

Regulatory Challenges and Economic Impacts of COVID-19

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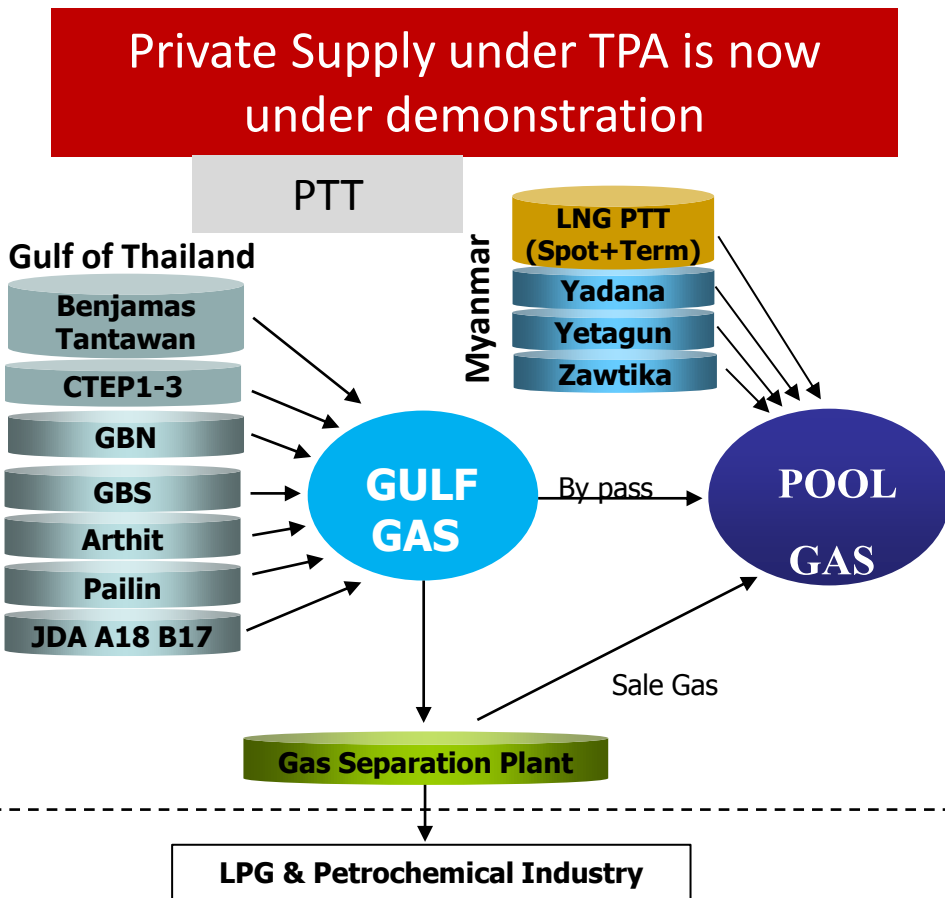
**APER Video conference
Friday, 14 August 2020**

Topics to Be Covered

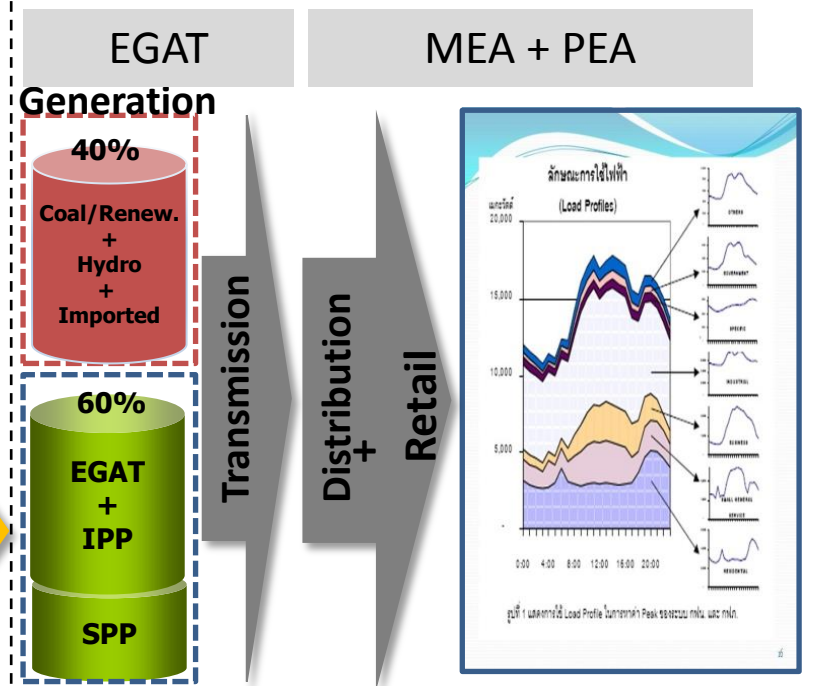
- 1) Thailand Electricity and Gas Supply Structure**
- 2) Impact of COVID-19 Pandemic**
- 3) Lessons Learned**

