PUBLIC VERSION

EMC's NEMS Budget for the Financial Year Ending 30 June 2019

CONTENTS

BUDGET FOR FY2018/19

1. INTRODUCTION

Under the new economic regulation framework for the period 1 April 2018 to 30 June 2023, EMC is allowed to recover the cost of operating and administering the Singapore Wholesale Electricity Market (SWEM) through its allowed revenue. The allowed revenue comprises 2 components - fixed and variable fees. This is to ensure a more equitable cost allocation among all market participants, including non-trading market participants.

Faced with a 73% increase in the number of market participants from 33 at end-2013 to 57 as at end-2017, the increasing complexity of EMC's market systems and operations, and growing cyber threats, EMC has to invest in the necessary manpower and technology to enhance its operational efficiency and systems resilience, and retain core skills and knowledge within the organisation. EMC also expects more market participants to come on board as retailers with the roll out of the Open Electricity Market to the rest of Singapore in 2H2018. The budget caters for the resources required to meet these future challenges.

EMC will continue to focus on the following key goals:

1.1 To remain financially resilient, seeking opportunities to grow non-NEMS revenues and manage expenses to sustain a satisfactory financial return to its shareholder;

1.2 To continue to provide its customers a satisfactory level of service as the SWEM market operator and to play a proactive role in driving market development. Other than continuing to provide reliable and cost effective systems and services, EMC will also continue to provide a consultative rules change process and a credible surveillance and compliance governance structure; and

1.3 To continue to invest in staff development and engagement, and manage its key personnel dependency risk.

2. NEMS FORECAST AND BUDGET ASSUMPTIONS

2.1 Revenue

Under the revenue regulatory regime for the 5 years from 1 April 2018 to 30 June 2023, EMC is allowed to charge fixed and variable fees.

With effect from 1 July 2018, EMC is allowed to charge the following categories of fixed fees:

a) Annual market participant fee of $10,000 per market participant

b) One-off market participant registration fee of $5,000 per registration

c) RSA hardware token fee (from 6th token onwards per MP) of $350 per token

The variable fees, which comprise the admin fees, will be calculated as follows:

$$\frac{\text{EMC's Allowed Revenue – Projected Revenue from Fixed Fees}}{\text{Forecast Traded Volume}}$$

The price cap for the period covered in this paper is as follows:

Price Cap (Cents/MWh)	Forecast FY2017/18	Budget FY2018/19
1 July to 31 March	24.50	-
1 April to 30 June	30.16	-
1 July to 30 June	-	30.16

EMC's projected volume for FY2018/19 is based on EMA's projected volume forecast as follows:

Year	Forecast FY2017/18	Budget FY2018/19
Regulator's Forecast (GWh)	106,690	96,319
EMC Projections	93,853	96,319
Gap	(12,837)	-

Any excess or shortfall in actual compared to forecast traded volume will be returned to or recovered from the market in the subsequent financial year via exogenous adjustments.

In addition, a yearly adjustment is made to the price cap for exogenous costs, adjustments under the opex variance scheme and any deviation between the projected and actual revenue collected from fixed fees.

2.2 Manpower Costs

The approved permanent staff headcount of 69 includes 3 additional hires to support IT and 2 to support market operations. In the FY18/19 budget, the cost of 60 headcount was factored instead of the full approved headcount as there are positions currently unfilled. Should the remaining 9 positions be filled during the year, EMC will claim the cost exogenously. Please refer to Section 3.2.2.3 for further details.

To recognise manpower resources utilised towards the development of capital projects, the practice of capitalising manpower costs will continue. Any additional headcount required to meet new operational requirements arising from EMA-directed rule changes will need to be reviewed and approved by EMA.

In line with Condition 3 of the Electricity Licence for Market Company, EMC shall maintain separate accounts for its authorised business. NEMS manpower supporting allowed activities are charged out from the NEMS accounts.

2.3 Depreciation & Amortisation

All fixed assets are depreciated over three years except for IT servers which are depreciated over five years. Leasehold renovations are depreciated over the life of the lease.

