Principles of Proposed Terminal Access Code

Consultation Paper

Issued on 28 June 2013

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Note: There will be no extension of the deadline for comments and feedback beyond 16 August 2013, 5pm (GMT+8).

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SECTION 1: BACKGROUND

1. On 30 Mar 2012, Energy Market Authority (EMA) published a consultation paper to seek views from the industry on the options for Singapore's future liquefied natural gas (LNG) procurement framework, beyond the 3 million tonnes per annum (Mtpa) franchise with BG Singapore Gas Marketing Pte Ltd (BGSGM).

2. EMA subsequently launched the second consultation paper on the post-3 Mtpa LNG Import Framework on 3 June 2013. The paper proposed a Competitive Licensing Framework to allow Singapore to access secure and competitively-priced gas supplies in an evolving global gas market.

3. As indicated in the 3 June 2013 consultation paper, EMA is developing a Terminal Access Code (TAC) to provide clarity on how terminal capacity could be allocated in a multi-user terminal, as well as the rules of engagement between these terminal customers and the LNG Terminal Operator (LTO). The end in mind is to achieve efficient usage of the terminal while supporting the needs of different terminal users, including LNG importers and customers who are using the terminal for ancillary services such as on-demand storage and regasification, vessel reloading and cooling services.

4. The draft principles of the TAC are described in Section 2 of this paper.

SECTION 2: PRINCIPLES OF PROPOSED TERMINAL ACCESS CODE

1. The proposed TAC is a regulatory document that will be issued and subsequently modified by EMA in consultation with the industry. It will cover capacity allocation for different types of terminal services and congestion management mechanisms that optimise the use of the Jurong Island LNG terminal infrastructure to support LNG imports into Singapore and other ancillary services.

2. The TAC also prescribes the requirements that the LTO, i.e. Singapore LNG Corporation ("SLNG") and terminal customers shall comply with when entering into commercial contracts i.e. the Terminal Use Agreement ("TUA") for LNG terminal services.

Guiding Principles

3. EMA has studied the open access rules governing European multi-user LNG terminals in the development of the guiding principles for the Singapore's TAC, taking into consideration the local energy market framework. EMA proposes that the TAC embody the following guiding principles:

a. The TAC shall support Singapore's LNG import framework to achieve energy security and price competitiveness. The priority of the terminal is to serve Singapore's domestic demand and hence the provision of any ancillary LNG services must not compromise throughput services.

b. Terminal capacity should be allocated fairly through the use of transparent market mechanisms, with the aim of achieving efficient use of the terminal.

c. Terminal customers should be discouraged from hoarding capacity which will adversely affect other terminal customers and Singapore's end users.

d. The TAC should facilitate secondary trading of natural gas and LNG.

e. The TAC is a document that will be updated over time to adapt to evolving market circumstances.

Congestion in the LNG Terminal

4. It is noted that congestion in an LNG terminal may occur in the following situations:

a. **Physical congestion** – Terminal capacity is fully booked and utilised, such that any additional demand cannot be accommodated. Physical congestion can only be addressed by investing in additional terminal capacity. This is not the focus of the TAC.

b. **Contractual congestion** – Terminal capacity is fully booked but part of the booked capacity is unused either regularly or occasionally and there is still capacity to meet additional demand.

5. The TAC is intended to minimise contractual congestion and increase the terminal's efficiency, while supporting the needs of different terminal users, including LNG importers and customers who are using the terminal for ancillary services.

Services at the LNG Terminal

6. The TAC should recognise that the LNG Terminal is able to provide a number of services to its customers, and each service comprises a number of activities. As the primary role of the LNG Terminal is to meet domestic gas demand, these services will be subject to a priority order under the TAC.

7. The LNG terminal is able to support the following activities:

a. Unloading of LNG from berthed vessels;

b. Storage of LNG;

c. LNG re-gasification and send-out into the local gas transmission network;

d. Reloading of LNG into berthed vessels;

e. Gas treatment services, if applicable; and

f. Reloading of LNG into LNG delivery trucks, if applicable.

