

**MINUTES OF THE RULES CHANGE PANEL
9th PANEL MEETING
HELD ON WEDNESDAY, 29 OCTOBER 2003 AT 10.10AM
AT ENERGY MARKET CO. PTE LTD
9 RAFFLES PLACE #22-01
REPUBLIC PLAZA, SINGAPORE 048619**

Present:	Allan Dawson (Chairman) Yip Pak Ling Ben Lau Robin Langdale T P Manohar	Eu Pui Sun Lee Sin Chong Francis J. Gomez Dr. Daniel Cheng
Absent with Apologies:	Kok Shook Kwong	Tan Boon Leng
In Attendance:	Paul Poh, EMC Shashank Swan, EMC	Poa Tiong Siaw, EMC Teo Wee Guan, EMC

Action by

1.0 Notice of Meeting

The Chairman called the meeting to order at 10.10am. The Notice and Agenda of the meeting were taken as read.

2.0 Confirmation of Minutes of the 8th Rules Change Panel Meeting

The Minutes of the 8th Rules Change Panel Meeting held on Tuesday, 7 October 2003 was tabled and having been previously circulated was taken as read.

There being no amendments to the Minutes, the Rules Change Panel unanimously accepted and approved the Minutes.

3.0 Matters Arising from the 8th Rules Change Panel Meeting

Item 4.0 Publishing Outage Reports submitted to MSCP
(Paper No.: EMC/RCP/08/2003/76)

Mr. Paul Poh informed the Panel that EMC will provide the information policy document that sets out guidelines on information disclosure at the next RCP Meeting.

EMC

Item 7.0 Margin Call excluding an outlier in the computation of Estimated Net Exposure (Paper No.: EMC/RCP/07/2003/209)

EMC will provide the Panel with a study if it is feasible for EMC to determine the ENE by using the average 12-day quantity used in the current exposure and applying prices for 20 days at the next RCP Meeting.

EMC

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4.0 Paper No.: EMC/RCP/09/2003/214 – Allocating Reserve Cost to Load

EMC presented a rules modification proposal where PowerSeraya suggested that part of contingency reserve costs be charged to load instead of generators following the cessation of fast-start service. This proposal was made in the light of the PSO's decision not to renew fast start service contracts when the current ones expire on 31 December 2003.

The proposal argues that the increase in requirement for contingency reserve was due to the termination of fast start services. Since load had been paying for fast start services all along, it should be made to bear the cost of additional contingency reserve.

EMC felt that this was a design issue and revisited the original design principles in studying the proposal. On analysis, accepting this proposal (ie allocating part of contingency reserve cost to loads) would result in the following violations of design principles:

- a. allocation of reserve costs (violates the principle of allocating cost to the party that created the need for the cost)
- b. loads (consumers) are made to bear costs/risks that are beyond their control (violates the principle of allocating risk to the party best able to manage it)
- c. equipment owners have less incentive to ensure reliability of their equipment (violates the principle of economic efficiency)

EMC recommended that this proposal not be supported because overall efficiency of the market would be compromised.

The Panel **supported** EMC's recommendation **not to support** the proposed rule change and to make the necessary recommendation to the EMC Board for endorsement.

5.0 Paper No.: EMC/RCP/09/2003/215 – Removing the effect of line constraint violation penalties on Energy Settlement when load is not shed

This paper assesses EMC's proposal to remove the effect of line constraint violation penalties on energy settlement in the case where no physical load is shed while the MCE correspondingly flags an infeasible solution.. The paper further assesses the methods to be used for removing the effect of constraint violation penalties during settlement and presents the proposed rule modifications needed to perform price revision.

The Panel was informed that this proposed rule modification had been reviewed by the Technical Working Group on 10 October 2003.

EMC provided the Panel with a summary of the Pros and Cons for using CVP and against using CVP in settlement when load is not shed.

