

## **ENHANCEMENTS FOR A MORE SECURE AND RESILIENT POWER SECTOR**

1. The global energy landscape is changing rapidly. Global energy markets are becoming more volatile amidst geopolitical tensions and the global energy transition. Governments around the world are reviewing their approach towards energy markets to ensure energy security and stability. EMA has conducted a review of Singapore's power sector and will be introducing guardrails to strengthen the existing competitive market structure. These enhancements will ensure that Singapore is well-positioned to navigate the energy transition.

### **Changing Global Energy Landscape**

2. With the power sector accounting for almost a quarter of global emissions, decarbonising electricity generation is at the core of the global climate effort. This is especially so for Singapore, where the power sector accounts for ~40% of Singapore's carbon emissions.

3. However, the global energy transition could result in unanticipated security and reliability risks, and extreme price volatilities, as evidenced in the past year.

4. At the same time, as sectors turn to electrification to decarbonise their operations, demand for electricity will increase. It is therefore critical that Singapore navigates the energy transition in a safe and secure way. This is existential to us.

### **Temporary Measures to Enhance Singapore's Energy Security Have Been Effective**

5. The ongoing global energy crunch has highlighted the need to strengthen Singapore's energy market to better manage volatile market conditions. Since 4Q2021, EMA has put in place various temporary measures to safeguard our energy security and resilience. See Annex for the crisis management measures.

6. While these temporary measures have helped to stabilise our energy markets, we will need to strengthen the market structure to withstand potentially more turbulent times ahead.

### **Limitations of Singapore's Current Market Structure**

7. Today, Singapore has a liberalised power sector, where private generation companies procure fuel, generate electricity and retail to consumers. EMA sets the performance standards but does not otherwise intervene in gas contracting, generation capacity planting and electricity pricing. While this competitive market structure has served us well over the past two

decades – increased innovation and efficiencies in operations, and a wider range of retail options for consumers – some gaps have emerged.

8. Risks of gas supply disruptions and price shocks. Currently, gencos have significant flexibility to decide on the amount of gas to contract and the duration of their contracts. However, it does not provide sufficient assurance that there will be sufficient contracted gas on aggregate to meet system demand. Indeed, when gas prices are high, gencos are less inclined to contract for gas for fear that they would be left stranded when gas prices moderate. Without the assurance of back-to-back electricity contracts, gencos are also reluctant to enter into longer-term gas contracts which typically offer greater guarantee of delivery and lower prices. Gencos also tend to exhibit herding behaviour in gas procurement, which can lead to either over- or under-contracting of gas, or gas contracts expiring at the same time. This magnifies the power sector's exposure to global market conditions, which may be unfavourable.

9. Risks of insufficient generation capacity. Today, investments in new generation capacity are driven by each company's commercial considerations. This can lead to prolonged periods of over- and under-supply (since it takes ~4 – 5 years to plant a new generation unit) and could lead to volatile electricity prices. These cyclical mismatches in supply and demand could worsen with the global climate imperative, as rising carbon taxes and the energy transition could discourage investments in thermal generation units which will still be needed to meet electricity demand in the near and medium-term.

10. Risks of market failures as industry participants are not sufficiently equipped to deal with volatile market conditions. As part of the liberalisation of the retail market, EMA had allowed Independent Retailers to enter and compete with genco-retailers ('gentailers') to sell electricity to consumers. While consumers have benefited from more competitive electricity prices and a wider range of retail price plans, some electricity retailers were not sufficiently equipped to deal with the extreme market volatilities observed in 4Q2021 and 1Q2022 and either exited the market or prematurely terminated contracts with some of their consumers.

### **Guardrails to Enhance the Competitive Market Structure**

11. EMA will be introducing three key guardrails to address the risks identified above and augment the competitive market structure in place today.

#### *Gas Supply*

12. To ensure the security and adequacy of gas supply, EMA will:

- a. Institutionalise the current crisis management measure requiring gencos to maintain sufficient fuel for power generation. This will help to safeguard energy security especially given the uncertainties and volatilities in global energy markets.

- b. Maintain the Standby LNG Facility (SLF) to address risks of gas supply disruptions. This was also introduced as part of the crisis management measure to guard against risks of gas supply disruptions. As we expect gas supply disruptions to be more prevalent in the future, as our PNG supplies are depleting and with the energy transition, the SLF will help to safeguard energy security.
- c. Work with the industry to explore ways to improve gas procurement, such as by collectively contracting for longer-term gas contracts for greater security of supply, or demand aggregation to provide economies of scale.

### *Power Generation Capacity*

- 13. To ensure sufficient generation capacity to meet system demand, EMA will:
  - a. Introduce a structured process to facilitate private investments in new generation. EMA will conduct a competitive tender, about 5 years in advance of the year in which the generation capacity is projected to be required. The most competitive proposal will be awarded a licence to build, own and operate the new capacity. All new generation plantings will be coordinated within this process to avoid risks of over- and under-capacity.
  - b. If there is insufficient private sector interest to build new generation capacity, EMA will do so as a last resort. The Energy Market Authority Act and Electricity Act were amended in 2021 to provide EMA with the powers to do so.

### *Retail Market*

- 14. Last but not least, EMA will strengthen consumer protection by:
  - a. Enhancing regulatory requirements on electricity retailers. These include stricter qualifying criteria for retailers such that only industry participants with sufficient financial strength and sustainable business propositions to withstand some degree of market volatility can enter the market. We also plan to impose higher capital / hedging requirements on retailers to ensure that they are sufficient resilient against market volatility, and additional protections for consumers if retailers prematurely terminate contracts.
  - b. Tightening the eligibility criteria for consumers on Wholesale Electricity Price (WEP) plans, so that only those who are equipped to deal with the risks of price fluctuations can purchase electricity at wholesale electricity prices.

## Conclusion

15. While these guardrails will, to some extent, reduce choice for market participants (e.g. gencos and retailers) and consumers, it will help to improve the stability and security of our power sector in the longer term and ensure that Singapore is well placed to navigate the energy transition.

16. EMA will be conducting industry and public consultations over the next few months, and will progressively implement these enhancements from 2023.

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**Annex A**

## **Crisis Management Measures that EMA to Safeguard Energy Security and Resilience**

Since 4Q2021, EMA has progressively introduced the following crisis management measures to safeguard energy security and resilience. These include:

- a. A Standby LNG Facility (SLF) which generation companies ('gencos') can draw upon to generate electricity in the event of gas supply disruptions;
- b. Directing gencos to procure sufficient fuel to generate electricity, based on their available generation capacity;
- c. Directing gencos to generate electricity using fuel from the SLF to address projected supply shortfalls in the Singapore Wholesale Electricity Market (SWEM); and
- d. The Temporary Electricity Contracting Support Scheme (TRECS) for consumers facing difficulties securing electricity contracts, to reduce their exposure to volatile Wholesale Electricity Prices.

These measures will be in place till end-March 2023.