within the targeted timeframe, when compared with the Fiscal Year 2020 implementation.

Summary of the Evaluation Outcome of the Power Development Fund Performance (as Working Capital) in Fiscal Years 2020–2021

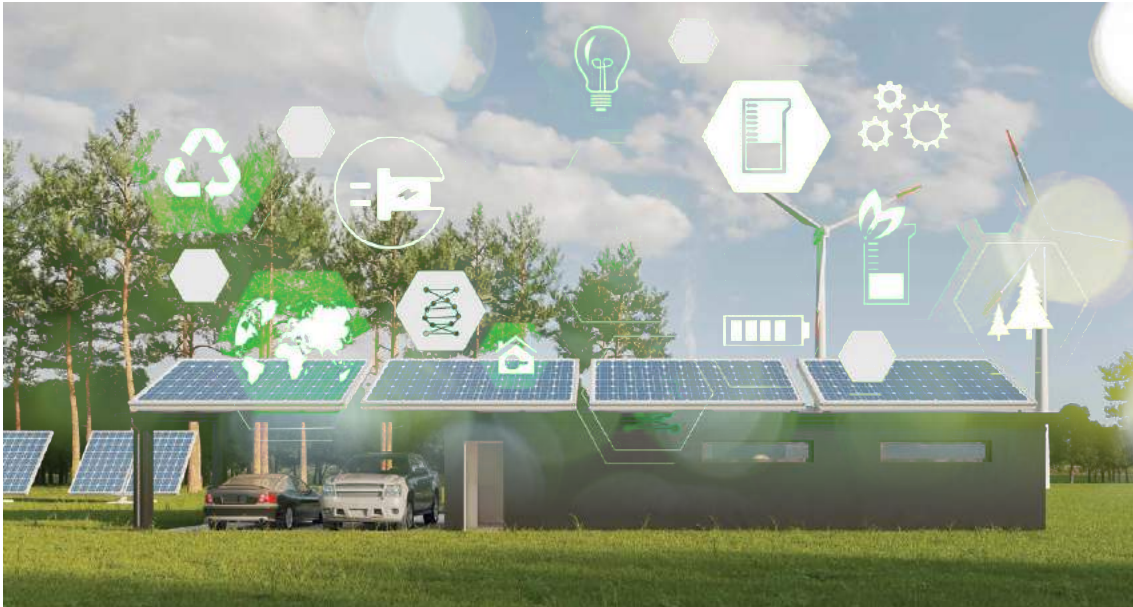
Evaluation Criteria		Fiscal Year 2020		Fiscal Year 2021 (Self-evaluation)	
		Weight	Score	Weight	Score
1.	Finance	10	5.00	10	4.40
2.	Response to Stakeholders' Benefits	20	4.53	20	3.20
3.	Operations	35	3.60	35	5.00
4.	Power Development Fund Administration & Improvement	15	4.53	15	4.88
5.	Performance of the Managing Committee, Fund (Working Capital) Administrator, Staff & Employees	10	3.72	10	4.94
6.	Implementation pursuant to Policies of the Government/Ministry of Finance	10	2.62	10	3.40
Total Score		100	3.98	100	4.40
Percentage			79.59		87.93

Operational Plan of the Office of the Energy Regulatory Commission

in Fiscal Year 2022



Operational Plan of the Office of the Energy Regulatory Commission in Fiscal Year 2022



The OERC has prepared the Operational Plan, Budget and Estimated Revenue in Fiscal Year 2022, by assessing the accomplishments of the operations pursuant to the Operational Plan in Fiscal Year 2021 and conducting a SWOT analysis of factors that affected the operations of the organization, the results of which have served as input for reviewing the Operational Plan in Fiscal Year 2022 to be in line with the targets, indicators and strategies of the main nine objectives under the Action Plan for Energy Industry Regulation, Phase 4 (2020–2022). It has been found that, despite the sluggish economic conditions as a result of the COVID-19 outbreak, continuation of the energy sector mobilization is still essential to ensure future energy security of the country and to accommodate the economic recovery as well as changes in social behavior in the Next Normal way of living—work from home, online business, cashless economy and the application of modern technologies to support various work aspects—including mobilization of the role of Thailand’s energy sector to reduce the volume of carbon dioxide emissions pursuant to the global changing trend to address the climate change, aiming to achieve net-zero emissions or carbon neutrality, as well as disruptive technology development in the energy sector. Therefore, Thailand’s energy development underscores the build-up of sustainable energy security, taking into account the reduction of carbon dioxide emissions via energy procurement and energy infrastructure development of the country that are environmentally friendly; the policy setting that supports greater proportions of the use of clean energy or renewable energy; modernization of rules and regulations as well as promotion of competition so as to encourage investments in the energy sector, emphasizing swiftness and worthiness via the application of technologies and innovations to increase efficiency of energy production and consumption.

