Post-3 Mtpa LNG Import Framework

2nd Consultation Paper

Issued on 3 June 2013

Closing date for submissions of comments and feedback: 31 July 2013

Note: There will be no extension of the deadline for comments and feedback beyond 31 July 2013, 5pm (GMT+8).

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If you have any further queries, you may contact Ms Irene Tan (63767831) or Mr Tan Lueneng (63767576).

Disclaimer:

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EXECUTIVE SUMMARY

1. Singapore's first tranche of liquefied natural gas (LNG) will be brought in by BG Singapore Gas Marketing Pte Ltd (BGSGM), which has been awarded an exclusive franchise to import LNG and sell regasified LNG in Singapore for a demand of up to 3 million tonnes per annum (Mtpa) or 2023, whichever is earlier. As of end-April 2013, BGSGM has contracted around 2.7 Mtpa of LNG, or about 90 per cent of its franchise. With LNG set to play a larger and growing role in Singapore's energy mix, there is a need to put in place a robust LNG import framework, beyond the first tranche of LNG supply

2. On 30 March 2012, the Energy Market Authority (EMA) published a consultation paper[1] to seek views from the industry on the options for Singapore's future LNG import framework, beyond the 3 Mtpa franchise with BGSGM. The initial consultation paper outlined two possible frameworks for industry feedback, namely Regulated Sole Importer (RSI) and Multiple Aggregators:

a. Under the RSI framework, a Government-appointed RSI would import all incremental LNG for Singapore beyond BGSGM's current 3 Mtpa of supply. EMA would regulate the RSI's returns as well as its LNG procurement, gas sales prices and contract terms. A variant of this model is adopted by some jurisdictions in Asia such as South Korea, Taiwan and Thailand.

b. Under the Multiple Aggregators framework, there would be up to four large LNG importers (including BGSGM) serving Singapore's LNG demand[2]. This could be implemented through two methods: (i) Government-mandated Aggregation or (ii) Market-driven Aggregation.

   i. Under Government-mandated Aggregation, importers are awarded LNG importer licences through a competitive Request-For-Proposal (RFP) process. Potential aggregators will be assessed on a range of factors including basis of pricing, importer's financial strength and credibility of supply plan. EMA could appoint up to 3 new importers (a) sequentially over time or (b) concurrently. These are described in the consultation paper as the Sequential Aggregation and Concurrent Aggregation approaches respectively.

   ii. Under Market-driven Aggregation, competition between players in the LNG import sector could give rise to natural aggregation of demand via a few importers, including the formation of buyers' groups and other commercial arrangements between gas buyers in Singapore. EMA would set the entry criteria that importers must fulfill to qualify for access to the LNG terminal.

[1] Please refer to http://www.ema.gov.sg/consultations/archive/2/id:93 for the 1st consultation paper on Post-3 Mtpa LNG Procurement Framework.

[2] Industry experience and analysis suggest that the LNG Terminal can accommodate up to four large LNG importers without affecting its ability to effectively deliver 15 Mtpa of capacity throughput. If there are more than four importers, there could be operational constraints and inefficiencies which will lower the terminal's throughput capacity. Based on this consideration, EMA is of the view that it may not be feasible for Singapore to accommodate a model based on complete open access with many entities importing small quantities of LNG to meet their own needs.

3. The first round of consultation closed on 30 June 2012 and EMA received feedback from 31 companies. There were different views from stakeholders on the framework which could best meet the objectives of enhancing Singapore's energy security and price competitiveness. Nevertheless, there were common themes that emerged from the industry feedback, which EMA has incorporated in this second consultation paper.

4. Industry players recognised that the global gas landscape has changed and will continue to evolve over the next decade. For example:

a. LNG is increasingly sold through smaller, shorter contracts and spot cargoes[3], rather than through traditional high-volume long-term contracts. There is also a growing preference for LNG suppliers and buyers to have a portfolio of contracts to reduce concentration risks. It is no longer necessary for buyers to procure large volumes in a single contract. This is supported by market data of recent transactions, which shows that there is no price advantage associated with large contracts compared to buying small contracts of 0.5 Mtpa or less.

b. The timing of LNG procurement is a key factor that affects the price of LNG, as prevailing global demand and supply dynamics will influence the price of LNG contracts. For example, the surge in unconventional gas production in the US will introduce new and significant LNG supply that is indexed to Henry Hub, thus giving LNG buyers more choices. There will also be new supplies when liquefaction projects from the US, Australia, Papua New Guinea, Russia and East Africa enter the market over the next decade.

5. Based on the feedback received, EMA is of the view that a viable LNG import framework for Singapore should address the following key considerations:

a. First, future LNG import should enhance the price competitiveness of our gas supply and minimise volatility. This could be achieved through an import framework which allows for a diversified portfolio of LNG from multiple supply sources and, where possible, a blend of contract durations and price indexation. We should put in place a competitive process to ensure that Singapore gas buyers are able to access the most competitive deal each time we enter the global market to procure LNG. It is risky, especially for a small economy like Singapore, to try and "time the market" by taking big bets with large volume purchases. Entering the market at the wrong time could commit Singapore to a substantial amount of LNG at less competitive prices compared to what future suppliers could offer. It would be better to enter the market regularly; discover what the prevailing prices are; and buy smaller volumes for each purchase.

b. Second, the import framework should keep our future options open and allow our domestic gas buyers to benefit from opportunities arising from developments in the global gas market, such as the emergence of new gas supplies and movements in gas prices.

[3] Before 2000, the spot market was marginal, accounting for less than 5% of volumes traded. By 2005, its share had grown to 8%. Between 2007 and 2010, the spot market accounted for 17 to 20% of total LNG trade. The market reached 76 million tonnes in 2012, or 32% of global trade.

c. Third, the import framework should take into consideration the available capacity and operational efficiency of the LNG terminal, and the number of users it can effectively accommodate.

d. Fourth, Singapore's near-term incremental gas demand is not large. The incremental gas demand up to 2018 is estimated at around 1 to 1.5 Mtpa. While it is possible to contract LNG in smaller quantities, the typical size for contracting LNG means that this next tranche of import would likely be met by 1 importer.

6. Based on the above considerations, EMA is of the view that both the RSI framework (i.e. appointing one monopoly importer with a permanent franchise for all incremental demand beyond BGSGM's 3 Mtpa) and the Concurrent Aggregation framework (i.e. appointing 3 new concurrent importers besides BGSGM) are not suitable for the next tranche of LNG import. Both frameworks do not allow Singapore to keep its future options open, or provide Singapore with sufficient flexibility to react to changing global market conditions (see details in Table 1 below).

