PREPARING FOR FUTURE

POWER GENERATION INVESTMENTS IN SINGAPORE

FINAL DETERMINATION PAPER

29 JULY 2016

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SECTION 1 EXECUTIVE SUMMARY

1.1 The Energy Market Authority (“EMA”) conducted a public consultation exercise from 26 October to 21 December 2015 to seek feedback on initiatives and enhancements to prepare for future power generation investments in Singapore.

1.2 The National Electricity Market of Singapore (“NEMS”) is designed to promote the efficient supply of competitive-priced electricity through encouraging commercially-driven investments in power system infrastructure. The power generation landscape in Singapore has evolved from a fuel mix previously dominated by steam plants running on fuel oil, to our current state where the output from gas-fired plants accounts for about 95% of Singapore’s electricity generation. The use of technologies such as Combined Cycle Gas Turbines, which have high efficiency levels, has benefited Singapore and electricity consumers through both lowering costs of electricity production while enhancing our environmental sustainability.

1.3 The EMA continually seeks to work with the industry to ensure a conducive environment for power generation investments. We do so by providing more information and visibility on the longer term outlook of the energy landscape in Singapore, as well as by developing a framework to allocate land for new power generation investments in Singapore. After careful consideration of the feedback received from the consultation exercise, the EMA is implementing the following initiatives set out in this determination paper:

(i) Putting out more information on the long term outlook of the energy market to facilitate power generation investments, such as indicative electricity demand and supply forecasts;

(ii) Requiring generation licensees to inform the EMA of their indicative generation plans with a 4-year notice period; and

(iii) Developing a 2-stage land allocation framework to allocate safeguarded utility land to investors for new generation assets.
SECTION 2 BACKGROUND

2.1 In Singapore’s liberalised market environment, power generation investments are commercially driven. Prices in the electricity market send signals to investors to make investment decisions with respect to the timing of new plantings, as well as the amount of capacity and the type of technology. For the market-based approach to work well, it is important that there should be adequate, quality information for investors to make their investment decisions. This is especially so for the power sector, considering the high capital cost and significant lead time required for power generation planting.

2.2 The EMA has been proactively putting out related information such as generation and consumption data through the Singapore Energy Statistics which is published annually to facilitate investment decisions. To further improve the regulatory environment for power generation plantings, the EMA published a consultation paper on 26 October 2015 with three key initiatives summarized below:

(i) Proposed information put out by EMA on the long term outlook of the energy market in Singapore;

(ii) Proposed enhancements to the regulatory approval process for new and existing generation assets, so as to give better visibility of total generation capacity on a forward-looking basis; and

(iii) A proposed framework to allocate land for new generation assets, including working with relevant agencies including the Urban Redevelopment Authority (“URA”) to safeguard utility land for the development of new power plants.
SECTION 3 FEEDBACK FROM THE CONSULTATION PAPER

3.1 Summary of Feedback Received

3.1.1 The EMA’s consultation closed on 21 December 2015 and the parties that have provided responses to the consultation paper are shown in Table 1. The respondents’ feedback and the EMA’s corresponding responses are detailed in Appendix 1.

Table 1: List of parties who have responded to the EMA’s Consultation Paper

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Parties that have responded</th>
</tr>
</thead>
</table>
| Licensees         | • ExxonMobil Asia Pacific Pte Ltd  
|                   | • Keppel Merlimau Cogen  
|                   | • PacificLight Power Pte Ltd  
|                   | • Pavilion Gas Pte Ltd  
|                   | • Senoko Energy Pte Ltd  
|                   | • YTL PowerSeraya Pte Ltd  |
| Others            | • Malakoff Corporation Berhad |

3.1.2 The EMA noted that stakeholders were generally supportive of the move to put out more information on the long-term outlook of the energy market to facilitate power generation investments, such as the projected future demand and supply conditions.