1) Thailand Electricity and Gas Supply Structure

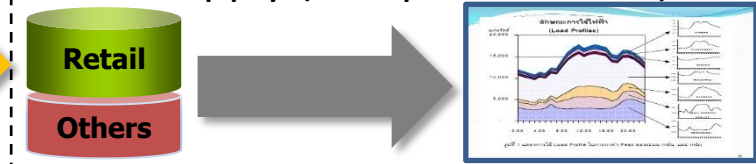
Public Supply (Single Buyer)



Public Supply (Single Buyer)



Private Supply (Competitive Price)



2) Impact of COVID-19 Pandemic

Major Impact of COVID-19 Pandemic

Fact

- 1) Declare the State Emergency / Work from Home
- 2) Social Distancing Policy
- 3) Mobility restrictions -- No inter-province travelling / No tourists from abroad
- 4) Less demand of oil and gas



Conditions

- 1) Less electricity demand but still binding with PPA conditions
- 2) Over Supply of world LNG but less opportunity due to the Term-LNG
- 3) Lower LNG Price than piped gas but still struck with minimum take condition of piped gas contract
- 4) Prepare for uncertainty situations, such as fluctuation in demand/exchange rate

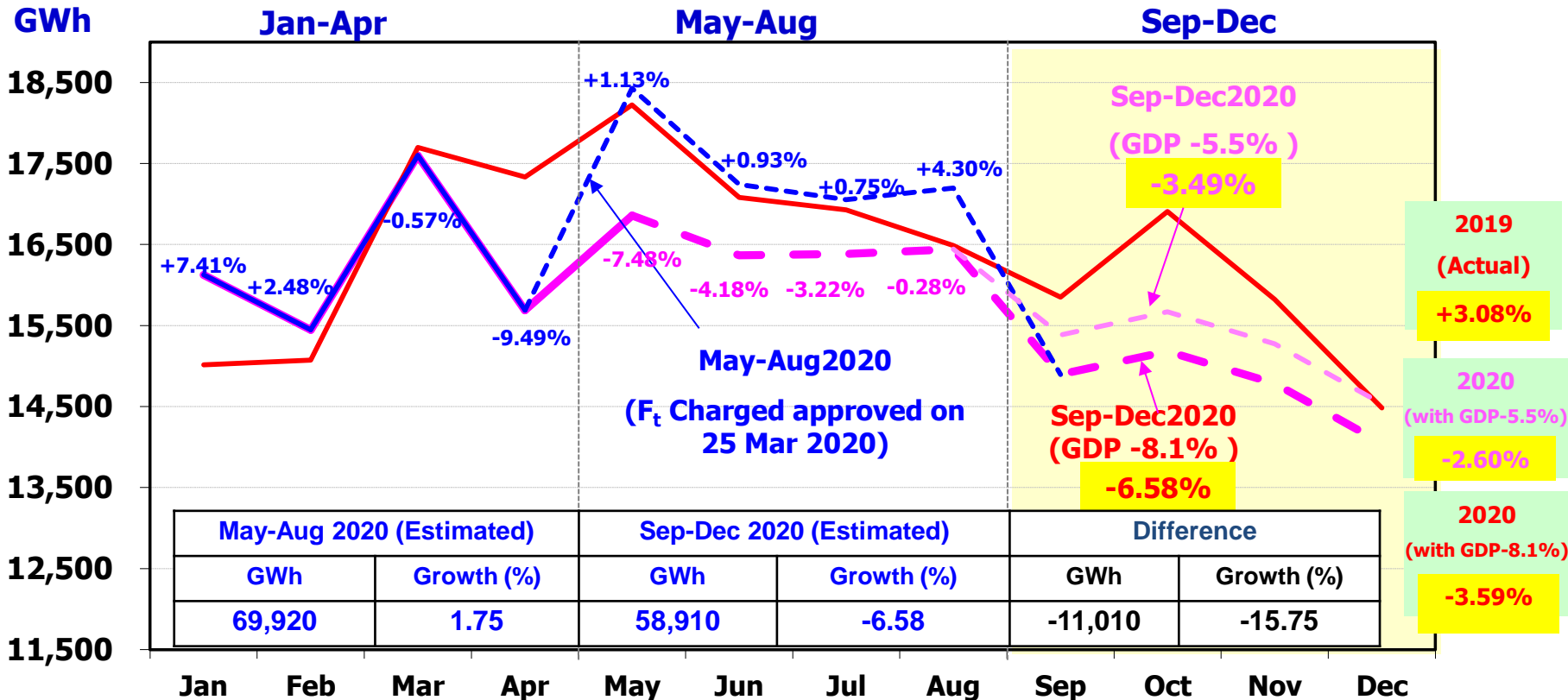


Actions

- 1) Manage gas supply contract
- 2) Manage power generation mixed
- 3) Provide financial support for electricity users

2.1) Demand: Forecast vs Actual

Net Generation 2019-2020



Remarks: Estimated Generation Units of EGAT and purchase from private producers, based on 5-year historical data (Load Profile)