Table 1: Why RSI and Concurrent Aggregation are not suitable for next tranche of LNG import for Singapore

RSI	Concurrent Aggregation
• Singapore's future gas demand is expected to increase more substantially beyond 2020. The global gas market is also evolving. It would not be prudent to award a monopoly franchise for all of Singapore's future LNG demand to a single company. An aggregator which gives the most competitive deal for the first tranche of LNG may not be the same entity which can offer the best deal for future tranches. In addition, gas users have no alternative if RSI fails to perform, and they cannot buy from another supplier even if a more competitive supplier emerges in future. • As Singapore's incremental gas demand until 2018 is not large, the RSI's "strength" of fully aggregating Singapore's demand to achieve greater bargaining leverage is lessened. Furthermore, current market data indicates that there is no significant price advantage for large volumes compared to smaller volumes of 0.5 Mtpa or less.	• Reduces Singapore's future options and flexibility to react to market changes once all 4 import licences have been awarded. • Over the next few years, the terminal can only support up to 3 concurrent LNG importers as its capacity is still ramping up. Possible to support 4 importers in future when terminal capacity has increased. • The Singapore market would not have sufficient incremental demand in the near term to support 3 new concurrent aggregators.

7. EMA would like to propose and seek industry's views on a **Competitive Licensing Framework (CLF)** to meet Singapore's future LNG demand. The CLF would:

a. Allow Singapore to have the flexibility to procure LNG on a tranche-by-tranche basis, depending on incremental market demand. This approach also allows Singapore to keep our options open to take advantage of opportunities which may arise from changing global market conditions and the emergence of new suppliers;

b. Adopt a competitive process in selecting the LNG importer to ensure that Singapore gas buyers are able to discover the most competitive deal for each tranche;

c. Enhance Singapore's energy security by allowing LNG to be procured from multiple sources or parties, either in the form of long/short-term LNG;

d. Give EMA the flexibility to appoint new LNG importer(s) if there is a need to inject more competition into the market or if incumbents fail to perform; and

e. Provide gas buyers with more supply options so that buyers have greater ability to conduct price discovery and customize their gas supply portfolio to best meet their needs.

8. EMA intends to run a competitive RFP to appoint 1 new LNG importer for the next tranche of LNG import. The CLF does not pre-determine the eventual number of LNG importers in Singapore. It is possible that under the CLF, Singapore could have just 2 importers to meet Singapore's future LNG demand (i.e. BG+1) if these two importers are able to offer the most competitive supplies for all subsequent tranches. It is also possible for Singapore to have a structure with multiple importers (i.e. BG+2 or BG+3) if new importers offering more competitive supplies to Singapore gas buyers are appointed in the future. This can be decided after the second tranche of LNG import, depending on Singapore's LNG demand and how the global gas market has evolved.

9. EMA plans to incorporate feedback from end-users on their preferences for future suppliers and gas contracts into the RFP specifications. When the RFP is launched, potential LNG importers will be invited to submit gas supply proposals to EMA. EMA has outlined 2 possible ways to implement the RFP in Section 4 of this paper for the industry's feedback and comments.

10. In conjunction with the proposed CLF, EMA proposes the following post-3 Mtpa measures:

a. EMA is considering allowing parties to apply for a licence to import spot cargoes subject to conditions. We are evaluating how such applications should be processed, and what are the conditions that parties have to meet before they can import spot cargoes. EMA is developing a Terminal Access Code to provide greater clarity on how terminal capacity is allocated to spot imports without affecting the terminal's ability to cater to long-term imports. The import of spot LNG cargoes supports the development of Singapore as a LNG trading hub, as multiple parties will be able to access Singapore's gas market, as well as the LNG terminal's capacity, for reloading or break-bulk purposes. EMA will also continue to position the LNG terminal as an open-access terminal, and for the terminal operator to remain independent, i.e. the terminal operator should not be involved in the business of importing LNG to compete with its customers.

b. New Piped Natural Gas (PNG) imports could also be allowed, subject to EMA's approval on a case-by-case basis. EMA is open to allowing new PNG supplies if these come from reliable sources and are competitively-priced. This will provide buyers with more choices of supply beyond LNG.

c. EMA intends to develop a secondary gas market in Singapore to allow the on-selling of gas through the domestic gas pipeline network.

11. While Singapore's incremental gas demand for the next few years is not large, domestic demand is projected to grow more rapidly after 2020. The global gas market is also expected to evolve, with the emergence of new supplies and new forms of contracts. EMA will monitor these developments and trends, and regularly evaluate if the proposed LNG import framework remains most optimal to meet Singapore's longer term needs.

12. EMA invites comments and feedback to the 2nd consultation paper. Please submit written feedback to EMA_RD_LNGD@ema.gov.sg by 31 July 2013 (5pm). Alternatively, you may send the feedback by post/fax to:

LNG Department
Regulation Division
Energy Market Authority
991G Alexandra Road, #01-29
Singapore 119975
Fax: (65) 6835 8020

13. Anonymous submissions will not be considered.

14. EMA will acknowledge receipt of all submissions electronically. Please contact Mr Tan Lueneng at 6376 7576, Ms Irene Tan at 6376 7831, or Ms Teo Lay Hui at 6376 7891 if you have not received an acknowledgement of your submission within two business days.

15. EMA will be happy to meet with industry players on an individual basis to discuss their feedback. Please contact EMA via EMA_RD_LNGD@ema.gov.sg if you wish to arrange a meeting with EMA.

16. EMA reserves the right to make public all or parts of any written submissions made in response to this consultation paper and to disclose the identity of the source. Any part of the submission, which is considered by respondents to be confidential, should be clearly marked and placed as an annex. EMA will take this into account regarding the disclosure of the information submitted.

Contents

SECTION 1: BACKGROUND

1. Today, more than 80% of Singapore's electricity is generated from natural gas. Major industry players are also dependent on gas as a critical fuel. Currently, all Singapore's gas is supplied via piped natural gas (PNG) from Malaysia and Indonesia. To enhance Singapore's energy security, the Government announced in 2006 that Singapore would import LNG to meet future rising demand for energy. In 2007, Government decided to procure LNG through an Aggregator, who would have an exclusive franchise to import LNG and sell regasified LNG in Singapore for a demand of up to 3 Mtpa or 2023, whichever is earlier. In April 2008, EMA appointed BG Asia Pacific Pte Ltd[4] as the Aggregator through a competitive Request-for-Proposal (RFP) process. As of end April 2013, BGSGM has contracted around 2.7 Mtpa of LNG. Singapore has also started importing LNG with the commencement of commercial operations at the LNG terminal on Jurong Island in May 2013.