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Pros

Modeling imperfections

The use of violation penalties serves as a signal to the market participants of the value of the underlying constraints being violated. This allows players to take corrective action in time during forecast runs

Since consumer benefit was maintained at the cost of market efficiency and possible operational hazard, this needs to be built in the prices for settlement so that rents in lieu can be collected to offset certain costs incurred

Removing constraint violation penalty may appear to compromise the ex ante pricing philosophy because settlement prices would have to be re-calculated

Violation Penalties for Artificial Lines

Artificial lines are purely for modeling purposes. They help to simplify the network diagram (network status file) in pre-processing stage of MCE which improves the processing time for MCE

Cons

Modeling Imperfections

- a. It is a modeling problem and the constraint violation penalties send an infeasibility flag not economic signals
- b. There are no economic grounds that market participants should be penalized for modeling imperfections because the MCE can not find a feasible solution
- c. The net effects are distortionary

Violation Penalties for Artificial Lines

- a. These lines are a unique feature of Singapore's system and are purely for modeling purposes. The solver should only use violation penalties for these lines as a guide to obtain a solution and should have no influence in the settlement prices. This is because no physical constraint is violated in reality and hence has no basis to be able to charge any economic rent
- b. The intent of the market rules is that violation of constraints associated with artificial lines should not be able to set prices

The analysis above suggests that constraint violation penalty should be removed from calculation of MEP and USEP for energy settlement when load is not shed:

- *Where constraint violation penalty is invoked due to violation of artificial lines*
The main reason is that the intent of the market rules is not to allow violation of artificial lines to set prices.

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- *Where constraint violation penalty is due to modeling imperfections (i.e. in Mathematical model).* The main reason is that setting prices based on constraint violation penalty is likely to impose greater distortions than removing it from calculation of MEPs and USEP.
- This proposal does not compromise the ex ante pricing philosophy as it addresses a problem caused by modeling infeasibility, not energy shortfall. Where CVP penalty is associated with energy shortfall and load is shed, the effects of CVP on MEP and USEP are retained.

The TWG had met and deliberated on the methodology for removing constraint violation penalty when load is not shed.

The proposed methodology would mean that the PSO would be providing maximum loading of lines regarding the affected periods to EMC within 1 business days of the request from EMC. EMC will then use these revised line ratings to re-run the MCE. New prices will be confirmed using price revision process. Ex-ante pricing principle is maintained since this method only rectifies the *inputs used in price discovery* as is currently done under the rules.

EMC also proposed a fall back method. In this fall back method, the MCE will be run once more in an offline environment to establish prices and the MCE run would be with all the original inputs except that the "Line constraints" constraints' on *all lines* in the system would be turned off/removed. Effectively, this will give a congestion free network. This method is simple to understand and implement. Furthermore, as losses are maintained in the model, the result has some locational pricing effect.

The TWG supported and recommended that the Panel support the rule change modification.

The Panel **supported** EMC's recommendation and to make the necessary recommendation to the EMC Board for endorsement.

6.0 Paper No.: EMC/RCP/09/2003/216 – Provision of Reserve from Load Facility

This paper assesses the rule modification proposal by EMC to facilitate participation of load facility in the reserve market such that system security is not compromised (Chapter 2, Section 6.2) and the proposal is to streamline the transfer process for registered facilities. To allow reserve to be offered by load facilities, the EMC and the PSO would need to make system changes.

This paper also incorporates the rules changes relating to the market clearing engine to address PSO's specific system security requirements to reserve being provided by the load facilities which have been supported by the TWG at its meeting on 10 August 2003.

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The Panel was informed that *Interruptible load* (IL) is a load which can be voluntarily interrupted for a limited duration to enable power system to return to its normal operating state. By reducing the consumption of energy within a very short period of time such load helps to restore demand and supply imbalance due to a contingency event e.g. force outage of a generator which causes supply to be lower than demand. This helps to arrest the fall of system wide frequency to within an acceptable range.

In NEMS, an interruptible load (IL) will be allowed to offer in all (or any) of the three reserve market. Providers of IL therefore compete with generators to provide reserve. Such IL may be provided by a load facility (IL facility) of a market participant (DMP) or, where the IL facility is not owned by a market participant, through a retailer who is a market participant. In the latter case where IL is provided through a retailer, the EMC will have no direct contractual relationship with the owner of the IL facility being a non-market participant, and thus, as between the EMC and the retailer, such retailer will be treated as contracting with the EMC as principal (and not as agent of the owner of the IL facility) and be responsible to the EMC for compliance with the market rules in respect of that IL facility and the provision of IL.

All IL facilities must be registered by the DMP or retailer with the EMC as 'load registered facility (LRF)' of the DMP or retailer before that IL facility may offer or provide IL in the reserve market. Such DMP or a retailer (and not the LRF) will be paid only for reserve that is scheduled to provide the IL in accordance with the market rules.