8. These activities can be combined in various permutations to provide the following services to its customers (see Table 1 below):

Table 1: Services to be provided at the terminal

Service	Unload LNG from vessel	Storage of LNG	LNG regas and send-out	Reload LNG into vessel	Priority Order	Remarks
Through put Service (term LNG)	X	X	X		1	Up to a maximum of 4 terminal customers licensed to import term LNG may concurrently receive this service. As term LNG importers have an obligation to sustain short/long term imports of LNG for domestic consumption, term LNG importers will be granted top priority to access the terminal's services.
Through put Service (spot LNG)	X	X	X		2	EMA is considering allowing customers who are not one of the licensed term LNG importers to import spot LNG (spot imports are defined as volumes ≤1 cargo of LNG). As these customers are importing LNG to supplement domestic demand, they would have higher priority than other ancillary service customers in accessing terminal's services.
Storage and Send-out (S&S)		X	X		3	Envisaged to be used by terminal customers who require more flexibility in their send-out profiles. The LNG inventory has to be purchased via in-tank transfer. This service is contracted on a spot basis.
Storage and Reload (S&R)	X	X		X	4	Envisaged to be used for LNG physical trades, break-bulk and bunkering. This service is contracted on a spot basis.
Vessel Cool-down	Depends on how LNG is being procured	X		X	5	Envisaged to be used to cool down LNG vessels leaving dry dock. These customers would need to source for their own LNG, which could be (i) bought via in-tank transfer from other terminal users, or (ii) unloaded into the tanks from a LNG vessel.
LNG truck loading		X			6	Envisaged to be used to fill up LNG trucks, in lieu of LNG regasification. The truck loading facility has yet to be constructed.

Questions:

1) Is it necessary to dedicate a fixed portion of terminal capacity for the import of spot cargoes and provision of ancillary services?

2) Do you agree with the proposed priority order for each service? Should there be a priority order for terminal customers other than the term importers?

Question:

3) Do you agree with the proposed definition of spot imports?

Determination of Terminal Tariff

9. In general, terminal tariffs are regulated for services that directly affect the price of gas for end users in Singapore. This will include throughput services that provide regasified LNG to the onshore market through term or spot LNG imports. Regulation of these tariffs will allow the LTO to make a reasonable return commensurate with its approved Weighted Average Cost of Capital (WACC). The tariff for other terminal ancillary services (i.e. services not price-regulated by EMA) can be decided commercially between the LTO and its customers.

Question:

4) Should the LTO charge equal tariffs for spot and term throughput, or should there be a premium/discount for either service?

Licensing by EMA

LNG importers

10. LNG importers[1] must be licensed by EMA as either term LNG importers or spot LNG importers:

a. **Term importers** – A limited number of gas import licences for long/short-term LNG import may be granted by EMA, as the LNG Terminal has been assessed to be only able to support up to 4 term LNG importers. The policy for the issuance of such licences is set out in EMA's second consultation paper on "Post-3 Mtpa LNG Import Framework".

b. **Spot importers** – EMA is considering allowing parties to apply for a licence to import spot cargoes subject to conditions. EMA is evaluating how applications for spot LNG imports should be processed, and what are the conditions that applicants have to meet to enhance Singapore's energy security and price competitiveness.

Other terminal customers

11. EMA envisages that there is currently no need to license ancillary service customers (S&R, S&S, Vessel Cool-down, and LNG truck loading). This policy will be

[1] LNG importers refer to parties who ship LNG cargoes from other countries into Singapore's LNG terminal, utilize the terminal services and either conduct in-tank sale of LNG at the terminal or regasify the LNG for injection into the local transmission network. S&S and S&R customers are therefore not considered as LNG importers.

reviewed regularly and EMA reserves the right to subject these activities and terminal customers to licensing in the future.

12. A summary of the differences between term importers and other terminal customers can be found in **Annex A**.

Contractual Arrangement with LTO under TUA

13. All terminal customers will need to enter into a TUA with the LTO. The TUA governs the commercial terms for terminal services that enable the import of LNG and the provision of ancillary services.

14. Term importers have to enter into a term TUA with the LTO before participating in the Annual Delivery Program ("ADP") process as stipulated in a later part of this paper.