2. In preparation for future LNG imports for Singapore, EMA launched an initial consultation exercise on 30 Mar 2012 to study the options for Singapore's future LNG procurement framework. The objective of the framework is to allow Singapore to continue to access competitively-priced and reliable supplies of LNG that meets the needs of local gas users, whilst optimizing the LNG terminal's throughput capacity through efficient operations and usage. The initial consultation paper outlined two possible frameworks for industry feedback, namely Regulated Sole Importer (RSI) and Multiple Aggregators:

a. Under the RSI framework, a Government-appointed RSI would import all incremental LNG for Singapore beyond BGSGM's current 3 Mtpa of supply. EMA would regulate the RSI's returns as well as its LNG procurement, gas sales prices and contract terms. A variant of this model is adopted by some jurisdictions in Asia such as South Korea, Taiwan and Thailand.

b. Under the Multiple Aggregators framework, there would be up to four large LNG importers (including BGSGM) serving Singapore's LNG demand. This could be implemented through two methods: (i) Government-mandated Aggregation or (ii) Market-driven Aggregation.

    i. Under Government-mandated Aggregation, importers are awarded LNG importer licences through a competitive RFP process. Potential aggregators will be assessed on a range of factors including basis of pricing, importer's financial strength and credibility of supply plan. EMA could appoint up to 3 new importers (a) sequentially over time or (b) concurrently. These are described in the consultation paper as the Sequential Aggregation and Concurrent Aggregation approaches respectively.

    ii. Under Market-driven Aggregation, competition between players in the LNG import sector could give rise to natural aggregation of demand via a few importers, including the formation of buyers' groups and other commercial

[4] BG subsequently incorporated a separate vehicle, BG Singapore Gas Marketing Pte Ltd, to be the Aggregator.

arrangements between gas buyers in Singapore. EMA would set the entry criteria that importers must fulfill to qualify for access to the LNG terminal.

3. The 1st round of consultation closed on 30 June 2012. Section 2 of this consultation paper will describe the industry's feedback on the abovementioned models.

SECTION 2: SUMMARY OF INDUSTRY FEEDBACK

1. EMA has received written feedback from 31 companies. In general, industry players recognised that the global gas landscape has changed and will continue to evolve over the next decade. For example:

a. LNG is increasingly sold through smaller, shorter contracts and spot cargoes, rather than through traditional high-volume long-term contracts. There is also a growing preference for LNG suppliers and buyers to have a portfolio of contracts to reduce concentration risks. It is no longer necessary for buyers to procure large volumes in a single contract. This is supported by market data of recent transactions, which shows that there is no price advantage associated with large contracts compared to buying small contracts of 0.5 Mtpa or less.

b. The timing of LNG procurement is a key factor that affects the price of LNG, as prevailing global demand and supply dynamics will influence the price of LNG contracts. For example, the surge in unconventional gas production in the US will introduce new and significant LNG supply that is indexed to Henry Hub, thus giving LNG buyers more choices. There will also be new supplies when liquefaction projects from the US, Australia, Papua New Guinea, Russia and East Africa enter the market over the next decade.

2. There were different views and no clear consensus from stakeholders on which of the potential frameworks could meet the objectives of enhancing Singapore's energy security and improving price competitiveness for our natural gas supplies. EMA has summarised the industry's feedback on the various frameworks in **Table 2** below.

Table 2: Summary of Industry Feedback on Potential Frameworks

	For	**Against**
RSI	• Provides a single face to global gas market. Prevents multiple Singapore buyers from chasing the same supply source(s) and bidding up prices. • Makes optimal use of the terminal infrastructure and simplifies operations • Able to create a pooled price for a portfolio of spot and term contracts • Demand aggregation gives Singapore strong negotiating leverage • RSI could adopt a "cost pass-through" model to reassure buyers that they have access to global LNG prices (i.e. without substantial middleman mark-up).	• Risky to allow all future LNG supplies to be procured by a single entity that may fail to perform. • Difficult to regulate and incentivise the RSI. • RSI may be handicapped by regulation or the need to involve gas buyers in decision making process. • There is cross-subsidisation between gas buyers when pooling the gas price. • Buyers unable to discover price and competitive deals as there are no alternative LNG importers to turn to. • Buyers have less negotiation leverage opposite the RSI. Likely to be forced to accept contract terms that do not suit business needs.

	For	Against
Sequential Aggregation	• Provides good balance between aggregation to achieve sufficient scale and competition while considering the limited growth in near-term gas demand. • Allows EMA to time the import of new supplies and achieve periodic price resets. • Provides flexibility in setting franchise sizes, timing of franchises.	• Risk of limited interest in being next aggregator due to low near-term incremental demand. • Insufficient competition between gas importers due to limited number of importers available at any point of time.
Concurrent Aggregation	• Maximises competition by having 3 new importers as once. • Able to attract many suppliers since each supplier only needs to offer a small part of their portfolio.	• Risk of limited interest in being next aggregator due to low near-term incremental demand. This risk of "fragmenting market demand" is greater in the case of Concurrent Aggregation, compared to Sequential Aggregation.
Market-driven Aggregation	• There is no need to time the market or quickly appoint new importers. Better to let the market decide on the appropriate timing. • Competition is the best mechanism to achieve lower prices for gas buyers. • Creates greater access to multiple LNG supply sources, thus providing additional price discovery and negotiation leverage to buyers. Negotiations with multiple suppliers provide buyers with greater ability to meet their own unique needs. • Security of supply is enhanced when multiple importers are active and have the ability to import cargoes at short notice in the event of supply disruptions.	• The competitive benefit will likely be small, particularly given the low level of incremental demand in the near/mid-term. • Multiple importers will further fragment an already small Singapore market. • Having multiple importers risks bidding up prices when the global supply market is tight. • Having multiple importers with small volumes active in the terminal will complicate terminal operations and limit the overall throughput volume that the terminal infrastructure can serve.

3. The industry was also consulted on possible features that could be used to augment the LNG import frameworks:

a. A Challenge and Entry Mechanism could allow gas buyers that are able to achieve better deals (compared to offers from the incumbent importers) to directly access the LNG Terminal's import capacity. If these buyers are buying LNG for their own use, they are likely to be small compared to the incumbent importers of LNG. One way for small buyers to gain access to the terminal without compromising on terminal efficiency is to require their LNG imports to be pooled or subsumed with other importers such that they act as a single large terminal user. This could entail a substantial amount of inventory borrowing and lending (B&L) amongst terminal users.