Benefits of IL to the market

- There is net increase to the operating reserves available. This improves system security.
- Increased competition in the reserve market is expected to lower reserve prices.
- In the long run, IL helps to reduce investment in generation and transmission needed to cater for peak demands.

The Panel was briefed on PSO's requirement for IL that was supported by the TWG.

PSO requires that once disconnected, the LRFs cannot reconnect back to the grid without PSO's prior approval as this may jeopardize recovery of the system to normal operating state. The PSO will need to control the quantity and location of IL that is shed, as the loss of too much load in a single area may cause voltage disturbance.

The Panel requested the PSO to provide the number of dips below 49.4Hz so that the retailers will have some knowledge as to the number of times the IL may be activated.

To deal with the voltage stability issues which are more prominent on a regional basis, PSO requires dividing Singapore into various zones to be able to monitor this properly. This is because shedding of too much load in a particular region compared to other region might create voltage stability problems in the region. Thus a MW limit for each zone needs to be set. This will be specified in the system operation manual. The manual will specify MW limit per class of reserve for each zone.

PSO/EMC

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The requirement is to limit the amount of IL quantum to be cleared island wide as a percentage of reserve requirements for each reserve class. This means that for primary reserve, IL quantum will be limited to 10% of the total primary reserve requirement. Similarly, the limit for secondary and contingency reserve is 20% and 30% respectively.

The Panel felt that limits on the amount of IL that can be provided at each zones/sectors could constrain demand for IL participation in a zone. They asked about the criteria use by the PSO to determine the limit and how much flexibility there is to increase the limit if the demand for IL is large in a zone. EMC was requested to obtain this information from the PSO.

EMC/PSO

From the design of these two limits one can see that system wide, IL limit will change from period to period while zonal limits will be constant. This means that in some periods, total island wide reserve requirement from IL could be more (or less) than the sum of IL reserve limits from each zone. This is because different criterion was used for setting these limits. However, for scheduling purpose, the island wide limit will ultimately hold. The PSO will be reviewing these limits at least annually.

The Panel was informed that accordingly there will be some modifications to the MCE formulations.

The Panel suggested that future modifications to the interruptible load structure should be done in consultation with the IL providers and retailers and a suitable lead time be given to them before implementation.

The Panel was informed that the structure that was being put in place for Interruptible Load meets with the technical requirements for the PSO and will allow IL from 1 January 2004 to submit registration of load facilities to have access to the reserve market, and this is in line with EMA's policy objectives.

The Panel **supported** EMC's recommendation and to make the necessary recommendation to the EMC Board for endorsement.

7.0 Paper No.: EMC/RCP/09/2003/218 – Change of Bank Account Details

EMC presented a rule modification proposal on the change of bank account details where market participant may change its bank accounts details on the condition that EMC is notified in writing at least 20 business days instead of 60 business days before the change takes effect (Chapter 7 Section 5.16.12).

The Panel noted the contents of the paper.

The Panel **supported** EMC's recommendation and to make the necessary recommendation to the EMC Board for endorsement.

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8.0 Paper No.: EMC/RCP/09/2003/219 – Market Manuals for Registration of Load Facility and Transfer of Facility

EMC presented a paper that is intended to be a guide to the proposed market manuals for facilitating load facility registration and registration of load facilities.

The Panel was informed that Market Manuals are created and adopted by EMC that contain requirements to be followed, met or performed by one or more of the PSO, the EMC, MPs and MSSL *in support* of the obligations contained in the market rules relating to the *operation of* the wholesale electricity markets.

The new market manuals have been created for the purpose of registration of load facility and transfer of load registered facilities and are called

- Application form for Load Facility Registration.
- Request for Transfer of Load Registered Facility.

The Application form for Load Facility Registration - Any load facility will first need to register with the EMC before being allowed to participate in the reserve markets and the form has been developed based on obligations under Chapter 2, Section 5.1 and 5.2 of the market rules.

The Request for Transfer of Load Registered Facility.. This form is developed specifically for transfer of load registered facility and is developed based on obligations under Chapter 2, Section 6.2 and Section 5.2 of the market rules.

The Panel **supported** EMC's recommendation and to make the necessary recommendation to the EMC Board for endorsement.