Objective 1

To promote adequate and secure energy service provision, while ensuring fairness to both energy consumers and licensees

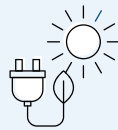


Strategy 1

Increase the potential to analyze energy policy and plans to be trustworthy and acceptable to stakeholders



(1) Analyze and give opinions on the Power Development Plan, the investment plan of the electricity industry, the natural gas procurement plan and the energy network system expansion plan, with due consideration of the integration for energy infrastructure development.



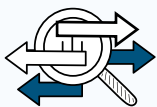
(2) Regulate the procurement of electricity generated from renewable energy according to the government policy and in compliance with the power procurement framework under the Thailand Power Development Plan 2018–2037, Revision 1 (PDP 2018 Rev.1), as approved by the cabinet on 20 October 2020, e.g. the procurement of electricity generated from waste.



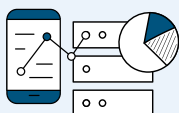
(3) Develop a database in order to compile, study, analyze and disseminate information related to energy industry operation, pursuant to Section 31(4) of the Act, by linking the data with the National Energy Information Center.

Strategy 2

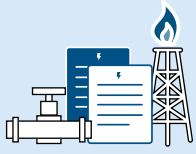
Improve the energy regulatory system to be more efficient so that energy supply would be adequate and secure.



(1) Review the energy industry structure in order to re-determine types of licenses to be in line with changing energy business models in the future.



(2) Provide online services for the one stop service (OSS) licensing for the electricity generation business and for the registration of electricity business operations that are exempt from license requirement via the website and mobile application which has been developed since Fiscal Year 2021. In addition, the operational guidelines will be established together with the audit system for inspection and evaluation of power plants, both pre- and post-commercial operation date, including establishing the operational guidelines and monitoring of the Distribution Utilities' facilitation of the connection to an electricity network system or commercial supply of electricity via the digital technology, so as to achieve the targets of Big Rock activities under the National Reform Plan (Revised Edition).



(3) Upgrade the natural gas industry licensing system, following the upgrade of the electricity industry licensing system in 2021, and integrate the provision of e-services for registration of energy business operations that are exempt from license requirement with the Government Access Channel (GovChannel) via the electronic system for the business sector (Biz Portal), in accordance with the guidelines for developing a comprehensive business facilitation system (Doing Business Portal) of the Office of the Public Sector Development Commission under the Digital Economy and Society Development Plan (“Digital Thailand”).

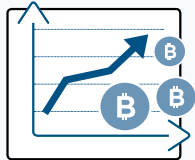
Objective 2

To protect energy consumers' benefits in terms of both tariffs and service quality



Strategy 1

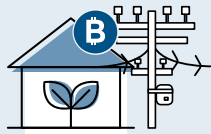
Revise the criteria for regulating energy tariffs (electricity and natural gas) to be transparent and to better meet international standards.



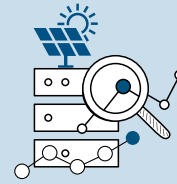
(1) Issue a notification on the use of the manual for preparing accounting and financial reports and the stipulation of the formats of accounting and financial reports so that natural gas industry licensees could prepare such reports in accordance with the stipulated criteria and formats to be used for auditing and regulating tariffs in the natural gas industry to be cost reflective and in line with the international standards (Uniform System of Accounts: USOA).