15. All other terminal customers who are utilizing the terminal's spare capacity have to first register with the LTO by entering into a Master TUA[2]. The Master TUA is a standard form of TUA published by the LTO. Such standardization aims to put in place similar principles within each group of terminal customers procuring the same type of terminal services. It also aims to provide an expedient execution of TUAs for transactions which could occur at short notice. When entering into a Master TUA, potential terminal customers shall:

a. Where applicable[3], identify the vessels that it intends to use so that the vessels can satisfy a ship-shore compatibility test to ensure compatibility with terminal use;

b. Confirm that it is able to comply with all local regulations; and

c. Provide evidence to show that it is a creditworthy and reliable entity.

16. When customers who have entered into a Master TUA wish to confirm a particular transaction (e.g. the import of a spot cargo), they will have to execute a separate confirmation agreement, unique to each transaction, with the LTO ("TUA Confirmation Memorandum"). This confirmation memorandum, together with its corresponding Master TUA, will set out the contractual terms and conditions of that particular transaction.

17. A term importer could also concurrently be a spot importer/ancillary service customer. The term importer must enter into a separate Master TUA to utilize these services.

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[2] By nature of the services required, the Master TUA documents for S&S, S&R and vessel cool-down customers may vary. Hence, there may be a Master Spot Import TUA, Master S&S TUA, Master S&R TUA, and Master cool-down TUA, etc.

[3] This would apply only to spot importers and S&R customers who need to unload LNG at the terminal. It is also possible that spot LNG trades could happen at very short notice, such that it is not feasible to have the intended vessel identified in advance and subjected to a ship-shore compatibility test.

18. Any modification to the TAC will apply to future term and Master TUAs, as well as pre-existing Master TUAs. The LTO will ensure that the TUAs offered to new terminal customers contain the latest TAC revisions, thus ensuring consistent treatment across terminal customers.

ADP Scheduling Process for Term Importers

19. As throughput services for term LNG imports have the highest priority, available terminal capacity for other services can only be determined after the impact of term LNG imports on terminal capacity has been assessed. This requires the ADP for the term LNG imports to be determined prior to the start of each contract year.

20. Before the start of each contract year, the LTO will identify the largest term importer (the Lead Scheduler) in terms of the yearly maximum import quantity entitlement. The Lead Scheduler will nominate its preferred schedule of windows for LNG cargoes arriving for the contract year. Following the Lead Scheduler's nomination, the LTO will notify other term importers to nominate their preferred windows. They can select windows that are not chosen by the Lead Scheduler and their nominations will be done on a cyclical basis one slot at a time[4], starting from the term importer with the largest import quantity entitlement.

21. All nominations shall meet the following criteria (Nomination Criteria):

a. Individual importer's aggregate nominations should not exceed its quantity entitlement for the year.

b. Maximum LNG Inventory (MLI) should not be exceeded.

c. Cargo arrivals should be reasonably evenly spaced out throughout the year.

d. Duration between successive nominations must meet the minimum requirements as set out in the TUA.

e. The proposed timeline for the ADP Scheduling is summarized in Table 2 below.

Table 2: Timeline for ADP Scheduling

Time	Event
115 days before start of Contract Year	Identification of Lead Scheduler
90 days before start of Contract Year	Lead Scheduler nominates windows
Within the next 9 days	Other term importers nominate windows
80 days before start of Contract Year	Terminal Owner issues initial ADP

[4] Storage-and-Reload Customers can choose one window to unload cargoes and (at the same time) another window to reload the cargoes.

22. Term importers can request for changes to the ADP at any time. The LTO shall accommodate such changes if:

a. The requested slots have not been committed to another party;

b. The end outcome adheres to all the above-mentioned Nomination Criteria and;

c. The changes would not cause adverse impact to terminal operations.

Standardised Slots for Terminal Capacity

23. The concept of "Standardised Slots" forms the core operational mechanism that underpins open access of spot LNG imports and ancillary services in the LNG Terminal. These slots represent available terminal capacity that can be used by terminal customers other than the term importers. A standardised slot includes the following:

a. **Berthing slot** – 1 berthing slot for unloading or reloading of LNG.

b. **Storage capacity** – A maximum LNG storage capacity that decreases linearly over time (see Evacuation Period below).

c. **Evacuation Period** – Imported spot/ancillary LNG quantities have to be evacuated from the terminal within a certain period so that the LTO's ability to cater to other services and customers is not unduly affected.

d. **Regasification capacity** – A certain amount of firm regasification capacity that, if fully utilized over 24 hours daily for the entire Evacuation Period, will allow the terminal customer to linearly reduce stored LNG inventory such that it adheres to the decreasing storage right.