9.0 Paper No.: EMC/RCP/09/2003/220 – Modifications to Market Operations Manual – Standing Offers, Offer Variations and Standing Data

EMC presented a paper on market manual modifications to incorporate changes in the EMC IT system and business processes due to the upcoming introduction of reserve offers from load registered facilities. EMC is also developing a new web-based offer mechanism "EasyOffer" which is compatible with EMC's NEM system that market participants may use to create and submit an offer into the market clearing engine. This will provide an option to market participants that will be cheaper to install than PowerBid and will have added functionality. "

The Panel **supported** EMC's recommendation and to make the necessary recommendation to the EMC Board for endorsement.

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10.0 Paper No.: EMC/RCP/09/2003/222 – Modifications to Market Operations Manual – Settlement – Deadline for Submission of vesting Contract Data

EMC presented a paper on a rule change modification where the MSSL had proposed modifications to Sections 3.1 and 3.2 of the Market Operations Manual (Settlement) that will allow the MSSL to submit vesting contract prices and quantities to the EMC before 5pm on the *fifth* business day after the dispatch day i.e. D+5 business days.

The MSSL had also requested that the submission deadline for vesting contract data to the EMC be further extended to 5pm on D+9 business days only in the case of a “Force Majeure Adjustment Event” as set out in the vesting contract.

The purpose of the MSSL’s request of allowing the MSSL to submit vesting contract data before 5pm on D+5 business days is to align the vesting contract data delivery deadline with that of the metering data.

In the case of the “Force Majeure Adjustment Event” (FMAE), the deadline for the submission of vesting contract data to the EMC can be extended to before 5pm on D+9 business days only in the event of a FMAE defined in the vesting contract. The FMAE referred to here is only specific to the vesting contract between MSSL and the relevant Gencos, and should not be seen as equivalent to a force majeure event specified in the market rules. When a FMAE occurs, under the vesting contract, the Gencos are required to furnish full particulars of an FMAE to the Authority and MSSL. The extension in the deadline is to allow for contingency when the Gencos are unable to furnish all relevant information on time for MSSL to do a re-calculation of vesting contract data by D+5 business days.

The Panel **supported** EMC’s recommendation and to make the necessary recommendation to the EMC Board for endorsement.

The Panel was informed that EMC will publish vesting contract reference prices (MSSL) by 1st January 2004. EMC will provide an interface document on the file format and support schedule to market participants.

EMC

11.0 Paper No: EMC/RCP/09/2003/223 – Modifications to Market Operations Manual – Settlement – Amendment to Flowchart of Fund Transfer

EMC presented a modification proposal to amend the fund transfer flowchart in Section 9.3 of the Market Operations Manual – Settlement.

The modifications make the cut-off time for payments to and from Market Participants consistent with those set out in the Market Rules.

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Action by

Two types of changes are made:

Terminology

“Citibank” is changed to “The clearing bank” to allow for future applicability if a different bank or financial institution is engaged. A definition of “clearing bank” is also provided.

“MP payment date” is changed to “market participant payment date”. The latter is a term defined in the Market Rules.

Timing

The current flowchart provided that EMC shall instruct Citibank (the clearing bank) by D+10 days 5.00pm to carry out transactions on the relevant market participant or EMC payment date. This deadline is not provided in the Market Rules. The revision to “by D+11 business days” provides reasonable time and operational flexibility for EMC to notify the clearing bank. Market participant and EMC payment dates are D+20 and D+21 days (subject to business day convention) respectively.

Hence, by instructing the bank by D+11 business days EMC provides adequate notice to the bank.

The flowchart also stated 4.00 pm as the deadline for payment dates. This is not consistent with the Market Rules. The Market Rules require MP and EMC payments to be made by “close of banking business”, which is defined as 3.00 pm, on the relevant payment date. Hence, “4.00 pm” is changed to “close of banking business” for compliance with the market rules.

The Panel **supported** EMC’s recommendation and to make the necessary recommendation to the EMC Board for endorsement.

12.0 Fast Start Generation (Paper No.: EMC/RCP/09/2003/02)

EMC presented a paper that highlighted the issues that need to be addressed in relation to fast start generation. Currently, fast start generation is not captured in the MCE. Some market participants are concerned that consumers continue to pay high energy prices in instances where fast start service, which had already been paid for earlier by consumers, has been called upon by the PSO to restore depleted energy/reserve in the system.