3.1.3 On the proposed enhancements to the regulatory approval process for new and existing generation assets, the EMA received a spectrum of feedback from respondents. On one hand, there were concerns that the imposition of binding plans and penalties would reduce flexibility in making investment decisions, while there were also views that the EMA’s proposal was reasonable and had its merits.

3.1.4 On the proposed land allocation framework for new generation assets, the respondents were supportive of the EMA taking the lead to allocate utility land for power plant development. There was also broad agreement with the proposed 2-stage process, with suggestions to refine the land allocation process and the selection attributes.

3.1.5 After carefully considering the responses received in the consultation process, the EMA has made refinements to each of the initiatives which are described in the following sections.
SECTION 4 INFORMATION FOR POWER GENERATION INVESTMENTS

4.1 The EMA will put out an “Electricity Market Outlook” on an annual basis to facilitate investment decisions through providing relevant information.

4.2 Demand and Supply Forecasts

4.2.1 The projected range of electricity system peak demand\(^1\) and annual system demand will be published, taking into consideration drivers of system demand, such as trends in growth of Gross Domestic Product (“GDP”) and changes to population and temperature. Figure 2 shows an example of how the electricity system peak and annual demand forecast could be put out to the industry.

Figure 2: Example of the Electricity System Peak Demand and Annual System Demand Forecast

4.2.2 Complementing the demand forecast, the EMA will also put out the projected electricity system supply forecast on an aggregated basis. This will be based on the

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\(^1\) System demand is the total electricity demand in Singapore, including the works units as well as transmission and distribution losses but excluding the demand met by embedded generators.
indicative generation plans with a 4-year notice period provided by generation licensees (see details in Section 5).

4.2.3 Going forward, the development of new technologies will open up more generation options for Singapore. Therefore as part of the projected electricity supply forecast, the EMA also intends to provide more visibility on the types of generation sources expected in future generation capacity based on industry feedback. For example, the EMA is studying how to have greater visibility of the pipeline of investments of smaller-scale distributed generation sources (which typically do not require a license from EMA) such as solar photovoltaic installations, and how best to share such information (on an aggregated basis) with the industry.

4.2.4 The information to be put out is intended to be indicative and non-binding, and is dependent on factors such as prevailing assumptions and projections, policy considerations and the broader macroeconomic climate.

4.2.5 The inaugural “Electricity Market Outlook” is expected to be published in Q4 2016.
SECTION 5 FRAMEWORK ON LICENSEES’ GENERATION PLANS

5.1 This section elaborates on the framework on the requirement for generation licensees to submit their generation plans.

5.2 4-Year Notice Period for Indicative Generation Plans

5.2.1 In the consultation paper, the EMA has proposed an enhanced framework on licensees’ generation plans with the objective of addressing uncertainty arising from information gap. One such proposal is to require licensees to submit their binding generation plans within a specific lead-time, such as 4 years prior to the planned operation dates of the plants. One option in the consultation paper explored the imposition of penalties on licensees, should they fail to adhere to their submitted plans.

5.2.2 The EMA has received a spectrum of feedback on the above proposed approach. On one hand, there was support for this proposal so as to increase overall certainty and transparency for the industry. The suggested timeframe of 4 years ahead was also deemed reasonable. However, there were also views that such an approach would reduce flexibility for licensees when making investment decisions.

5.2.3 Factoring in these considerations, the EMA has decided to require generation licensees to inform the EMA of their indicative generation plans with at least a 4-year notice period. This applies to all generation plans for retirement, repowering, life extension and new generation investments. Licensees may change their plans subsequently should any genuine unforeseen circumstance arise, but would be required to provide the EMA with the corresponding justifications for such changes. This balanced approach has the advantage of enabling licensees to retain flexibility of their investment decisions, while fulfilling the EMA’s objective of providing more visibility on the outlook of generation supply to the industry.

5.2.4 The EMA has also received feedback on the potential commercial sensitivity of the information that may be released publicly. As set out in Section 4 of this paper, information relating to the electricity system supply forecast will be released on an aggregated basis, which would address such a concern.