Industry players noted that the intention of the Challenge and Entry Mechanism was to enhance competition and choice for gas buyers. While this was a desired outcome, some respondents felt that if any industry player could easily challenge the newly licensed importers, there would be little value for potential importers to compete for an import licence as they would choose to play the role of a "challenger".

Most respondents also felt that the B&L mechanism had implementation challenges. Players recognised that limited B&L mechanisms already exist in the global market today. However, if this mechanism is applied to a significant amount of inventory, it would cause LNG importers to be inter-dependent on each other for supply, and the risk of such interdependency may be too great for each party to manage given the cost of each LNG cargo. It would not be prudent for EMA to adopt an untested pooling (or B&L) mechanism for all users of the LNG terminal. Nevertheless, respondents acknowledged that it is possible for a group of industry players to voluntarily enter into B&L mechanisms on their own accord and thus act as a single terminal user.

b. Some respondents have also asked if provisions can be made to allow the import of upstream equity LNG for their own domestic consumption. The industry feedback was split on this matter. Some felt that allowing equity LNG imports would compromise the commercial viability of the appointed importer(s) as there would be less demand to aggregate. There was also concern that equity LNG importers would secure a licence but only serve their own needs instead of selling LNG to the rest of the market. On the other hand, supporters felt that there was no harm allowing equity LNG imports as this can be treated as another gas supply option under open market competition.

SECTION 3: LONG-TERM STRUCTURE FOR SINGAPORE'S GAS MARKET

1. As global gas markets can change quickly, Singapore's gas import framework should have the flexibility to adapt to changing market conditions whilst ensuring that Singapore builds a portfolio of competitively-priced and reliable gas supplies. This means that Singapore should:

a. Import gas from multiple supply sources, so as to reduce the impact of a single gas supply source's failure on Singapore's economy.

b. Procure LNG in multiple tranches over time (instead of a single large purchase) to meet its growing gas demand. This would smoothen the volatility of the cyclical global LNG market, and address the concern that Singapore is overly exposed to any single tranche of gas price at any point in time. It is risky, especially for a small economy like Singapore, to try and "time the market" by taking big bets with large volume purchases. Entering the market at the wrong time could commit Singapore to a substantial amount of LNG at less competitive prices compared to what future suppliers could offer. It would be better to enter the market regularly; discover what the prevailing prices are; and buy smaller volumes for each purchase.

c. Put in place a competitive process to ensure that Singapore gas buyers are able to access the most competitive deal each time we enter the global market to procure LNG.

d. Have gas contracts with different durations (including spot cargoes) and which expire at different times. If all gas contracts were to expire at the same time, they would have to be renewed together, thus exposing Singapore to the abovementioned risks of purchasing large LNG volumes at once.

e. Where possible and commercially sensible, look for opportunities to diversify the price indexation of gas contracts. Currently PNG prices are indexed to fuel oil prices and Asian LNG prices are indexed to crude oil prices. In recent years, gas contracts indexed to gas hubs have also become available. Some exposure to alternative indexes could help manage gas price volatility.

f. Where possible and commercially sensible, implement price safeguards such as periodic price reviews to reflect prevailing market conditions or S-curve pricing.

g. Allow gas buyers to customise their own gas supply portfolio of both LNG and PNG at terms, conditions, contract durations and sufficient flexibility that fit their business needs. Gas buyers should also be able to discover prices through negotiations with different suppliers.

h. Support the development of a LNG trading hub through allowing multiple parties access to (i) Singapore's gas market and (ii) the LNG terminal's capacity for reloading or break-bulk purposes. This objective requires the LNG terminal to be an open-access terminal, and for the terminal operator to remain independent, i.e. the terminal operator should not be involved in the business of importing LNG to compete with its customers.

2. Singapore's gas demand outlook should also be considered. EMA estimates that up to 2018, the incremental gas demand beyond BGSGM's 3 Mtpa is about 1-1.5 Mtpa, followed by more rapid growth after 2020. In addition, the terminal can only support up to 3 concurrent LNG importers (including BGSGM) over the next few years as its capacity is still ramping up. When the terminal capacity is further expanded in future, it can support up to 4 concurrent importers (including BGSGM).

Assessment of RSI framework

3. EMA has assessed that the RSI framework (i.e. appointing one monopoly importer with a permanent franchise for all incremental demand beyond BGSGM's 3 Mtpa), is not suitable for achieving Singapore's objectives of energy security and price competitiveness for its next tranche of LNG import. Our reasons are as follows:

a. Singapore's near-term incremental gas demand is not large. The incremental gas demand up to 2018 is estimated at around 1 to 1.5 Mtpa. However, demand is expected to increase more substantially beyond 2020. The global gas market is also evolving. It would not be prudent to award a monopoly franchise for all of Singapore's future LNG demand to a single company. An aggregator which gives the most competitive deal for the first tranche of LNG may not be the same entity which can offer the best deal for future tranches. In addition, gas users have no alternative if the RSI fails to perform, and they cannot buy from another supplier even if a more competitive supplier emerges in future.

b. As Singapore's incremental gas demand until 2018 is not large, the RSI's "strength" of fully aggregating Singapore's demand to achieve greater bargaining leverage is lessened. Furthermore, current market data indicates that there is no significant price advantage for large volumes compared to smaller volumes of 0.5 Mtpa or less. Instead, there are other factors that affect the price of LNG, including:
   i. Global LNG supply and demand situation;
   ii. Distance to supply source;
   iii. Supply and demand situation of shipping market;
   iv. Project development cost;
   v. Counterparty risks, e.g. default risk, country risk, credit support provided;
   vi. Gas quality, e.g. rich vs. lean; and
   vii. Whether cargoes scheduling is rigid or flexible.

c. Some industry players held the view that having multiple Singapore importers competing for the same upstream supply could result in prices being bidded up for Singapore. EMA agrees that this concern is valid if there were just one exclusive supplier for the product. However, it is not applicable for LNG as there are multiple suppliers from different countries around the world which importers could buy from.