2.2) Prepare for Generation Mix in 2020

Estimated Generation Mix up to December 2020

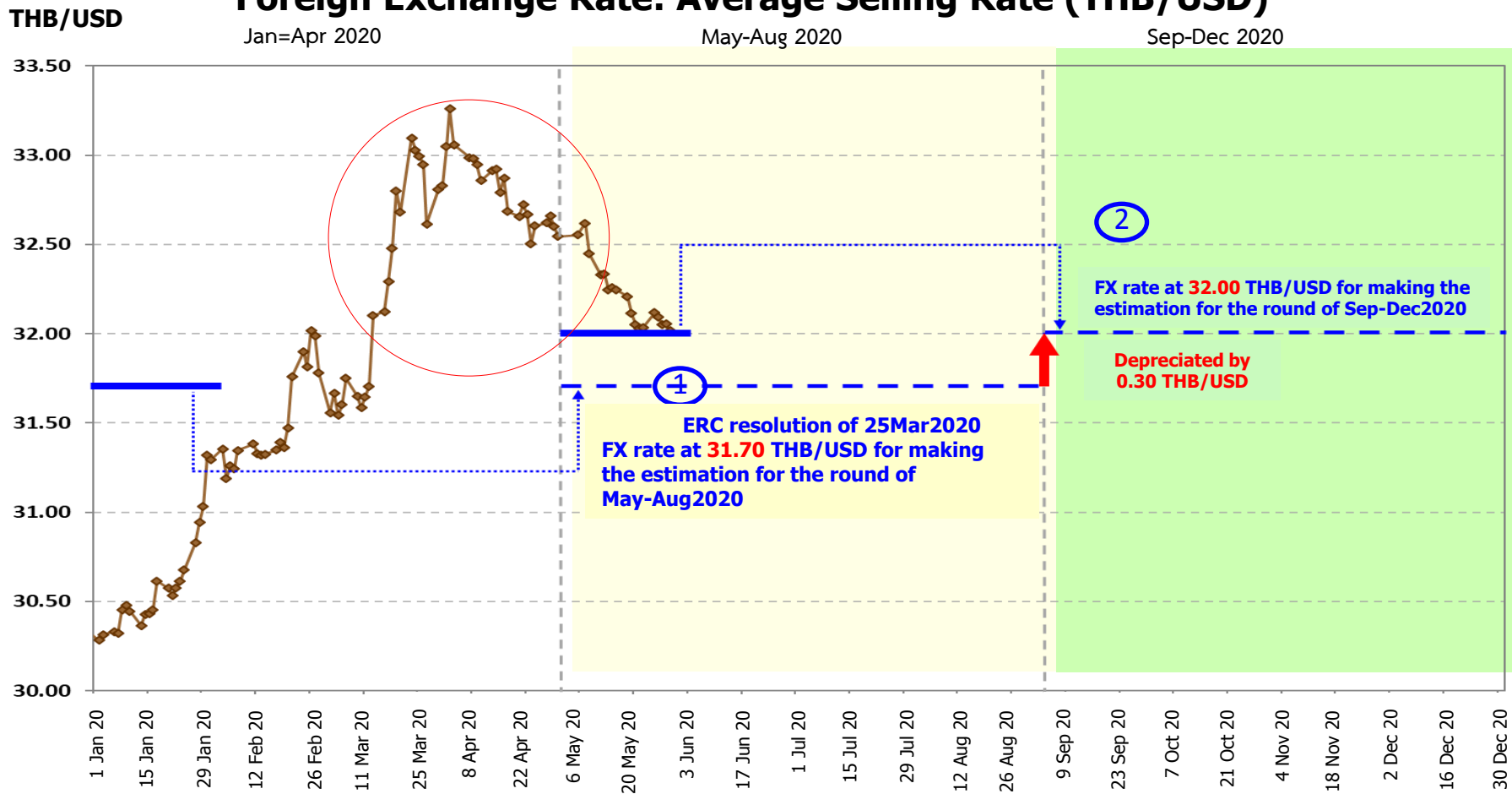
May-Aug 2020 (Estimates) and Sep-Dec 2020 (Estimates)

Fuel Type	May-Aug 2020 Estimates [1]		Sep-Dec 2020 Estimates [2]		Difference [2] – [1]	
	GWh	%	GWh	%	GWh	%
Hydro	1,582.18	2.26	1,518.01	2.58	-64.17	+0.31
Fuel Oil	15.96	0.02	45.60	0.08	29.64	+0.05
Lignite	5,588.75	7.99	5,516.40	9.36	-72.36	+1.37
Imported Coal	5,823.53	8.33	5,072.60	8.61	-750.93	+0.28
Natural Gas	40,790.54	58.34	30,118.01	51.12	-10,672.53	-7.21
Diesel	21.82	0.03	81.71	0.14	59.89	+0.11
Import from Laos	11,324.21	16.20	11,827.08	20.08	502.88	+3.88
- Hydro	7,730.67	11.06	8,379.09	14.22	648.41	+3.17
- Lignite	3,593.53	5.14	3,448.00	5.85	-145.53	+0.71
Malaysia	44.28	0.06	44.13	0.07	-0.15	+0.01
Others	4,728.32	6.76	4,686.43	7.96	-41.89	+1.19
Total	69,919.59	100.00	58,909.98	100.00	-11,009.61	-15.75

May-Aug2020 (Estimates): Growth +1.75% and Sep-Dec2020 (Estimates): Growth -6.58%; electricity generation decreases by 11,009.61 GWh, or -15.75%