5.2.5 The EMA will require each generation licensee to provide its indicative generation plans (i.e. for retirement, repowering, life extension and new generation investments) with a notice period of at least 4 years. For example, if the generation licensee

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2 A generation licensee may already have such plans scheduled over the next 4 years, and as such may not meet the requirement of providing an advance notice period of at least 4 years. For such cases, the generation licensee which submits such plans to the EMA by August 2016 would not have to provide the necessary justification. To illustrate, a generation licensee which intends to
intends to build a new plant with an operational date of June 2021, it should inform the EMA of its plans no later than July 2017 (i.e. at least 4 years ahead). No submission is required if the generation licensee does not have such a generation plan or there is no change to the plan previously submitted. The generation licensee will have to justify to the EMA for not submitting any plan in time (i.e. with less than 4-year notice period) as well as for any change to the plan previously submitted⁴.

5.3 Possibility of Moving Towards 4-Year Binding Plans

5.3.1 There is a possibility that the requirement to provide indicative generation plans does not fulfill the objective of providing more certainty to the industry such as repeated changes of plans by licensees without adequate justifications. Should this be the case, the EMA would consider moving towards a stricter regime, including delaying or not approving the changes should the EMA assess that the justifications provided are not adequate, and/or imposing the requirement for licensees to provide binding generation plans that could carry a financial penalty for non-compliance/deviation.

repower a plant due to operate in July 2018 will not have to provide the justification if it informs the EMA by August 2016 (even though it does not meet the 4-year notice period requirement), but would have to do so if it informs the EMA after August 2016.

³ The EMA may put out Addendum(s) to the “Electricity Market Outlook” to update the changes submitted by the licensees.
SECTION 6 FRAMEWORK TO ALLOCATE LAND FOR NEW GENERATION ASSETS

6.1 There was broad support across the industry on the two-stage land allocation process put forth in the consultation paper. This section provides details on the finalized framework for the EMA to allocate safeguarded utility land for new power plant development.

6.2 Two-stage Land Allocation Process

6.2.1 Under the framework to allocate land for new generation assets, the EMA will periodically release land which have been safeguarded and make available to investors for power generation planting. The process will be triggered by investors, consistent with the market design in which power generation planting is driven commercially.

6.2.2 A potential investor can trigger the process by writing to the EMA to express interest to apply for a specific site. If two or more sites are available, an investor can indicate their preference of which site to invest in. The EMA reserves the right to determine which site to allocate to the investor.

6.2.3 The process will have 2 stages:

a. **Stage 1 – Invitation-To-Invest (ITI).** Once a potential investor has triggered the process, the EMA will conduct an open call to invite the industry to participate in the ITI exercise for that site. In the event that the EMA receives only one interest, the investor is required to provide its plans. If it meets our criteria, the land will thereafter be directly allocated to that investor based on the market price. If there is more than one interested investor, the EMA will shortlist those who are able to meet a set of pre-requisites for Stage 2. An overview of the Stage 1 process can be found in Figure 3.

*Figure 3: Overview of Stage 1 ITI Process*
b. **Stage 2 – Request-for-Proposals (RFP).** Shortlisted investors will need to submit their proposals for the EMA’s consideration. The proposals will be evaluated based on a set of selection attributes. The investor who best meets the selection attributes will be allocated the land. An overview of the Stage 2 process can be found in Figure 4.

*Figure 4: Overview of Stage 2 RFP Process*

6.2.4 The criteria and selection attributes may vary according to specific sites depending on their individual factors and characteristics. The EMA will make known the attributes and weightages based on each specific site to be allocated during Stage 1. Examples of possible attributes include power-land density, plant efficiency and bid price.