2.4 Other Operating Expenses

Other operating costs (i.e. excluding manpower, depreciation, IT and office rental costs) are generally assumed to increase at an average 2% year-on-year based on the MAS Core Inflation rate.

2.5 Taxes

Capital allowances are assumed to be fully claimed on all IT capital expenditure in the year of its incurrence and over three years for office renovation and equipment.

2.6 Business Development

Business development costs will be accounted for separately from NEMS activities and do not form part of the NEMS revenue determination.

2.7 Capital Expenditure

EMC presented its proposed IT roadmap for the 5 years from 1 April 2018 to 30 June 2023 to EMA and the Rules Change Panel's (RCP) comments were sought in respect of the IT roadmap in August 2017. The capital expenditure is based on projects approved in this regulatory period. A breakdown of the capital expenditure is provided in section 4.

2.8 Gearing & Share Capital

It is assumed that no loans will be undertaken, nor will there be any change in share capital.

2.9 Dividend

Actual dividend declarations each year will be subject to the directors' consideration of reasonableness and prudence.

3. NEMS BUDGET FOR FY2018/19

3.1 Summary

EMC's forecasted net operating profit for NEMS for FY2017/18 of $3.0M will be better than budgeted by $1.5M due to higher NEMS fees, lower operating expenses as a result of lower manpower costs, depreciation, IT expenses, utilities and panel costs, offset by lower depreciation adjustment and exogenous cost.

Higher revenue and operating expenses contributed to the $1.0M increase in budgeted net operating profit for FY2018/19.

3.2 NEMS Revenue and Expenses

Description	FY18/19	FY17/18	
	Budget S$'000	Forecast S$'000	Budget S$'000
NEMS Fees[1]	29,535	24,337	23,904
Exogenous Item	-	576	637
Depreciation Adjustment	-	(261)	207
Market Data Subscription	290	286	338
Total NEMS revenue	**29,825**	**24,938**	**25,086**
Manpower	9,793	8,563	9,029
Other Operating expenses	16,035	13,406	14,599
Total NEMS Operating Expenses	**25,828**	**21,969**	**23,628**
NEMS Operating Profit (before interest and tax)	**3,997**	**2,969**	**1,458**

Note 1 : FY18/19 NEMS fees comprise annual market participant fees and admin fees.

3.2.1 Forecast FY2017/18 vs. Budget FY2017/18

3.2.1.1 Revenue

FY2017/18 revenue forecast is lower than FY2017/18 budget by $148K due to lower depreciation adjustments and exogenous costs from the Demand Response project ($528K) and lower market data subscription fees ($52K). This was offset by higher NEMS fees ($433K) arising from a higher fee rate compared to budget.

The admin fees for the last 3 months of FY2017/18 was adjusted to reflect the fee rate of 30.16 cents/MWh. This was higher than the price cap assumed in the budget of 26.33 cents/MWh.

3.2.1.2 Salaries & Related Costs

FY2017/18 forecast is $466K below FY2017/18 budget mainly due to a gap between attrition and hiring replacements, and higher costs charged to non-NEMS projects. There is an allocation for staff total cash compensation in line with HR industry salary benchmark recommendation.

3.2.1.3 Other Operating Expenses

FY2017/18 forecast is lower than FY2017/18 budget by $1,193K mainly due to the following:

- Lower depreciation by $556K arising from delays in implementation of planned projects such as MCE enhancements and lower asset costs capitalised as compared to FY2016/17.
- Lower IT services cost by $231K mainly due lower spending than budgeted.
- Lower office maintenance, rental and utilities by $127K mainly due to utilities budgeted for Labrador site which did not materialise.
- Lower panel fees by $124K mainly due to fewer and shorter meetings and unanticipated absence of panel members at scheduled meetings.

3.2.2 Budget FY2018/19 vs Forecast FY2017/18

FY2018/19 NEMS profit before interest and tax is expected to be higher than FY2017/18 forecast by $1,028K mainly due to the higher revenue and expenses.