2.3) Exchange Rate

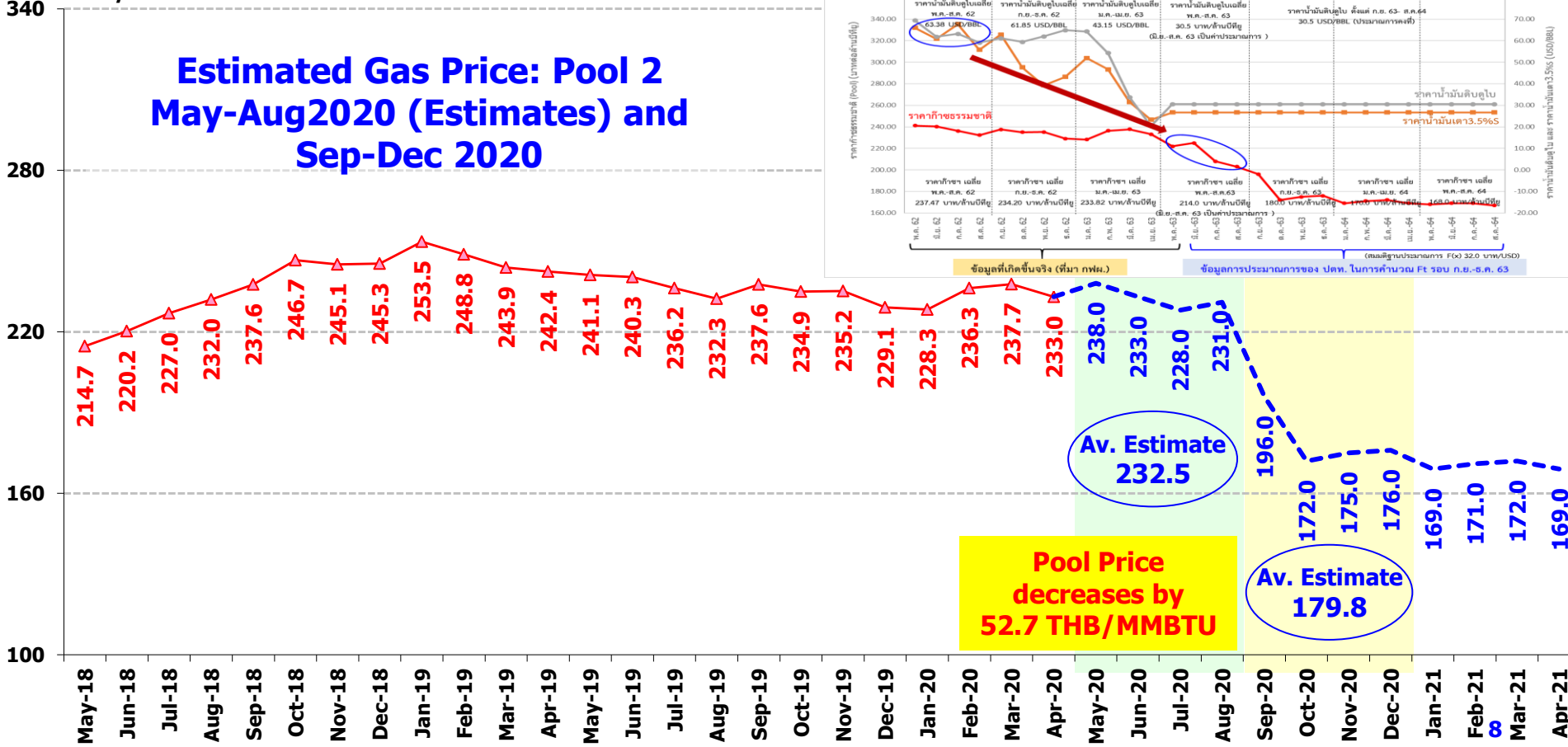
Foreign Exchange Rate: Average Selling Rate (THB/USD)