6.2.5 The indicative timeline for the land allocation from the time an investor triggers the process to the award of the land is described in Figure 5. Power generation investors seeking green-field sites for power planting can approach the EMA to trigger the process, when the EMA makes available site(s) for allocation. Accompanying information such as the availability of electricity and gas network capacity for the specific site will also be made available.
### Timeline and Milestones

| WEEK | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 |
|------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| **Investor writes to the EMA expressing interest to invest in new generation capacity** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **The EMA launches Invitation-to-Invest (ITI) exercise** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **ITI*** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **Close of ITI** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **Evaluation of investors for eligibility** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **(A) IF THERE IS ONLY 1 ELIGIBLE INVESTOR** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **Award of land to investor based on meeting the EMA’s criteria and market price valued by the Chief Valuer** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **(B) IF THERE ARE MORE THAN 1 ELIGIBLE INVESTOR** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **The EMA requests eligible investors to submit their proposals** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **Request for Proposals (RFP)** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **Close of RFP** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **Evaluation of investors’ proposals** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| **Award of land to successful investor** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

*Interested investors may be required to provide a security bond. It will be returned to investors who complete the process, regardless whether they are allocated the land.*
SECTION 7 SUMMARY

7.1 Taking into consideration the feedback received from the various stakeholders, the EMA is implementing the following initiatives to facilitate future power generation investments in Singapore:

(i) Putting out more information on the long term outlook of the energy market to facilitate power generation investments, such as indicative electricity demand and supply forecasts, with the inaugural “Electricity Market Outlook” due for release in Q4 2016;

(ii) Requiring generation licensees to inform the EMA of their indicative generation plans with a 4-year notice period; and

(iii) Setting out of a land allocation framework with a 2-stage process to allocate safeguarded utility land to investors for new generation assets.
APPENDIX 1 RESPONSE TO FEEDBACK ON THE CONSULTATION PAPER

A. Information for Power Generation Investments

<table>
<thead>
<tr>
<th>Comments/Feedback</th>
<th>The EMA’s Response</th>
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<tbody>
<tr>
<td>“[We are] supportive of additional information being provided by EMA on the longer-term market outlook. Accurate and reliable information on future system demand and forecasted energy mix would be useful to the market in planning for future investments.”</td>
<td>The EMA notes the agreement on the overall proposed approach to provide more information on the longer-term outlook of the energy market in Singapore. The information which the EMA intends to provide is detailed in the Final Determination Paper.</td>
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<tr>
<td>“[We are] supportive of this move for greater transparency in the industry that will be able to assist existing and future power generation investors. To add to these information, [we] would also propose to include current and future electricity load distribution across the country, power network planning and development. We believe these information are critical for investors’ decision on the location of planting should there be more than one land allocated for power plants.”</td>
<td>The EMA notes the suggestion.</td>
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<td>“[We] welcome EMA’s initiative to make publicly available, information on 1) Singapore’s future electricity system demand 2) The future mix of power generation sources; and 3) The possible siting of these sources We encourage EMA to provide the data annually for a 5-year forward outlook basis to allow interested parties sufficient lead-time for planning.”</td>
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"We note that GDP attributed to the service sector accounts for significantly less electricity demand per dollar than GDP attributed to the manufacturing sector. We also note that the share of manufacturing’s contribution to GDP has been dropping, that is Singapore is moving towards a more services oriented economy. How would this shift be factored into the electricity system demand projections?

In assessing the electricity system demand growth, power generation companies would want to know what is the incremental electricity system demand growth for them to supply which would mean stripping out electricity demand served by embedded generation and renewables such as solar generation. When providing electricity system demand projections, EMA should also provide accompanying projections for embedded generation and renewables such as solar generation.

There should be timely updates to the projections of electricity system demand. Anytime there is a significant change to parameters used for projections, such changes should be quickly updated together with the electricity system demand projections. There is no need to wait for a scheduled update time. The need for timely updates is also applicable to electricity supply projections.

For investors to make informed decisions with respect to new planting, repowering, lifetime extension or retirement, forward guidance on the following items is highly desirable:

- Vesting Contract Level
- Electricity import policy
- Embedded Generation

The EMA is continually studying how electricity demand growth is changing over time, with the objective of increasing the accuracy of electricity demand growth projection, including how relevant drivers of demand growth can be considered in the demand projection methodology.