24. EMA proposes to calibrate the standardised slots as follows:

Table 3: Standardized Slots

Activity	Initial Calibration	Remarks
Berthing Window	48-hour window period for the vessel to arrive, load/unload and depart	This can be reduced over time as the LTO gains operational experience.
Storage Right	135,000m^3	This is sized to cater to the median size of LNG vessels in existence today[5]. This can be revised as the profile of LNG vessels changes over time.

5 Median size of existing fleets built prior to 2008 is between 125,000m^3 – 135,000m^3. While the median size of fleet built 2008 onwards are between 145,000m^3 – 170,000m^3 and that on order are about 155,000m^3 – 165,000m^3, standardized storage right of 135,000 m^3 is adopted to minimize unnecessary wastage of terminal facilities due to importers bringing in smaller fleets. On the contrary, importers bringing in bigger ships can opt to procure additional terminal services.

Activity	Initial Calibration	Remarks
Evacuation Period	30 days	A LNG inventory of 135,000m^3 evacuated over 30 days is equivalent to about 0.65 Mtpa of gas flow on an instantaneous basis. 30-day Evacuation Period is also practiced in all three French regasification terminals[6]. This can be reduced over time as Singapore's gas demand increases.
Regasification Capacity	180 m^3/hr [7]	This is the minimal regasification capacity needed to allow the LNG inventory of 135,000m^3 to be evacuated over 30 days. This will be revised as the base Storage Right and Evacuation Period of the Standardised slot changes.

25. Terminal customers could purchase additional services to complement the standardised slots (e.g. buy more regasification capacity and/or storage capacity). This allows LNG cargoes of different sizes to be handled, as well as provide more intra-day flexibility for offtake quantities.

26. For ancillary services, these standardised slots can also be varied by unbundling their component activities.

a. **Storage and Send-out** – No berthing slot is required. Storage capacity does not reduce linearly over time.

b. **Storage and Reload** – No regasification is required. Storage capacity does not reduce linearly over time. Additional berthing slots need to be booked in advance for break-bulk or re-export operations.

c. **Vessel cool-down** – No regasification is required. Berthing slot may be required depending on how LNG inventory is procured.

27. The concept of standardized slots is also used in the following European terminals: Zeebrugge (Belgium), Montoir (France), Fos Tonklin (France), Fos Cavaou (France), Revithoussa (Greece), Gate (the Netherlands), Sines (Portugal).

28. Please refer to **Annex B** for details on determining terminal's spare capacity for standardized slots.

6 The three regasification terminals in France are Montoir de Bretagne on the Atlantic Coast, Fos Tonkin and Fos Cavaou on the Mediterranean Coast.

7 Takes into consideration 5% heel required to remain on board and hence will not be unloaded. It is the common industrial practice to retain 5% of total cargo capacity as the heel.

Question:

5) Are the individual components of a standardized slot well-calibrated? Or should changes be made to these parameters?

Availability and Booking of Standardised Slots

29. Following the determination of the ADP, the LTO should, as soon as reasonably possible, determine the spare capacity in the terminal that can be used for standardised slots.

30. The LTO should create and operate a web portal that makes the availability of these slots transparent to industry players. The LTO-managed web portal will serve as a Secondary Capacity Market where potential terminal users can buy, sell and trade terminal capacity. Any sale, purchase or trading of terminal capacity must be conducted via the web portal only. The web portal will publish the terminal's total, available and used capacity (berthing, storage and regasification). For confidentiality reasons, identities of slot holders will not be revealed on the web portal.

31. The web portal would only allow terminal customers who have entered into the relevant TUAs or Master TUAs to book available slots.