Assessment of Concurrent Aggregation framework

4. The Concurrent Aggregation framework is also not suitable for achieving Singapore's objectives of energy security and price competitiveness for its next tranche of LNG import. Our reasons are as follows:

a. This framework reduces Singapore's future options and flexibility to react to market changes. As the LNG Terminal is only able to accommodate up to 4 large LNG importers without adversely affecting its ability to effectively deliver 15 Mtpa of capacity throughput, appointing 3 new importers concurrently will prevent EMA from appointing a new importer in the future until additional LNG Terminals are developed.

b. Over the next few years, the terminal can only support up to 3 concurrent LNG importers as its capacity is still ramping up. The terminal is able to support 4 importers in future when its capacity has increased.

c. The Singapore market would not have sufficient incremental demand in the near term to support 3 new concurrent aggregators.

SECTION 4: PROPOSED POST-3 MTPA LNG IMPORT FRAMEWORK

1. In developing the Post-3 Mtpa LNG Import Framework, we note that the global gas landscape will continue to evolve over the next decade:

a. Prevailing global demand and supply dynamics will influence the price of LNG contracts over time.

b. New supplies will become available when liquefaction projects from the US, Australia, Papua New Guinea, Russia and East Africa enter the market over the next decade.

c. Pricing practices will continue to evolve as new and significant LNG supply that is indexed to Henry Hub and other non-oil indexes become available and give LNG buyers more choices.

d. The availability of smaller, shorter contracts and spot cargoes is set to increase as there is also a growing preference for LNG suppliers and buyers to have a portfolio of contracts to reduce concentration risks and dependency on a single large buyer or seller.

2. Layering onto the evolving global gas landscape is Singapore's demand for LNG going forward. EMA estimates that up to 2018, the incremental gas demand beyond BGSGM's 3 Mtpa is about 1-1.5 Mtpa, followed by more rapid growth after 2020. Singapore is therefore expected to procure LNG in several smaller tranches over time instead of a single large purchase.

The Competitive Licensing Framework

3. To achieve our long-term objectives of energy security and price competitiveness, EMA is proposing a Competitive Licensing Framework (CLF) for the post-3 Mtpa LNG imports for Singapore with the following key features:

a. Adopt a "tranche-by-tranche" approach for Singapore to enter the global gas market and procure LNG at regular intervals to meet domestic gas demand. There will be a competitive process (whether government-mandated or market-driven) to select the best importer(s) with the most competitive supplies each time we enter the global market to procure LNG. This approach allows Singapore to keep our options open to take advantage of any opportunities that arise from changing global market conditions and the emergence of new suppliers who could offer more competitive terms. It also enhances Singapore's energy security by allowing LNG to be procured from multiple sources, and through a mix of long and short-term supplies.

b. For each tranche of LNG purchase, Singapore has the flexibility of appointing one or more new importers or allowing incumbents to increase their supplies. The government can also decide on the timing of when we should shift from government-mandated aggregation to market-driven aggregation. The CLF does not pre-determine the eventual number of LNG importers in Singapore. It is possible that under the CLF, Singapore could have just 2 importers to meet Singapore's future LNG demand (i.e. BG+1) if the importers are able to offer the most competitive supplies for all subsequent tranches. It is also possible for Singapore to have a structure with multiple importers (i.e. BG+2 or BG+3) if new importers offering more competitive supplies to Singapore gas buyers are appointed in the future. This can be decided after the second tranche of LNG import, depending on Singapore's LNG demand and how the global gas market has evolved.

4. Regardless of the number of licensed LNG importers, the CLF enhances Singapore's energy security by allowing multiple parties to supply LNG to Singapore in the event of an emergency (either in the form of term or spot LNG).

5. The CLF will also facilitate the efforts to develop Singapore into a LNG trading hub. The CLF allows multiple parties to be a part of Singapore's gas market by allowing these parties fair access to the LNG Terminal and to sell to Singapore's gas buyers. This will foster greater liquidity and trade volume amongst gas players.

How the CLF Works – A Competitive RFP for New LNG Imports

6. EMA intends to run a competitive RFP to appoint 1 new LNG importer for the next tranche of LNG import. EMA is open to different commercial arrangements. The new LNG importer can be a local or foreign company. It could be in the form of (i) a single LNG importer; (ii) a consortium of players that act as a single LNG importer; or (iii) a single B&L pool operator[5] which manages cargo scheduling and inventory of LNG on behalf of multiple LNG importers.

7. EMA will request potential gas buyers to submit (a) suggested specifications to help EMA design the RFP (e.g. energy security, price, offtake flexibility); and (b) their estimated gas demand. This will provide EMA with more information on the industry's needs and preferences that we could incorporate in the RFP.

8. When the RFP is launched, potential LNG importers will be invited to submit gas supply proposals to EMA to demonstrate how they could provide the best overall gas supply solution for Singapore. The proposals should contain the following:

a. Outline a gas procurement strategy including long, medium, short term and spot cargoes procurement strategy. Strategies that include PNG in the overall solution will also be considered;

b. Demonstrate how the proposed procurement strategy can achieve supply security (e.g. potential supply sources, overall portfolio etc);

[5] The pool operator will be licensed as a combined entity and be subject to similar rules and regulation as other terminal user(s). The pool operator could be one of the pool participants, or a separate entity. In order for a pool participant to carry out the role of a pool operator, effective separation may be required between operating and commercial organizations.

c. Highlight how gas consumers' needs will be better met (e.g. offtake flexibility, supply terms and duration etc);

d. Highlight how the overall gas supply solution will deliver competitive pricing for gas consumers (e.g. price indexation, price safeguards such as "S-curve" and price reviews); and

e. Show how the proposed gas solution can facilitate the development of an LNG trading hub in Singapore.

9. After receiving the proposals from potential importers, EMA envisages that there are 2 different options for running the RFP (See **Table 3**). Both options represent different trade-offs in (i) the amount of influence that a gas buyer has on the outcome of the RFP, (ii) the competitive pressure imposed on the gas importers, and (iii) the complexity of the RFP process.