The EMA notes the feedback and will consider how the EMA can provide more timely updates.

The EMA notes the feedback on the types of information which may be useful for investors to make informed decisions on generation planting. The information that the EMA intends to publish will cover primarily system peak and annual demand forecast and supply projections (based on the indicative generation plans submitted by generation licensees). Interested
- Emissions control policy
- Fuel import policy – LNG, PNG and other fuels
- Transmission Network Development and Constraints
- Power system operation philosophy – reserve margin requirement as well as online generation reserve capacity requirements affecting generation outage approval
- Renewables Policy – including government schemes such as the SolarNova programme

“Consider providing a richer set of electricity demand information, including:
- Projected total demand (in GWh) and expected demand profile
- Methodology and assumptions used in the demand model

EMA should consider disclosing relevant government policies that are likely to have an impact on the economics of various generation technologies and the generation sector in general. Relevant policies include:
- Electricity imports.
- Greenhouse gas/ pollution emissions policies (including with respect to NOx and SO2).
- Subsidies/incentive schemes that are targeted at specific technologies.
- Gas import/trading restrictions.
- Vesting.
- Water access and management.

[We] support the approach that investments in the electricity market will ultimately still be commercially driven. EMA should consider disclosing investors should also take into consideration other relevant information put out by the EMA from time to time on related issues.

Please see response above.
relevant government policies that are likely to have an impact on the economics of various generation technologies and the generation sector in general.

Furthermore, EMA should consider disclosing the likely evolution of infrastructure (and associated user costs) that supports power generation (e.g., power and gas transmission systems, LNG terminals)… and updates on introduction of nuclear generation.”

“[We] would like to clarify the degree of detail provided on the staging horizons. We are of the view that information should remain aggregated, limited to total supply and type of generation expected to come into the market. This should be sufficient to make informed investment decisions. Information such as location, capacities and genco involved in the development, may be compromising and thus should be withheld from publication.”

The EMA notes the importance of confidentiality of investments and intends to put out the projected electricity system supply forecast at an aggregated level (based on the indicative generation plans submitted by generation licensees).
“[We are] of the view that Singapore should remain open to new and alternative fuel sources and technologies, while recognising the importance of current combined-cycle gas turbines (CCGTs). This approach will be beneficial to supply security. In line with this, [we] believe that EMA should provide clarity on the expected implementation date and proportion electricity import as part of the energy mix, to better facilitate planning for the proportion of supply that would be provided within the Singapore market.”

“We highly recommend that electricity import should be explored as a sustainable solution to the energy “trilemma” The introduction of electricity imports is an important step towards enhancing competition and diversifying the sources of electricity generation within and into the NEMS. An orderly entry of the imports should be undertaken to ensure that it commensurate with the objectives set-out and balanced with sustainability.

We recommend that the development of EMA’s regulatory framework on electricity import should address, but not limited to, the followings:

- The regulation produced is a joint perspective of the national energy departments and regulators of all countries involved
- Such framework to be transparent, burden-free and commercially driven
- Technology used in host country is proven and meets international best practices
- International transmission facilities must not adversely impact the reliability of the Singapore power grid system both technically and environmentally

The EMA notes the suggestions with respect to the details of the electricity import policy.
In this respect, we recommend that the EMA adopts direct negotiation with prospective project developers identified via a pre-qualification process. This is especially true when only a handful of viable and serious bidders who has development capabilities are sited within close proximity to Singapore (Malaysia, Batam and Sumatra in Indonesia).

Alternatively, we recommend EMA to consider a single stage request for proposal ("RFP") as practised currently in Singapore to avoid a long and costly bidding process.