Allocation of Slots – Capacity Allocation Mechanism

32. Potential spot importers and ancillary service customers can use the LTO's web portal to express their interest for available slots anytime after the ADP has been finalized. LTO will only confirm the allocation of a particular slot 3 months before its scheduled month of delivery.

a. If customers express their interest more than 3 months before the slot's scheduled month of delivery, the LTO would award the slot to one customer based on the priority order as set out in Table 1. In the event that there is more than one customer asking for the same slot and belonging to the same priority group, the slot will be awarded via a First-Come-First-Served ("FCFS") basis.

b. If customers express their interest less than 3 months before the slot's scheduled month of delivery and the slot is untaken, the LTO would then allocate the slot to one customer on a FCFS basis.

33. Customers who wish to book any slot must meet the following criteria:

a. Customer has entered into a TUA Confirmation Memorandum with the LTO;

b. For spot importers and S&R customers, they must have satisfied the ship-shore compatibility test.

34. Upon the successful booking of a slot, the terminal customer must pay a Reservation Fee[8], which acts as an upfront payment for the reservation of terminal capacity. The terminal customer will also pay a Usage Fee once the slot and associated services have been used. This tariff concept is currently in place for term LNG importers.

Question:

6) What are your views on the proposed capacity allocation mechanism?

Release and Re-booking of Unused Standardised Slots

35. All terminal customers should inform the LTO as soon as reasonably possible if they believe their booked terminal capacity will not be utilised. It is possible that capacity could be released under the following circumstances:

a. There may be cases where term LNG importers may release windows which were originally allocated to them through the ADP.

b. Terminal customers who had earlier booked standardised slots may also choose to release them if they are no longer needed.

36. Released capacity would be returned to the LTO and made available for re-booking via the web portal. The LTO would then update its web portal to reflect changes in slot availability.

37. Though secondary markets to onsell booked slots are adopted in some European terminals[9], EMA intends for the LTO to be the sole party that can sell terminal capacity. Terminal customers would not be allowed to on-sell capacity amongst each other on a bilateral basis. This is to prevent terminal customers from hoarding capacity and profiting from re-selling such capacity at higher prices. It also provides potential terminal customers with greater clarity as they only need to approach a single party for available slots.

38. To deter frivolous booking of standardised slots, spot importers and ancillary service customers who released their booked slots will only be refunded the Reservation Fee[10] if the released slot is subsequently sold to another party.

39. EMA will also study the possibility of implementing a mechanism to incentivise term LNG importers to release their allocated slots. This mechanism would enhance terminal efficiency and provide more potential slots for other terminal customers. One possible idea is to implement a contractual mechanism that allows term importers to receive a payment to

8 Reservation (or Usage) Fee = Reservation (or Usage) Charge (measured in SGD/mmbtu) x Quantity of LNG (measured in mmbtu)

9 For example, Belgium and France allow capacity holders to onsell their slots directly via bilateral agreements.

10 If a slot is successfully onsold to another party, the spot importer will be refunded the Reservation Fee equal to the lesser of (i) Reservation Fee it paid upfront; and (ii) Reservation Fee paid by the replacement importer taking up the slot.

be determined by EMA if they release booked slots in advance and these slots are subsequently on-sold successfully.

40. In the event that certain terminal customers consistently fail to utilise their slots without mitigating reasons, it may be necessary to raise the penalties to deter hoarding of terminal capacity. Possible measures for "repeat offenders" include:

a. Customer has to pay both Reservation and Usage Fees as a penalty;

b. Customer has to pay a higher Reservation Charge for future bookings;

Questions:

7) Is there any concern for the LTO to be the sole party that can sell capacity?

8) Are the proposed penalties appropriate to deter terminal customers from hoarding capacity? What other measures could be implemented?

Actual versus Scheduled LNG Quantities

41. There may be occasions whereby a cargo arrives earlier or later than planned. The LTO will endeavour to accommodate these schedule changes as long as the terminal operations are not compromised. Late cargo arrivals may consequently affect gas send-out for spot importers since they have no inventory in-tank.