Table 3: Possible RFP Options

Option 1	Option 2
i) EMA will conduct a "Buyers' Survey", where Buyers will submit to EMA a ranking order of their preferred bidders. Specifically, EMA will inform the industry of whom the potential bidders are, so that Buyers can proceed to engage these potential bidders to discover potential supply terms. At the end of 3 months, buyers will submit a ranking order of their preferred bidders. ii) The results from the Buyers' Survey are for EMA's reference only and will not be published. EMA will assess the bids and award 1 <u>firm</u> import licence to the selected importer. iii) The appointed importer must submit to EMA a "Baseline GSA"[6] that represents its firm minimum offer to all gas buyers before negotiations can begin. All gas buyers would have to subsequently negotiate with the appointed importer for gas supply. iv) The appointed importer will have an exclusive franchise to import LNG until it has achieved sales of at least 1 Mtpa, or for 3 years, whichever is earlier.	i) Similar to Option 1, a "Buyers' Survey" will be conducted. EMA will shortlist up to 5 potential importers after evaluation of proposals received. ii) Shortlisted importers must submit a "Baseline GSA" to EMA that represents their firm minimum offer to all gas buyers before negotiations can begin. iii) Shortlisted importers negotiate with potential buyers to sign LNG contracts. These contracts will have to incorporate a condition precedent such that they are only valid if EMA awards a firm licence to that bidder. iv) After a predefined period (e.g. 1 year), EMA will award 1 new licence. The award of the licence will consider the following criteria (the "Licence Award Criteria"): a) Contracted quantity negotiated with potential buyers (substantiated with signed LNG contracts) b) Ability to meet future demand c) Diversification of sources at country level d) Terms of supply (e.g. price reviews, price indexation etc) v) The appointed importer will have an exclusive franchise to import LNG until it has achieved sales of at least 1 Mtpa, or for 3 years, whichever is earlier.

[6] This refers to a template Baseline Gas Sales Agreement which appointed importers are prepared to offer future potential buyers. The template will minimally allow buyers to specify their proposed volumes, contract duration, start date. The Baseline GSA would help ensure that once the new importer(s) have been determined, any potential gas buyers would be able to receive a gas supply offer without being unduly disadvantaged.

10. As indicated in **Table 3**, the CLF is designed to give gas buyers a range of choices. This allows gas buyers to customize their own gas supply portfolio as well as conduct their own gas contract negotiations and price discovery. Compared to the previous RFP held in 2007, gas buyers would have a greater say in the new gas import framework. Gas buyers will be able to provide their input to influence the specifications of the RFP and appointment of new LNG importer.

Questions to Industry Players

1) Does the CLF meet the objectives of supply security and price competitiveness?

2) What are the pros and cons of the two RFP options in **Table 3**? Which option do you prefer? Please include your reasons.

3) Besides the two options in **Table 3**, are there other RFP options which can be considered?

Evaluation of Contracted Quantities for RFP Option 2

11. Under Options 2, the contracted quantities of the potential importers are taken into consideration for the award of the firm licence. These quantities are subject to the following conditions:

a. The candidate must demonstrate firm upstream supply agreements for LNG supply with Condition Precedents (CPs) on licence award.

b. The candidate must demonstrate firm gas buyer agreements that underpin the sale of a base volume, e.g. 0.6 Mtpa (the “Base Volume”) with CPs on licence award. This ensures that the candidate demonstrates its ability to aggregate demand and attracts customers with firm offers, while allowing the candidate to take some upstream risks and secure more gas than they have sold. This also allows the candidate to meet incremental demand without having to secure new gas from the global LNG market.

c. The firm gas buyer agreements must have a minimum duration of 3 years in order to be counted towards the Base Volume. Candidates may be allowed a ramp-up period (3 years) to secure sales in order to reach the Base Volume. This is to accommodate the phasing of different contracts with different gas buyers by the candidate.

d. First gas must commence flowing within 5 years from the date that the licence is awarded. This prevents parties from hoarding the licenses by securing buyers that would only commence gas flow many years later.

e. There is no upper limit to the total volume or number of contracts that the successful candidate(s) can establish.

12. Under Option 2, there could be multiple shortlisted candidates who are able to meet the Licence Award Criteria[7], EMA could further consider the following factors in the selection process (refer to **Figure 1** below):

a. Shorter ramp-up period – potential importers that can better optimize the terminal operations by maximizing its throughput are preferred.

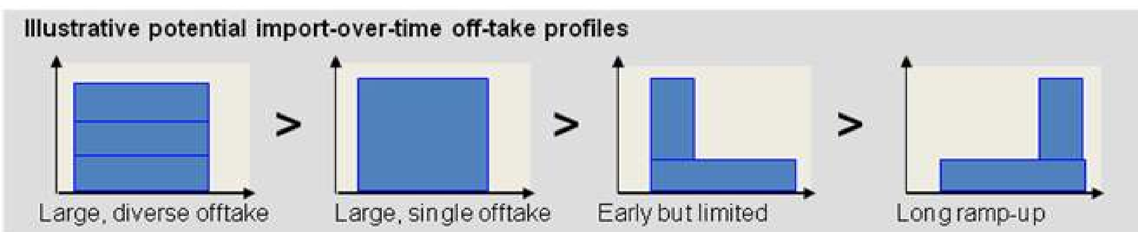
b. Higher volume of total gas import – potential importers that are able to attract more buyers and improve terminal efficiency through its larger sales volume are preferred.

c. Longer continuity of firm supply contracts of at least 1 Mtpa – potential importers capable of attracting suppliers and buyers for a longer contract period (thus improving terminal efficiency) are preferred.

d. Higher gas flow volume in earlier years – potential importers that can better optimize the terminal operations by maximizing its near-term throughput are preferred.

e. Greater diversity of offtake customers – Greater offtake diversity is preferred. This is to encourage demand aggregation amongst LNG buyers.

Figure 1: Illustration of preferred offtake profiles over time



Questions to Industry Players	
1)	Is it appropriate to use contracted quantities as a key consideration when appointing the new LNG importer?
2)	Is it reasonable to impose the considerations *(described in paragraphs 11 and 12)* on the measurement of contracted quantities? Do these considerations ensure that the new import licence is awarded to the right party, whilst being able to meet the needs of gas buyers?

Low-Take Penalty

13. After the allowed ramp-up period (*specified in paragraph 11c*), the LNG importer will have to sustain a minimum level (1 Mtpa) of contracted demand throughput for every year

[7] See Table 3, Option 2.

or be subject to a penalty fee that is proportional to the shortfall. This is to ensure the importer puts in continuous efforts to secure new contracts and maintains a reasonable size, as well as ensure that terminal efficiency is not compromised by a need to cater to very small term LNG importers. The penalty fee should not be passed through to the importer's customers as doing so will render the penalty pointless.

Questions to Industry Players

1) Is the Low Take Penalty a viable concept that achieves the intended outcome of ensuring that LNG importers (i) continue to grow and (ii) do not fall below a certain size and affect terminal efficiency?

2) What would be a reasonable quantum/formula for calibrating the Low Take Penalty?