In furtherance to undertake a bidding process as envisaged, the process is expected to be long drawn and complicated given the difficulty in accessing which developer or options is best as each would have its own distinct advantages and disadvantages. For example, what fuel, what interconnection options, what & whose risks, how to measure and quantify security and reliability; etc.”
B. Framework on Licensees’ Generation Plans

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<tr>
<th>Comments/Feedback</th>
<th>The EMA’s Response</th>
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<td>“[We] support the proposal of getting investors to commit to a firm planting schedule. We also agree with the EMA’s proposal that any approval could be conditional, such that failing to execute plans within a given timeframe can be subject to penalties like revocation of the approval. In this regard, we deem a 4-year period would be reasonable, wherein 1 year will be for planning and development and 3 years will be allocated for construction period. The existing Schedule A of the Generation Licence requires a licence holder to state the Commercial Operation Date, which is already a publicly available data on proposed timings and commitment of investors. We would suggest that licence holders should have an obligation to commit and meet the timeline, otherwise, it should keep EMA informed of any changes. The same schedule could also be amended across licence holders to include any indicative information on the retirement date of generating units.”</td>
<td>After careful consideration of the feedback received, the EMA has decided to require licensees to inform the EMA of their indicative generation plans with at least a 4-year notice period for generation plans on retirement, repowering, life extension and new generation investments. Licensees may change their plans subsequently should any genuine unforeseen circumstance arise, but would be required to provide the EMA with the corresponding justifications for such changes. This balanced approach has the advantage of addressing the concerns by stakeholders to retain flexibility of their investment decisions, while fulfilling EMA’s objective of providing more visibility of the outlook of generation supply to the industry. There is a possibility that the requirement to provide indicative generation plans does not fulfil the objective of providing more certainty to the industry such as repeated changes of plans by licensees without adequate justifications. Should this be the case, the EMA would consider moving towards a stricter regime, including delaying or not approving the changes should the EMA assess that the justifications provided are not adequate, and/or imposing the requirement for licensees to provide binding generation plans that could carry a financial penalty for non-compliance/deviation. The EMA would also like to clarify that overall, the EMA’s intention is to make available information to facilitate investors to...</td>
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<td>“Investors should retain substantial flexibility in the timing of their investment decisions. Investment decisions in a competitive “capacity” orientated industry are often contingent on the actions of other players… In addition to competitive dynamics, participants may wish to tailor the timing of their investment decisions in reaction to changes in relevant government policies (e.g., vesting allocations) and/or general economic conditions. Again, a rigid regulated capacity commitment regime may lead to inefficient and/or commercially unsustainable outcomes.”</td>
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[We are] supportive of providing indicative and non-binding capacity plans, which EMA could use for industry communication on an aggregated basis. [We are] not supportive of binding capacity plans and associated penalties for adjustments to such plans."

"[We are] of the opinion that penalties for not adhering to binding proposals are unnecessarily punitive, and may discourage new project developments. New Investment projects are in themselves challenging, and proposals, particularly for new generation and repowering, would have to be submitted at very early stages of planning. At this point, completion target dates or CODs are very tentative and easily subject to delays, many of which are outside of the control of the genco.

Binding proposals for completion dates should not be required to be submitted for generating units undergoing repowering, life extension and retirement, as these investment decisions are for already established assets on the land of the genco."

"EMA has not mentioned compensation for licensees being made to kept [sic] generation facilities available longer than desired by licensees due to the proposed new imposition for notification of retirement in advance… For retirement of generation facilities, EMA should be flexible with respect to advance notice required… If the retirement of a generation facility can be done immediately without endangering system security, then EMA should permit immediate retirement.

If licensees are to be subject to penalties for delaying plans, they will want reasonable exemptions from such penalties, failing which they may make informed and efficient decisions. Investment decisions would still be made based on a commercial basis. The EMA will continue to approve applications based on technical merits."
decide to wait till electricity demand and consequently electricity prices are high enough for them to have a high degree of certainty about execution timing. This would mean consumers end up having to pay higher electricity prices."
C. Framework to Allocate Land for New Generation Assets