(2) Establish the framework for electricity tariff setting to support the policy on promotion of competition in the electricity industry to accommodate the entry of Prosumers, including considering alternative tariffs for electricity consumers, as deemed appropriate and corresponding to the situation, for example, the tariff for pre-paid electricity consumers and the tariff for those who cooperate in enhancing the electricity system efficiency under the temporary demand response programs, pursuant to the policy on determination of the national electricity tariff structure for 2021–2025, which was approved by the NEPC on 1 April 2021.



(3) Determine guidelines for providing subsidies for targeted low-income household electricity users (Targeted Subsidy) jointly with the Bureau of Budget, Ministry of Finance, in order to avoid duplication with the current benefits provided for state-welfare-card holders and issue a notification or regulation of the ERC on determination of the targeted subsidy framework to assist the underprivileged.



(4) Analyze and prepare the data system requirements for the Data Analytic Platform development to be used for reporting data and regulating energy tariffs as well as analyzing the impact and determining measures in emergency situations, such as relief measures for each category of electricity consumers during the outspread of COVID-19, and for determining service charges for the trading of electricity generated from renewable energy and for a competitive electricity market in the future.

Strategy 2

Regulate electricity and natural gas service quality to meet international standards as well as facilitate service users in terms of timely solutions to problems related to service provision and extensive service provision.



(1) Issue the notification on the standards of energy service provision contracts for electricity consumers under Schedule 1–Schedule 8, i.e. Residential, Small General Service, Medium General Service, Large General Service, Specific Business Service, Non-profit Organizations, Water Pumping for Agricultural Purposes and Temporary Power Consumption.



(2) Prepare a recommendation about compensation to electricity consumers and compensation rates in the event that the licensees fail to provide services according to the stipulated energy service standards.



(3) Analyze and prepare the data system requirements for the Data Analytic Platform development for regulating energy service quality standards to meet the prescribed criteria.

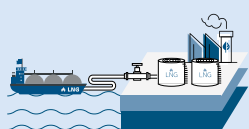
Objective 3

To promote competition in the energy industry and prevent abusive use of dominance in energy industry operation

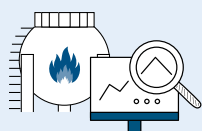


Strategy

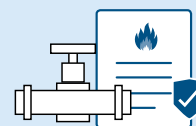
Increase the competitive edge in electricity and natural gas industry according to the National Energy Reform Plan.



(1) Regulate the implementation of the Guidelines on Promotion of Competition in the Natural Gas Industry, Phase 2, approved by the NEPC on 1 April 2021, namely: the LNG Terminal capacity management, including improvement of terms and conditions; the Gulf gas management to sufficiently meet the demand of gas separation plants; the regulation of PTT's utilization of Bypass Gas to be in compliance with the stipulated framework; the regulation of the operations according to the framework for ordering power dispatch; and the audit and assessment of the cost of electrical equipment modifications to accommodate the 4th adjustment of natural gas quality control range in the natural gas system (C-day 4), according to the guidelines on natural gas quality adjustment (Changeover Day: C-Day) approved by the ERC in Fiscal Year 2021.



(2) Prepare regulatory guidelines for relevant natural gas businesses in the future to accommodate the Regional LNG Trading Hub development, by following up and collecting operational data of PTT LNG Hub under the ERC Sandbox Program and regulating the LNG export (Reloading) to be in compliance with the LNG Reloading framework for PTT's long-term gas sale agreements, as approved by the NEPC on 1 April 2021, to support the goal of the National Reform Plan (Revised Edition) regarding the Regional LNG Trading Hub development in Thailand in the future.



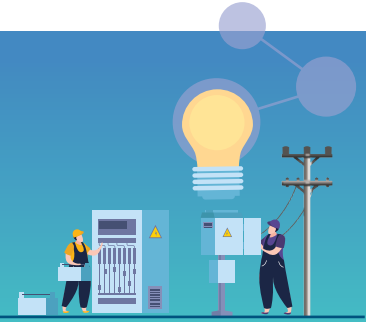
(3) Establish the regulatory guidelines for competitive electricity industry to support the trading of electricity generated from renewable energy (RE 100), consisting of the Regulatory Guidelines & Code of Conduct to define the scope of operations and roles of the ERC and concerned agencies to accommodate the promotion of competition in the electricity industry according to the National Reform Plan (Revised Edition).