42. In line with practices in overseas terminals, EMA proposes to implement a mechanism to keep the range of vessel sizes brought in by terminal customers in check so as to minimize operational/commercial problems for the LNG Terminal. In the event that customers bring in an LNG vessel (assumed to have also satisfied the ship-shore compatibility test) which is sized differently from the planned vessel, for example more than 10% deviation in volume, the LTO could:

a. Introduce a penalty on customers who brought in smaller vessels but demand the same evacuation period as earlier planned;

b. Shorten the evacuation period of smaller vessels accordingly; or

c. Turn away the vessel if acceptance of the different vessel would jeopardise terminal operations.

Question:

9) What are your views on the proposed measures to encourage terminal customers to unload actual LNG quantities that are similar to their scheduled quantities?

Failure to Evacuate

43. It is possible that certain terminal customers are unable to meet their evacuation obligations, thus taking up storage and regasification capacity. This is detrimental to the terminal's efficiency and will affect other terminal customers.

44. In such cases, these customers may request and pay for additional storage and regasification capacity from the LTO. The LTO will provide such capacity if it is reasonably able to do so[11]. Alternatively, customers could sell their LNG inventories to other terminal customers who have contracted services to handle these inventories.

45. The LTO could take the following actions against a customer who is unable to meet its evacuation obligation:

a. **Financial remedy** – A daily penalty fee will be levied beyond the evacuation period, until the inventory is fully depleted. The penalty fee for D_1 (i.e. the day immediately following the last day of the evacuation period (D_0),) is equal to 110% of the Reservation fee on the opening inventory balance on D_1. Thereafter, the penalty fee for every subsequent day will be 110% of the previous day's penalty fee, regardless of the inventory quantity.

b. **Physical remedies** – At any point after D_1, the LTO may also use the following remedies:

I. *Forced in-tank sale*: LTO will sell the remaining in-tank LNG to other terminal customers, likely at a discounted price. The net revenue will be returned to the customer, less LTO's cost of service.

II. *Forced Send-out:* LTO will regasify the remaining LNG and sell them to downstream gas users, likely at a discounted price. The net revenue will be returned to the customer, less LTO's cost of service.

III. *Flaring:* If it is necessary to evacuate the cargo (e.g. to make space for an incoming vessel to unload LNG), the LNG inventory could be flared as a last resort. There will be no compensation given to the customer.

46. The concept of applying financial remedies on terminal customers who fail to meet the evacuation clause is also practiced at various European terminals to discourage capacity hoarding behaviour.

Question:

10) Are the proposed financial and physical remedies sufficient to encourage proper planning from terminal customers to meet their evacuation obligations?

[11] LTO will have to consider terminal constraints and whether such extension will adversely affect terminal operations

Adjustment of LNG Specification

47. Imported LNG that is bound for domestic consumption[12] will have to comply with the Singapore gas specifications. It is hence necessary for the LTO to have the ability to treat non-compliant LNG imports for such purposes[13]. Spot and term importers must bear the blending costs if the LNG unloaded into the LNG terminal does not meet the Singapore Gas Specifications. The applicable tariff for this service will be regulated by EMA.

TAC as a governing document or as a multilateral contract

48. The TAC could be implemented as either (i) a multilateral contract between all the terminal customers and the LTO, or (ii) a governing document that determines the terms of new term TUAs and existing Master TUAs which terminal customers and the LTO are obligated to follow when entering into TUAs at any point in time.

49. Implementing the TUA as a multilateral contract between terminal customers would standardise the terms by which all terminal customers access the terminal. As the LNG industry changes over time, it is likely that regular updates to the TAC would be needed for the TAC to remain relevant under prevailing market conditions[14]. However, there is a risk that some proposed and necessary modifications to the TAC may not be implemented because existing terminal customers may claim that their ongoing rights to terminal capacity under pre-existing TUAs are unjustly affected, especially if the changes affect their term LNG imports into Singapore.

50. Hence, EMA proposes that the TAC takes the form of a governing document which applies only to future TUAs and existing Master TUAs. In this way, pre-existing term TUAs would not be affected by TAC changes when they are implemented. This would enable the TAC to be amended to reflect evolving market trends, and allow necessary changes to be made expeditiously.

51. Both approaches have been practiced in the gas industry today. For example, the current Gas Network Code ("GNC") represents a multilateral contract between parties. Any modification to the GNC would have to be approved by the Code Modification Panel before it is submitted to EMA for approval. The French LNG terminals also adopt a similar approach in their terminal access codes. In contrast, LNG terminals in Belgium, Italy and Spain adopt the governing document approach for their Terminal Access Codes.