3.2.2.1 Revenue

Under the new regime, EMC’s allowed revenue will increase in tandem with increased expenses due to additional resources required to serve an increased number of market participants as well as enhancements to NEMS IT infrastructure that is necessary to meet audit and cyber security requirements.

3.2.2.2 Detailed Expenses

Description	FY18/19 Budget S$'000	FY17/18 Forecast S$'000	Variance S$'000	Variance %	FY17/18 Budget S$'000
Salaries and employment benefits	9,793	8,563	1,229	14.4%	9,029
Depreciation of plant and equipment	5,695	4,489	1,206	26.9%	5,045
Market Operator licence fee	3,108	2,878	231	8.0%	2,878
IT service costs	3,986	2,841	1,145	40.3%	3,072
Office Maintenance/ Rental & Utilities	1,670	1,603	67	4.2%	1,730
Legal and professional fees	282	251	31	12.5%	283
Directors' fees	186	355	(169)	(47.5%)	355
Directors' expenses	-	4	(4)	(100.0%)	62
Audit fees	301	328	(27)	(8.3%)	295
Communications & PR	142	193	(51)	(26.5%)	209
Insurance expenses	97	93	4	4.8%	96
Panel fees and expenses	264	175	89	51.0%	299
Other operating expenses	303	196	108	55.1%	276
Total NEMS expenses	**25,828**	**21,969**	**3,859**	**17.6%**	**23,628**

3.2.2.3 Manpower Costs

The approved headcount is 69, an increase of 3 hires to support IT and 2 to support market operations. However, the budgeted headcount is 60. Should EMC fill the remaining 9 positions, we will claim the costs exogenously.

The breakdown by departments is as follows:

Headcount	FY18/19 Approved	FY18/19 Budget	FY17/18 Forecast	FY17/18 Budget
CEO Office	1	2	2	1
Corporate Services	11	10	10	11
Market Administration	7	6	7	7
Information Technology	22	18	19	19
Market Operations	18	14	16	16
Market Assessment Unit	6	6	6	6
Communications	2	2	2	2
Human Resources	2	2	2	2
Total	69	60	64	64

3.2.2.4 Manpower costs are broken down as follows:

Manpower Costs	FY18/19 Budget S$'000	FY17/18 Forecast S$'000	Variance (FY18/19 Budget vs FY17/18 Forecast)		FY17/18 Budget S$'000	Variance (FY17/18 Forecast vs FY17/18 Budget)	
			S$'000	%		S$'000	%
Salaries	6,552	5,844	708	12.1%	6,473	(630)	(9.7%)
13th Month	480	443	37	8.4%	473	(30)	(6.4%)
Performance Bonus	2,086	1,805	281	15.6%	1,410	395	28.0%
Central Provident Fund	906	849	58	6.8%	863	(14)	(1.6%)
Training	200	200	-	-	200	-	-
Staff welfare	139	132	6	4.8%	132	-	-
Other manpower costs	245	208	37	17.6%	234	(25)	(10.9%)
Manpower Cost Capitalised/charge out	(815)	(918)	102	(11.2%)	(757)	(161)	21.3%
Total Manpower Costs	9,793	8,563	1,229	14.4%	9,029	(466)	(5.2%)

Salaries

The variance of $708K (or 12.1%) between the FY2018/19 budget against the FY2017/18 forecast is mainly due to lower salary costs arising from attrition and time taken to fill vacant roles, including a senior positon which was not filled for a number of months. An overall payroll increase of 6.9% is budgeted for FY2018/19, taking into account promotions and adjustments arising from a salary benchmarking exercise concluded in November 17.

Towards July 2018, when more up-to-date market figures are available, Management will propose an updated 2018 salary increment percentage for the R&A Committee to consider for approval.

Performance Bonus

The performance bonus policy is based on both company and individual staff performance. As it is too early to determine the actual payout for FY2018/19, the performance bonus for the year is budgeted at $2.1 million, which is higher than the FY2017/18 forecast amount of $1.8 million in line with higher salary costs.