(4) Analyze and prepare the data system requirements for the Data Analytic Platform development for reporting data and for regulating competition in the energy industry.

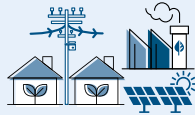
Objective 4

To promote fair and transparent energy network system service provision, without unjust discrimination



Strategy

Develop the service provision standards of the energy network systems to be up to international standards.



(1) Follow up and gather information about the operations of the electricity distribution systems pursuant to the Third Party Access Framework for the Use of or Connection to an Electricity Network System (TPA Framework) and the wheeling charge rates applied under the ERC Sandbox Program in order to review the TPA Framework and regulate the Codes for the Use of or Connection to an Electricity Network System (TPA Codes) of the licensees, and also establish the framework for determining wheeling charge rates of the electricity transmission and distribution systems to be reasonable in order to accommodate the promotion of competition in the electricity industry in the future.



(2) Review the security standards of the energy network systems, equipment and energy network system operators.

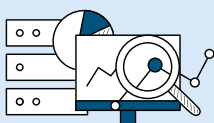
Objective 5

To promote efficient energy industry operation and ensure fairness to both licensees and energy consumers



Strategy

Promote energy industry operation to be efficient and fair to licensees and energy consumers.



(1) Conduct post audits of energy industry operation to ensure compliance with the licensing terms and further develop the environmental audit system which was introduced in Fiscal Year 2021, by developing a surveillance system for monitoring the environmental quality of power plants to enable the management of Big Data from the Continuous Emission Monitoring System (CEMS), which reports data online to the OERC, for use in the regulation of environmental standards.



(2) Disseminate research work, funded by the Power Development Fund under Section 97(4) of the Act, on efficiency improvement in the electricity industry operation and energy management to accommodate innovative energy technologies.

Objective 6

To protect rights and liberty of energy consumers, local communities, the general public and licensees in terms of participation, accessibility, utilization and management of energy under the criteria which are fair to all parties

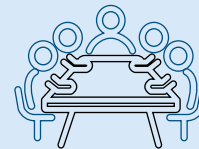


Strategy

Develop a systematic participation process so that energy consumers, local communities, the general public and licensees could participate in all stages.



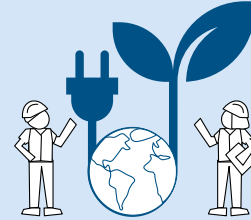
(1) Evaluate the creation of participation process in the energy industry regulation according to the ERC regulation on hearing and fostering understanding of the public and stakeholders regarding consideration of the issuance of electricity generation licenses and audits of electricity generation licensees' compliance with environmental measures, including the electricity tariff adjustment/ F_t rates announced in Fiscal Year 2021, in order to improve the participation process so that energy consumers, local communities, the general public and licensees could be confident that energy industry regulation is transparent and fair.



(2) Conduct the recruitment of Regional Energy Consumer Committees (RECCs) in Fiscal Year 2022 and enhance the RECC potential via building up their knowledge and understanding of the following issues: legal, good governance principles, energy, negotiation, participation and networking development, so that the knowledge obtained could be used to further create public awareness in their respective responsible areas and to create networking of energy consumer protection.



(3) Reform the energy consumer protection mechanism by executing a Memorandum of Understanding with Thailand Consumers Council (TCC) to create cooperation in energy consumer protection and in defending energy consumers' rights and freedoms.