To follow up on the concern raised by MPs, there is a need to first resolve the following issues: whether fast start generation should be captured in the MCE, how should fast start generation be captured, who should be input fast start offers in the MCE, what are the basis and procedures for a re-run when there is delay or error in data submission and lastly, how to determine compensation / penalty arising from the re-run.

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Given the intricacy of the matter, it is unlikely a resolution can be reached quickly among the MPs with regard to these issues. In addition, any market rule modifications proposed for fast start at this point will only be required and stay effective for only about one month; given that fast start service will lapse on 31 December 2003.

EMC recommends that no changes be made to the market rules.

The Panel **noted** EMC's recommendation.

13.0 Rule Change Work Plan (Paper No. EMC/RCP/09/2003/01)

At the 5th September 2003 Panel meeting, the EMC tabled an initial draft work plan for the RCP for the next 12-24 months and recommended that consultations with key stakeholders be conducted before finalizing the work plan.

Over the 2-week period ending 10 October, EMC conducted 10 consultation meetings with all market participants, SP Services, PSO, and Power Grid. EMC received written comments from EMA.

This revised draft work plan now include 19 issues, comprising the 16 issues outlined in the original draft work plan and the 3 additional issues raised by stakeholders during the consultations.

The additional issues are

- ❑ Allocation of reserve cost: Under the rules, the allocation of reserve cost to generators is based on the metered quantity. It is possible that the use of metered quantity may push a genset to be the largest unit for a given dispatch period, while the quantity specified in the dispatch instruction for that dispatch period is not the largest in a situation where a genset is required to be ramp-up by PSO. As a result, this genset's share of reserve cost may increase considerably. This was felt to be not equitable.
- ❑ Accuracy of nodal load forecast: For any ex ante market, accuracy in nodal load forecast is crucial to its price discovery process.
- ❑ Definitions of co-generation and embedded generation need to be clarified in the market rules to provide certainty.

Four key themes/messages have emerged from the consultations:

1. Strong support for evolution to enhance market efficiency; however, focusing on consolidation in the short run.
2. The key factor for determining priority for market evolution issues should be the financial impact on market participants.
3. Implementation should be cost effective and of high

professional standards.

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4. Greater transparency in day-to-day grid operation and long-term transmission investment and planning.

EMC drew the Panel's attention to the prioritized work plan for the next 12-24 month period that has been arrived at based on ranking by the stakeholders consulted

The Chairman informed that there are a number of consumers of electricity that have their own co-generation outside of the market structure as they are exempted from participation. These consumers' interaction with the market is confusing. Given this he felt that a higher priority be placed on the issue of co-generators and embedded generators.

The work plan timetable was revised as follows to give higher priority to the issue of co-generation and embedded generation as follows.

Expected completion date	Activity
Within 6 months	Market re-settlement
	Removal of the effect of constraint violation penalty on settlement prices when load is not shed
	Implementation of an Interruptible load scheme (EMA)
Within 7 – 15 months	Priority-rights auction mechanism (EMA)
	Clarifying definitions for co-gen and embedded generation (new item)
	Payment to a reserve provider or a regulation provider that trips
	Short term schedule
	Compensation regime
	Regulation anomaly – generators “trapped” at Regulation Minimum and being constrained on for energy generation and being paid at market clearing price below its offer price
	The Real Time Pricing Schedule no longer reflects energy shortfall after EMC adjusting nodal load forecasts following a PSO energy shortfall forecast
	Advisory regime
	Re-run to determine reserve and regulation quantities
	Transmission planning and augmentation
	Analysis of accuracy in nodal load forecast (new item)
Allocation of reserve cost (new item)	
Within 16-24 months	Whether default should be charged to retailers
	Review of RCP structure
	Rulebook review

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Mr. Yip informed the Panel that EMA has not made any distinction between the co-generators and normal generators as far as the market is concerned. .

With the Panel's agreement, EMC will continue to monitor the progress of the agreed work plan.

14.0 Date of Next Panel Meeting

The next Panel meeting is scheduled to be held on 3^d December 2003 at 10.00am at the EMC Board Room.

There being no other matters, the meeting ended at 12.25pm with a vote of thanks to the Chair.

ALLAN DAWSON
Chairman

Minutes taken by:
Eunice Koh
Market Panel Administrator