Obligation to Offer

14. EMA would require the licensed importer to minimally offer the Baseline GSA to any gas buyers who request for supply to ensure that small gas buyers are not deprived of gas supply offers. The Baseline GSA will allow buyers to specify their proposed volumes, contract duration, start date. The Baseline GSA would help ensure that once the new importer has been determined, any potential gas buyer would be able to receive a gas supply offer without being unduly disadvantaged.

15. EMA notes that it is possible for the licensed importer to request the flexibility to review the Baseline GSA in order to reflect changing market conditions. However, the licensed importer could take advantage of the flexibility to amend the Baseline GSA by revising the deal in favor of itself, as the importer could enjoy temporary market power due to the exclusivity franchise. We would like to seek industry's views on whether EMA should allow periodic reviews of the Baseline GSA.

Questions to Industry Players

1) Is it reasonable to impose an obligation to offer on the Gas Importers?

2) Is it reasonable to require Gas Importers to offer a Baseline GSA?

3) Should EMA allow periodic reviews of the Baseline GSA?

Self-Supply of LNG

16. Some large gas users in Singapore such as refineries and petrochemical companies provided feedback that they would like to be allowed to import their own upstream equity LNG for their own consumption. Others such as the gencos have suggested that they would like to import LNG for themselves. Such large gas users could potentially achieve the minimum volume to qualify for an importer licence based on their own demand, yet serve only their needs and not make offers to other buyers. One possibility is to set a condition that volumes for self-supply can only contribute up to a

certain percentage of the total contracted demand. This will encourage such equity LNG players to aggregate demand with other gas buyers.

17. EMA is open to considering alternative arrangements that could meet the needs of stakeholders for self-supply, as well as to ensure that equity LNG importers would also supply on equal terms to other LNG buyers in Singapore. Otherwise, small buyers could end up being stranded without supplies or having to pay much higher gas prices.

Question to Industry Players

1) How can we best allow equity LNG players to self supply and at the same time meet the needs of other gas buyers in Singapore?

Extension of LNG Import Licence Expiry Date

18. When a new LNG import licence is awarded, the expiry date of the licence will be the same as the latest expiry date of the importer's GSA(s). This will allow the importer to service its GSAs for their full duration. As the importers are expected to grow and enter into new GSAs over time, EMA intends to allow the licence expiry date to be extendable subject to two conditions:

a. The importer must enter into a new GSA with its customers that has a duration extending beyond the licence expiry date; and

b. The date when the new GSA is executed must not be within the last 2 years of the licence's expiry date. The aim of this condition is to enhance market competition. The licensed importers will be incentivised to meet the growing gas demand of buyers so that they do not lose their licence. This condition also prevents under-performing importers from hoarding the limited number of LNG import licenses. The expiry date of all LNG import licences will be published on EMA's website, so that future potential importers would know when the freed-up licence would be available and have sufficient time to prepare to compete for that licence. An ex-importer that has just lost its licence is not automatically prevented from participating in the competition of the new licence.

Question to Industry Players

1) Is the licence extension mechanism able to ensure that LNG importers are continuously incentivised to grow and meet the growing gas demand of buyers?

Regular Evaluation of LNG Import Framework

19. While Singapore's incremental gas demand for the next few years is not large, domestic demand is projected to grow more rapidly after 2020. The global gas market is also expected to evolve, with the emergence of new supplies and new forms of contracts. EMA will monitor these developments and trends, and regularly evaluate if the proposed LNG import framework remains most optimal to meet Singapore's longer term needs.

SECTION 5: OTHER GAS MARKET INITIATIVES

1. EMA intends to supplement the CLF with a number of other initiatives to increase the choices available to gas buyers, as well as enhance our energy security and price competitiveness.

Spot LNG Import

2. To give buyers more options for gas supplies, EMA is considering allowing parties[8] to apply for a licence to import spot LNG cargoes, subject to conditions. EMA anticipates that there will be sufficient spare berthing, storage and regasification capacity at the LNG terminal which could be used for the import of spot LNG cargoes.

3. EMA is evaluating how applications for spot LNG import should be processed, and what are the conditions that applicants have to meet to enhance Singapore's energy security and price competitiveness.

4. To facilitate the potential import of spot LNG, EMA is developing a Terminal Access Code (TAC) to provide clarity on how terminal capacity could be allocated to spot import without affecting the terminal's ability to cater to long term imports. The TAC, which will adopt the best practices of other similar European open access TACs, will also set out the congestion management mechanisms. This could be achieved by requiring spare terminal capacity to be bundled into standardised "slots" for use by spot LNG importers. A consultation paper on the proposed principles of the TAC will be released separately.

Questions to Industry Players

1) Should EMA allow spot LNG import? Would this create too much uncertainty for the LNG importer that is appointed at the RFP?

2) How should EMA process applications for spot LNG import? What are the conditions that parties have to meet before they can import spot cargoes?

Review of Policy on Gas Import Control

5. On 30 March 2012, EMA had launched an industry consultation to review the Policy on Gas Import Control. The policy, which took effect on 21 Aug 2006, controls the import of new PNG so as to enable the build-up of demand for LNG. Under the policy, there are two categories of PNG GSAs – (i) those that were entered into by gas importers before 21 Aug 2006 when the policy was implemented ("Existing PNG"); and (ii) those that were entered or are going to be entered into by gas importers after 21 Aug 2006 ("New PNG"). While there are no restrictions on the use of Existing PNG, New PNG needed for non-commercial generation and other uses (such as industrial feedstock and embedded generation for own use) prior to the arrival of LNG may be approved by EMA on a case-by-case basis.

[8] These are parties other than the importer appointed at the RFP process.

6. EMA intends to lift the moratorium on import of PNG after BGSGM reaches its 3 Mtpa franchise or in 2018, whichever is earlier. EMA is open to allowing new PNG supplies if these come from reliable sources and are competitively-priced. Any new PNG imports, if approved by EMA on a case-by-case basis, can be used for commercial generation, non-commercial generation and other uses. This will provide buyers with more choices of supply beyond LNG. To allow for more flexibility in the use of PNG, EMA also intends to allow any existing PNG, if approved by EMA, to be used for commercial generation, non-commercial generation and other uses. In addition, EMA's previously imposed restrictions on reselling or transferring PNG will be removed.

7. A determination paper on the review of the Gas Import Control Policy will be released separately.

Questions to Industry Players

1) Should EMA allow new PNG supplies to be imported? Would this improve the competitive dynamics of Singapore's gas market?

2) Would new PNG imports cause too much uncertainty for potential LNG importers, such that the CLF RFP may not achieve the best possible outcome?

3) Do industry players have any concerns towards the proposal to allow new PNG imports on a case-by-case basis?