(4) Manage the Power Development Fund in compliance with its objectives under Section 97 of the Act. In Fiscal Year 2022, an estimated budget framework of 21,497 million Baht are earmarked for the compensation and subsidization of service provision for underprivileged power consumers or the enhancement of extensive electricity service provision, pursuant to Section 97(1); the development or rehabilitation of localities affected by power plant operation, with emphasis on decentralization of administrative powers to the communities to attain sustainable development of local communities (good quality of life) and to encourage participation of the communities in designated areas in the audits of community project implementation as well as the inspection and evaluation of the project implementation and the spending of Power Development Fund, pursuant to Section 97(3); the promotion of the use of renewable energy and technologies for electricity industry operation that render minimal impact on the environment, pursuant to Section 97(4), by revising relevant regulations and notifications to promote the use of renewable energy by government agencies and communities in areas at the far end of or with no access to the grid system and to promote renewable energy utilization according to the targets/policy of the government, such as RE 100, including the study and research that contribute to the promotion or regulation of renewable energy utilization; and the increase of knowledge, awareness and participation of the public in power-related issues, pursuant to Section 97(5).



(5) Develop the information system on Power Development Fund management further to the development made in Fiscal Year 2021.

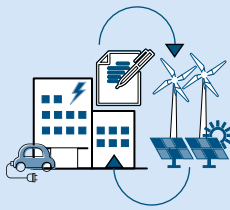
Objective 7

To promote economical and efficient use of energy and resources in the energy industry operation and to raise public awareness of energy saving as well as renewable energy utilization, with due consideration of environmental impacts and the balance of natural resources

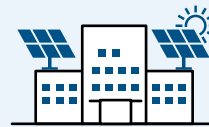


Strategy 1

Upgrade the regulatory system to encourage the operators to use resources for energy industry operation economically and efficiently so as to be prepared for the changing energy world driven by the 3-D trend: Decarbonization, Digitalization and Decentralization.



(1) Determine Demand Response measures.



(2) Promote the use of technologies for electricity industry operation that have minimal impact on the environment, via the Power Development Fund under Section 97(4), by providing a subsidy for investment capital in improving technologies used for electricity industry operation to be eco-friendly and by supporting the study, research and development of technologies for electricity industry operation that have minimal impact on the environment, and publicize the knowledge derived from the study and research to stakeholders, extensively and continuously.

Strategy 2

Promote economical and efficient use of energy as well as the use of renewable energy.



» Educate the public and raise their awareness of the use of renewable energy, including economical and efficient use of energy, by providing support via the Power Development Fund under Section 97(5). In Fiscal Year 2022, dissemination will be made on energy-saving home designs, derived from a funded project in Fiscal Year 2020, so that the general public could practically make use of and further disseminate the home designs.

Objective 8



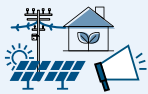
To promote the use of renewable energy for electricity industry operation that renders minimal impact on the environment

Strategy

Promote the exploitation and development of renewable energy resources so that electricity industry operation would be eco-friendly.



(1) Study the guidelines for revising Power Purchase Agreements (PPAs) for renewable energy generation to be suitable for the characteristics of each type of power plants and the actual power purchase in the power system.



(2) Disseminate knowledge and create understanding of the public about power generation from renewable energy, via the Power Development Fund under Section 97(5).

Objective 9



To administer a modern and efficient organization and build up human resource capacity to be professional in energy industry regulation

Strategy 1

Upgrade the operations management system to be modern and up to international standards so that responses to the needs and service provision would be convenient, rapid, transparent and professional.



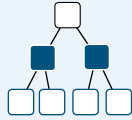
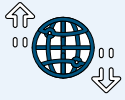
(1) Develop the corporate operations management system to be up to international standards via the application of the Quality Management System (QMS) according to the ISO 9001: 2015 standards, focusing on creating knowledge and understanding about the requirements under the ISO 9001: 2015 standards, including the performance assessment and further development of the Quality Management System, on a continuous basis, so that the operations would be more efficient and hence will reduce problems and complaints caused by internal operations of the OERC.



(2) Upgrade the corporate operations management system in terms of integrity and transparency, by undertaking activities according to the National Anti-Corruption Action Plan to be in compliance with the criteria of the Integrity & Transparency Assessment (ITA) of government agency performance.



(3) Revise and amend the Energy Industry Act of 2007, based on the ex-post evaluation of the legislation, or the evaluation of the effectiveness of regulations after enforcement, conducted in 2021, and carry out the ex-post evaluation of secondary laws in continuation from Fiscal Year 2021 to cover all relevant laws.