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[12] For LNG cargoes which are not intended for domestic use, such as those serving S&R purposes, they are not obligated to comply with the Singapore gas specifications and hence, treatment of such LNG may not be necessary.

[13] There are 2 types of blending: 1) In-tank blending where the LTO mixes LNG of different specs to achieve a commingled LNG within the desired range of gas specifications. 2) Injecting Nitrogen (or LPG) to make the gas leaner (or richer). Currently, SLNG only has the ability to conduct in-tank blending.

[14] For example, an increase in Singapore gas demand could boost spot demand and the terminal would have to react by shortening the evacuation period so that more spot LNG can be imported over time. This would require a modification to the existing TAC.

Question:

11) Should the TAC be drafted as governing document or a multilateral contract?

SECTION 3: REQUEST FOR INDUSTRY FEEDBACK

1. EMA wishes to seek the industry's views on the principles of TAC described in Section 2 of this paper. EMA will consider the feedback and develop a draft Terminal Access Code for industry's comments at a subsequent consultation paper.

2. EMA invites comments and feedback to the consultation paper on Principles of the TAC. Please submit written feedback to EMA_RD_LNGD@ema.gov.sg by 16 August 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 Teo Lay Hui at 6376 7891, or Ms Irene Tan at 6376 7831 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 to the principles. Please contact EMA via EMA_RD_LNGD@ema.gov.sg if you wish to arrange a meeting with EMA's LNG Department.

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.

SECTION 4: SUMMARY LIST OF QUESTIONS

Section 2 of this paper has raised a number of questions which seek the views of the industry. Below is a summary list of questions for easy reference:

Services at the LNG terminal

1) Is it necessary to dedicate a fixed portion of terminal capacity for the import of spot cargoes and provision of ancillary services? Why is this so?

2) Do you agree with the proposed priority order for each service? Should there be a priority order for terminal customers other than the term importers?

3) Do you agree with the proposed definition of spot imports?

Determination of Terminal Tariff

4) Should spot and term throughput tariffs be equal, or should there be a premium/discount for either service? Please explain your reasons.

Standardised Slots for Terminal Capacity

5) Are the individual components of a standardized slot well-calibrated? Or should changes be made to these parameters

Allocation of Slots – Capacity Allocation Mechanism

6) What are your views on the proposed capacity allocation mechanism?

Release and Re-booking of Unused Standardised Slots

7) Is there any concern for the LTO to be the sole party that can sell capacity?

8) Are the proposed penalties sufficient to deter terminal customers from hoarding capacity? Are any of the proposed penalties too punitive? What other measures could be implemented?

Actual versus Scheduled LNG Quantities

9) What are your views on the proposed measures to encourage terminal customers to unload *a*ctual LNG quantities that are similar to their scheduled quantities?

Failure to Evacuate

10) Are the proposed financial and physical remedies sufficient to encourage proper planning from terminal customers to meet their evacuation obligations?

TAC as a governing document or as a multilateral contract

11) Should the TAC be drafted as governing document or a multilateral contract?

ANNEX A: SUMMARY OF THE DIFFERENCES BETWEEN TERM IMPORTERS AND OTHER TERMINAL CUSTOMERS

Activity	Term Importers	Other Terminal Customers
Number of importers	Up to a maximum of 4	Open access
Priority to terminal services	Top priority	Second priority
Contractual agreement with the LTO	Enter into a customized TUA with LTO	Enter into a Master TUA with the LTO to be registered as an eligible terminal customer, before the actual transcations are confirmed through executed Confirmation Memorandums
Capacity allocation	During ADP scheduling prior to the start of a year	FCFS once the available slots are published on LTO's web portal
Type of access to terminal's capacity	Ongoing right to terminal capacity and services, as specified in the customer's TUA.	Standardized slots (with possibility to unbundle the services) a) 48-hour berthing window b) 135,000 m^3 storage right c) 30-day Evacuation Period d) 180 m3/hr regasification capacity
Platform to buy/sell/trade terminal capacity	Other than the initial ADP schedulling, additional slots must be procured through the LTO managed web portal.	Through LTO-managed web portal
Terminal capacity charges	a) Reservation Fee: Invoiced in advance and payable before the actual utilization of booked slots. b) Usage Fee: Invoiced after the actual regasification of LNG.	a) Reservation Fee: Invoiced in advance and payable during the booking of standardized slots. Refundable only if booked slots are subsequently on-sold successfully. b) Usage Fee: Chargeable only after slots have been utilized.