2.4) Pool Gas Price for 2020

THB/MMBTU

Estimated Gas Price: Pool 2 May-Aug2020 (Estimates) and Sep-Dec 2020



Av. Estimate
232.5

Pool Price
decreases by
52.7 THB/MMBTU

Av. Estimate
179.8

2.5) Positive Effect on lower gas price

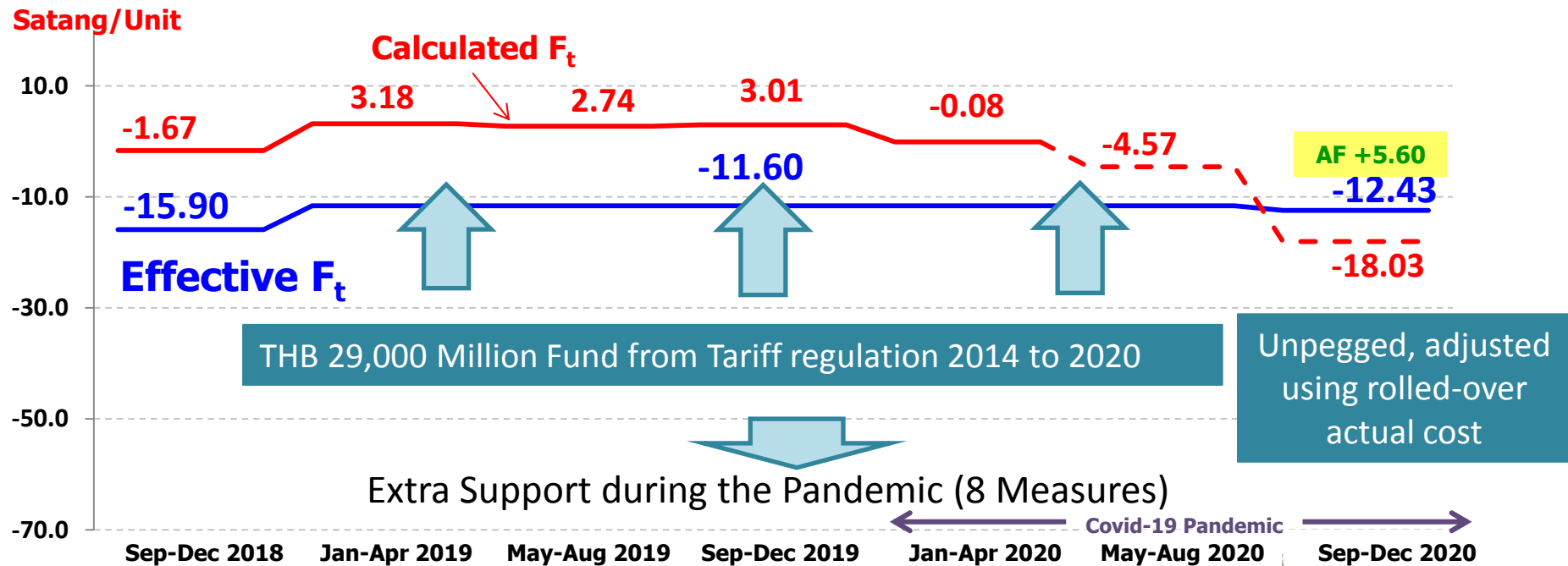
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Reference Variable
Costs as at Nov 2015

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Variable Costs of
Current Round



2.6) Extra Support during COVID-19 Pandemic (8 Measures)



8

8 Measures to mitigate impacts of COVID-19

1 Reduce monthly electricity bills by 3% from net electricity cost (after VAT), for 3 months (Apr - Jun 2020)

2 Waive the Minimum Charge of electricity tariffs for 6 months (Apr-Sep 2020)

3 Subsidize electricity costs more than 23 million households nationwide

❖ Reduce the variable electricity tariff (Ft) for collection in the billing round of Sep - Dec 2020

❖ Refund “Electricity Meter Deposits” to residential and small business customers, with refund payment starting Mar 2020 onwards

❖ **Implement projects (using the Power Development Fund) to resolve drought problems, to stimulate the economy, and to control and prevent the spread of COVID-19**

❖ Introduce the “Regulation Zero” measure to waive compliance with the specified timeframe for undertaking procedures at various stages, such as the timeframe of license renewal

❖ Provide channels of OERC service provision during the COVID-19 crisis

3) Lessons Learned

- 1) Conditions during COVID-19 pandemic will expedite Thailand Gas Supply Deregulation.
- 2) Both electricity and gas users will be seeking more alternative sources of supply in order to obtain their best choice in the future.
- 3) Rigid PPA for electricity supply will be a hurdle to manage generation mix during crisis, flexible PPA conditions might be a better option.



-THANK YOU-

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