(4) Upgrade the corporate operations management system and service provision via the digital technology to be in line with the Digital Thailand (or the national digital development plan for the economy and society), as follows:

1) Provide online services (e-services) for the issuance of electricity industry licenses (e-licensing) and the registration of electricity industry businesses which are exempt from license requirement, and develop the e-service system further from 2021 to cover all types of energy industry licensing, including improving the e-petition system to provide services regarding the acceptance of complaints via the system designed in 2021 in order to facilitate energy consumers in filing complaints, tracking the status of their complaints and getting notification of the decisions made, and also to process relevant data for use in the evaluation of the e-petition service.

2) Develop the ERC Data Sharing Platform (the information system for regulation) in continuation from Fiscal Year 2021, by gathering data requirements and data reporting formats to improve the platform so that the operators could report their data via the digital system, and the data will be linked with the OERC's database system that supports energy industry regulation for use in the analysis and processing, of which the results will be used in all aspects of regulatory work, e.g. the provision of opinions on energy plans, electricity procurement regulation, natural gas procurement management, environmental standards regulation, service quality standards regulation and energy tariff regulation. The data in the ERC Data Sharing Platform will be displayed in the form of a dashboard to provide the ERC and the OERC management with the information for their energy industry regulation or decision-making and will also be disseminated as overview information about energy industry operation to the public in the future.

3) Develop the OERC's operating systems, emphasizing the use of digital technology to improve efficiency of the organizational management; particularly, in Fiscal Year 2022 improvement will be made on the Power Development Fund administration system and the accounting & finance system to be more efficient, and the ERC Smart Audit Platform will be developed in order to enhance the efficiency of environmental impact audits.

Strategy 2

Develop human resource capability to be professional in energy industry regulation.



- » Improve the human resource development to be more systematic—taking into account the following issues: the analysis of training needs, the long-term training roadmap, individual development plans, including the training design, so as to develop necessary skills for duty execution as well as in-depth knowledge about energy industry regulation—and set an evaluation system to assess the personnel competency development. In addition, cooperation will be made with other regulatory agencies/concerned agencies in undertaking a Secondment Program, or the exchange of employees through temporary assignments to work with another organization, in order to enhance the personnel qualifications to have a broad vision, understand various aspects of the energy business and acquire expanded work experience.



Operational Plan of the Power Development Fund in Fiscal Year 2022

The ERC has devised the Power Development Fund Strategic Plan, No. 5 (2020 – 2024) to serve as the framework for the Power Development Fund (“the Fund”) management, which corresponds with the Action Plan for Energy Industry Regulation, Phase 4. Emphasis is placed on efficiency enhancement of the Fund administration and promotion of stakeholders’ participation so as to meet the needs of all concerned.

In Fiscal Year 2022, the ERC will focus on efficiency enhancement of the Fund administration and improvement of the Fund workflow to be more efficient, by applying the results of the contest among local Power Development Funds (local PDFs) and community projects in designated areas, including the success of prototype community projects, to improve the Fund administration and the implementation of PDF projects under Section 97(3) to be suitable and correspond with changing situations at the present time so that the community development would be sustainable under good governance principles. In addition, improvement of regulations, manuals and criteria of the Fund money allocation for operations under Section 97(4) and Section 97(5) will be made so as to achieve greater efficiency and to be more in line with the Fund objectives.

In addition, the information system and digital system will be further developed to accommodate integrated operations pursuant to the missions of the Fund. This will facilitate the interconnection of information and learning via the knowledge management (KM) system as well as the Fund website. The management system, including the audit and evaluation of projects that have received the Fund money allocation, will also be improved, continually from Fiscal Year 2021, to be up-to-date and correspond with changing situations in order that the Fund operations will be rapid, efficient and that the quality of service provision for stakeholders as well as the general public will better meet their needs.

Plans have also been formulated to conduct proactive public relations activities in each area to create awareness of the Fund operations and to disseminate information about benefits to be obtained from the Fund operations. This aims to increase awareness and enhance a positive image of the Fund operations, which will then help create a positive attitude towards coexistence between power plants and surrounding communities.