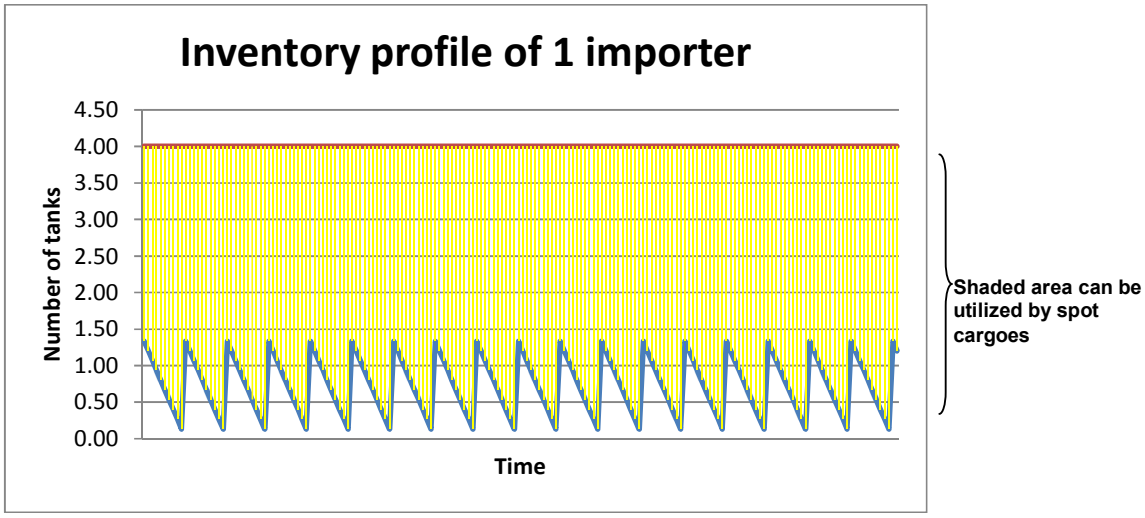
ANNEX B: DETERMINING TERMINAL'S SPARE CAPACITY

1. Storage (tank) capacity is the main limiting factor that determines the volume of imports that the LNG terminal can support.

2. With a reasonably spaced out cargo arrival schedule, the inventory profile of term importers essentially follow a saw-tooth diagram (see **Figure 1**). Tank capacity utilized by them could peak at the Maximum Inventory Limit (MLI)[15] with the arrival of each cargo.

3. Terminal customers who are not term importers could fill up the "gaps" between the maximum tank capacity operating at the terminal and term importers' cumulative MLI by bringing in cargoes via standardized slots.

Figure 1: Inventory profile of 1 importer



4. In Figure 1 above, the terminal is assumed to have 4 operating tanks and a single term LNG importer. As the number of term importers increase, less tank capacity will be available for spot/ancillary quantities. Generally, capacity for spot/ancillary quantities will increase with more tanks operating at the terminal and decrease with terminal customers bringing in vessels of varying sizes.

[15] We have assumed that the MLI of a term importer is equal to about 240,000 m^3.

GLOSSARY

ADP	Annual Delivery Program
B&L	Borrowing and Lending
BGSGM	BG Singapore Gas Marketing Pte Ltd
EMA	Energy Market Authority
FCFS	First-Come-First-Served
GSA	Gas Sales Agreement
LNG	Liquefied Natural Gas
LTO	LNG Terminal Operator
MLI	Maximum LNG Inventory
Mtpa	Million tonnes per annum
S&R	Storage & Reload
S&S	Storage & Send-out
SLNG	Singapore LNG Corporation Pte Ltd
TAC	Terminal Access Code
TUA	Terminal Use Agreement