EMA's Approval Rights over Gas Contracts

8. To ensure that the imports of new PNG and LNG are continuously able to meet our objectives of energy security and price competitiveness, all new gas supply contracts (e.g. Sales and Purchase Agreements (SPAs) and Gas Sales Agreements (GSAs)) with upstream parties will require EMA's approval on a case-by-case basis.

9. As it is administratively inefficient for EMA to approve each new downstream gas sales contract due to the large number of these contracts, EMA will stipulate the conditions that new downstream gas sales contracts must adhere to. Gas importers will be required to regularly self-declare that their downstream gas contracts are in compliance with the conditions. EMA will also conduct spot-checks on gas importers to detect any non-compliance, which will be tantamount to a breach of licence condition.

Development of Secondary Gas Market

10. EMA intends to develop a secondary gas market in Singapore to enhance the ability of gas buyers to on-sell gas through the domestic gas pipeline network. This will enhance competition in the domestic gas market by allowing consumers to procure gas from one another. It will also allow gas buyers options to optimise their gas supply portfolios and manage their take-or-pay risk.

11. EMA envisages that a more dynamic secondary gas market will require the following initiatives to be implemented:

a. Gas supply contracts should not prohibit the on-selling of gas. Hence, EMA will not allow new gas supply contracts to contain clauses that have on-selling restrictions.

b. The LNG Terminal should be an open access infrastructure that allows spare capacity to be easily booked in a fair manner.

c. Shippers should be allowed to book spare pipeline capacity on short notice in a fair manner. EMA will study the current rules of the Gas Network Code (GNC) and determine if further enhancements need to be made to the GNC.

Questions to Industry Players

1) Should EMA further develop the secondary gas market to enhance the ability for gas buyers to on-sell their gas?

2) Do industry players have any concerns towards the proposal to develop the secondary gas market?

SECTION 6: REQUEST FOR INDUSTRY FEEDBACK

1. EMA wishes to seek the industry's views on the viability and implementation of the proposed CLF and the other gas market initiatives described in this second consultation paper. We also request gas buyers to indicate their projected gas demand and provide their inputs on the criteria for the RFP.

2. Please submit written feedback to EMA_RD_LNGD@ema.gov.sg by 31 July 2013 (5pm). Alternatively, you may send the feedback by post/fax to:

LNG Department
Regulation Division
Energy Market Authority
991G Alexandra Road, #01-29
Singapore 119975
Fax: (65) 6835 8020

3. Anonymous submissions will not be considered.

4. EMA will acknowledge receipt of all submissions electronically. Please contact Mr Tan Lueneng at 6376 7576, Ms Irene Tan at 6376 7831, or Ms Teo Lay Hui at 6376 7891 if you have not received an acknowledgement of your submission within two business days.

5. EMA will be happy to meet with industry players on an individual basis to discuss their feedback. Please contact EMA via EMA_RD_LNGD@ema.gov.sg if you wish to arrange a meeting with EMA.

6. EMA reserves the right to make public all or parts of any written submissions made in response to this consultation paper and to disclose the identity of the source. Any part of the submission, which is considered by respondents to be confidential, should be clearly marked and placed as an annex. EMA will take this into account regarding the disclosure of the information submitted.

Summary List of Questions

7. This paper has raised a number of questions that EMA wishes to seek the industry's views on. Below is a summary list of questions for easy reference:

Section 4: PROPOSED POST-3MTPA LNG IMPORT FRAMEWORK

How the CLF works – A Competitive RFP for New LNG Imports

4.1.a) Does the CLF meet the objectives of supply security and price competitiveness?

4.1.b) What are the pros and cons of the two RFP options in table 3? Which option do you prefer? Please include your reasons.

4.1.c) Besides the two options in table 3, are there other RFP options which can be considered?

Evaluation of Contracted Quantities for RFP Options 2

4.2.a) Is it appropriate to use contracted quantities as a key consideration when appointing the new LNG importer?

4.2.b) Is it reasonable to impose the considerations (described in *Section 4, paragraphs 11 and 12*) on the measurement of contracted quantities? Do these considerations ensure that the new import licence is awarded to the right party, whilst being able to meet the needs of gas buyers?

Low Take Penalty

4.3.a) Is the Low Take Penalty a viable concept that achieves the intended outcome of ensuring that LNG importers (i) continue to grow and (ii) do not fall below a certain size and affect terminal efficiency?

4.3.b) What would be a reasonable quantum/formula for calibrating the Low Take Penalty?

Obligation to Offer

4.4.a) Is it reasonable to impose an obligation to offer on the Gas Importers?

4.4.b) Is it reasonable to require Gas Importers to offer a Baseline GSA?

4.4.c) Should EMA allow periodic reviews of the Baseline GSA?

Self Supply of LNG

4.5.a) How can we best allow equity LNG players to self-supply and at the same time meet the needs of other gas buyers in Singapore?

Extension of LNG Import Licence Expiry Date

4.6.a) Is the licence extension mechanism able to ensure that LNG importers are continuously incentivised to grow and meet the growing gas demand of buyers?

Section 5: OTHER GAS MARKET INITIATIVES

Spot LNG Import

5.1.a) Should EMA allow spot LNG import? Would this create too much uncertainty for the LNG importer that is appointed at the RFP?

5.1.b) How should EMA process applications for spot LNG import? What are the conditions that parties have to meet before they can import spot cargoes?

Review of Policy on Gas Import Control

5.2.a) Should EMA allow new PNG supplies to be imported? Would this improve the competitive dynamics of Singapore's gas market?

5.2.b) Would new PNG imports cause too much uncertainty for potential LNG importers, such that the CLF RFP may not achieve the best possible outcome?

5.2.c) Do industry players have any concerns towards the proposal to allow new PNG imports on a case-by-case basis?

Development of Secondary Gas Market

5.3.a) Should EMA further develop the secondary gas market to enhance the ability for gas buyers to on-sell their gas?

5.3.b) Do industry players have any concerns towards the proposal to develop the secondary gas market?

GLOSSARY

B&L	Borrowing and Lending
BGSGM	BG Singapore Gas Marketing Pte Ltd
CLF	Competitive licensing framework
ELNG	Equity LNG
EMA	Energy Market Authority
Genco	Generation company
GNC	Gas network code
GSA	Gas sales agreement
LNG	Liquefied natural gas
Mtpa	Million tons per annum
PNG	Piped natural gas
RFP	Request for proposal
RSI	Regulated sole importer
SPA	Sales and purchase agreement
TAC	Terminal access code