Highlights of the Operational Plan of the Power Development Fund in Fiscal Year 2022

Strategy 1

Upgrade the development and rehabilitation of the communities surrounding power plants

- » Revise the structure and work programs of community projects to upgrade the implementation of community projects, aiming to improve quality of life.
- » Develop or rehabilitate localities affected by power plant operation.
- » Develop potential of the personnel involved in the Fund.
- » Carry out public relations activities and create alliance networks for the operations of local PDFs.

Strategy 3

Build up knowledge, awareness and participation of stakeholders in the electricity sector

- » Build up potential, promote the roles and increase power-related knowledge of the public or concerned personnel.
- » Carry out public relations to raise awareness, consciousness, understanding and positive attitudes towards electricity-related matters.
- » Promote participation in order to develop information networks and cooperate with concerned agencies relating to electricity.
- » Support energy security enhancement and preparedness for electricity-related incidents.

Strategy 2

Promote the regulation and development of electricity industry operation that is efficient and eco-friendly

- » Promote and demonstrate the use of renewable energy in the electricity industry operation, e.g. the use of renewable energy in remote areas and areas at the far end of the grid system, promotion of prototype renewable energy utilization in various agencies, promotion of 100% renewable energy generation in pilot areas and promotion of microgrid power generation.
- » Develop and improve technologies for the electricity industry operation to be more efficient and create minimal impact on the environment.
- » Manage the knowledge gained from the study and research (KM) (to be further developed or to be put into practical applications).

Strategy 4

Increase efficiency of the Fund administration to be able to respond to the needs of stakeholders

- » Regulate the Fund money administration.
- » Follow up and evaluate the Fund performance.
- » Review regulations, notifications and manuals pertaining to the Fund operations and establish the operational standards for local PDFs.
- » Build up capacity of the Fund personnel to be ready to perform their duties efficiently.
- » Develop and improve the information system of the Fund to cover core transactions and to be interconnected nationwide.

A photograph of a business meeting around a table. Several people are looking at documents and a laptop. One person is pointing at a document with a green pen. The documents contain charts and graphs. A white mug is on the table. A blue arrow-shaped graphic is overlaid on the top left, containing the text 'Abbreviations'.

Abbreviations

Abbreviations

Act, The	Energy Industry Act B.E. 2550 (A.D. 2007)
Adder	Additional energy purchasing price
CDC	Community Development Committee for areas surrounding a power plant
CEPA	Committee on Energy Policy Administration
COD	Commercial Operation Date
EGAT	Electricity Generating Authority of Thailand
EIA Report	Environmental Impact Assessment Report
EPPO	Energy Policy and Planning Office
ERC	Energy Regulatory Commission
F _t	Automatic Power Tariff Adjustment Mechanism
Fund, The	Power Development Fund
GW	Gigawatt—a unit of electric power equal to 1,000 megawatts, or 1,000,000 kilowatts or 1,000,000,000 watts
GWh	Gigawatt hour—a unit of energy representing 1,000 megawatt hours, or 1,000,000 kilowatt hours or 1,000,000,000 watt hours
IPP	Independent Power Producer—a large-scale private power producer
IPS	Independent Power Supply—the generation of power for own use
Managing Committee	Managing Committee on Power Generation from Renewable Energy Promotion
MEA	Metropolitan Electricity Authority
MW	Megawatt—a unit of electric power equal to 1,000 kilowatts or 1,000,000 watts
NEPC	National Energy Policy Council
OERC	Office of the Energy Regulatory Commission
PDP	Thailand Power Development Plan
PEA	Provincial Electricity Authority
PPA	Power Purchase Agreement
PTT	PTT Public Company Limited
RECC	Regional Energy Consumer Committee
Ror Ngor 4: Factory Category No. 88 License	Power Generation Facility Operation License
SCOD	Scheduled Commercial Operation Date
SO	System Operator, an entity under EGAT, being responsible for Load Forecast to be used for ordering power dispatch of individual power plants
SPP	Small Power Producer
TSO	Transmission System Operator—an entity entrusted with controlling the transmission of energy in the form of natural gas or electricity at national or regional levels
VSPP	Very Small Power Producer