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<td>“[We] support EMA’s proposal that it will provide information on lands available and safeguarded for future investors, given the scarcity of suitable areas for power generation planting in Singapore. .. For such RFP process involving two or more investors, we would advocate that attributes for evaluation should be based on land usage, investment plans, company track record, its financial standing, fuel of generation and security of fuel. As for land price, we propose that it should remain fixed. Bidding process on land prices does not seem to be appropriate as it runs contrary to EMA’s objective of facilitating power generation investment decisions of potential and existing investors. The indicative timeline for land allocation mechanism may be too short. Flexibility should also be exercised to grant extension subject to the merits of such extension and complexity of the proposal.”</td>
<td>The EMA recognises that the selection attributes and weightages could differ from site to site, due to the varying characteristics of each safeguarded site. To give the industry sufficient certainty and lead time to prepare, some examples of possible attributes are set out in the main paper. The exact attributes and weightages will be determined based on the site to be allocated, and announced during Stage 1 of the land allocation process when it is triggered. The allocation of the safeguarded utility land is based on land allocation framework set out in this Paper. The EMA would like to clarify that the timeline provided in this Paper is an indicative one, and may differ from site to site. Sufficient time will be provided for prospective investors to make a considered decision to participate in the land allocation exercise. The EMA will provide more details on the timeline based on the site to be allocated, and announcement will be made during Stage 1 of the allocation process when it is triggered. The EMA notes the suggestion not to use bid price as a selection attribute. However, given that land is a scare resource in Singapore, including bid price is in line with how scarce resources in Singapore are allocated efficiently. In addition, given that electricity prices are subject to competitive forces in the electricity market, it is not necessarily the case that a high bid price will be</td>
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<td>“[We are] supportive of having investors seeking green-field sites for power planting approach EMA as the coordinating agency. [We are] also supportive of EMA making available at least one site at any point of time available for new power generation, but notes that the characteristics of the site may strongly influence the type of generation assets that are suitable to be located there.”</td>
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An RFP-style process seems reasonable in circumstances when multiple parties are competing for a single site. However, if a key criteria for award is a “high” bid price for the land, then this may mean that the majority of the potential project “rents” flow to the Government and are not available to flow to consumers via lower electricity prices.

“Will EMA publish the selection criteria and weightage used for the evaluation of the proposals for investors to refer to for planning purposes?”

Moreover the criteria and selection attributes should be viewed as an overall package. For example, other possible selection attributes such as power-land density and plant efficiency could lead to greater cost savings in electricity production and ultimately benefiting consumers through competition in the electricity market. On balance, the EMA will calibrate the weightages for the selection attributes, including that for the bid price, with the objective of benefiting electricity consumers.

“... In the case of new generation on land allocated for generation by EMA... the binding proposals could be considered to ensure that the winning participant make good on their project within a reasonable timeframe.”

The EMA notes the suggestion and will consider the necessary safeguards to ensure that the awarded project is completed in a timely manner.

“... [W]e would request confirmation if potential investors are required to have an existing generating license prior to applying for a land?”

Potential investors are not required to possess an existing generating license at the point of application of land. For new investors without an existing generating license who are applying for the safeguarded site, they will be assessed for their eligibility for the generating license as part of Stage 1 of the land allocation process.

“We note EMA’s preference is for the next tranche of additional generation capacity to be on a site that has been set aside under the proposed land allocation framework. We would like to check whether ...”

The land parcels available for power generation planting under the land allocation framework will be made known to the industry progressively over time.
additional generation planting in the South-West Block would still be considered as planting there could possibly be at lower cost than in the north-eastern part of Singapore. Existing investors would be concerned if costs are artificially lowered to encourage planting in the north-eastern part of Singapore."

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<th>&quot;… Under what scenarios would [a company] be restricted from maintaining a licensed generation capacity?&quot;</th>
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<td>Investors (both potential and incumbent licensees) would be required to meet the prevailing criteria and prerequisites, which will form part of the EMA’s evaluation of investors for eligibility under Stage 1 of the land allocation process. Existing generation licensees would be subjected to the prevailing license requirements including the maximum licensed generation capacity, where applicable.</td>
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