Other Manpower Costs

Other manpower costs comprise temporary staff costs, insurance, market standby scheme, business transportation, provision for unutilised leave and SDF contributions. Budgeted costs for FY2018/19 are higher than the FY2017/18 forecast due to higher medical insurance and higher unutilised leave provision, which is in line with higher salary costs.

Manpower Cost Capitalisation/Charge Out

Budgeted costs for FY2018/19 are lower than the FY2017/18 forecast due to lower allocation of resources to non-NEMS projects in FY2018/19.

3.2.2.5 Depreciation & Amortisation

Depreciation in FY2018/19 increased over the FY2017/18 forecast by $1,206K mainly due to the full year depreciation impact of capital assets purchased in the prior year.

3.2.2.6 IT Service Costs

The total budget of IT Service Costs comprises the following:

	FY18/19 Budget $'000	FY17/18 Forecast $'000	Value to EMC and Industry
Internal IT Opex			
Internal Corporate System & Applications Maintenance	144	105	Support and maintain the corporate IT systems & applications
Subtotal	**144**	**105**	
NEMS Infrastructure Opex			
Data Backup Services	8	6	Maintain timely backup of NEMS and corporate data to be stored offsite for purpose of data recovery base on business' needs
NEMS System Maintenance	917	692	Support and maintain the 24x7 critical NEMS systems
Managed Security Services Subscription	1051	714	Subscribe to Managed Security Services to provide 24x7 IT security protection and 24x7 proactive security monitoring, alerts and remediation against IT security threats, for both NEMS and corporate systems
Monitoring Systems Maintenance	35	23	Maintain 24x7 real time monitoring systems for NEMS and corporate services, and proactively provide alerts to the IT and MO teams for prompt resumption of normal business operations
Teleco Lease Lines - Subscription and Maintenance	222	216	Subscribe and maintain telecommunications lease lines for connectivity with the external network and Internet
Data Centres Facilities Maintenance	403	262	Maintain secured and highly available data centres to house the NEMS and corporate systems
Subtotal	**2,635**	**1,913**	

	FY18/19 Budget $'000	FY17/18 Forecast $'000	Value to EMC and Industry
NEMS MCE/Software / Application Opex			
NEMS MCE Support and Maintenance	-	140	Support and maintenance of MCE
NEMS Software/ Application maintenance	1,207	683	Support and maintenance on tools and 3rd party software (e.g. Oracle Service Bus, Weblogic, Business Process Management, Business Rule Engine, Portal, Single Sign-On, Oracle Database, SAP Business Object, Ilog CPLEX etc.) and for the Demand Response, Automatic Penalty System.
Subtotal	**1,207**	**823**	
Total	**3,986**	**2,841**	

The overall FY2018/19 IT Service cost budget is higher than the FY2017/18 forecast by $1,145K. The key factors contributing to the variance are:

- Increase in NEMS Systems maintenance of $722K (38%). The increase was attributed to higher managed security service subscription costs, implementation of data leakage protection and higher maintenance cost incurred for the Server Hardware and Application Refresh project (SHaRP).

- Increase in NEMS Software/Application by $384K (46%) was due to additional middleware maintenance costs and additional middleware and database licences required for SHaRP. This was partially offset by a decrease in MCE support costs by $140K as MCE will be supported by internal resources instead of external consultants.

3.2.2.7 Office Maintenance/ Rental & Utilities

The budget for FY2018/19 is $67K higher than the FY2017/18 forecast mainly due to higher utility costs budgeted.

3.2.2.8 Legal & Professional Fees

Legal and professional fees in FY2018/19 are expected to be higher than FY2017/18 forecast by $31K mainly due to higher legal fees for rule change related matters, offset by lower consultant fees.

3.2.2.9 Directors' Fees & Expenses

With effect from 1 October 2018, EMC's board will comprise 2 executive directors. Directors' fees and expenses are expected to be lower than FY2017/18 forecast by $173K.

3.2.2.10 Audit Fees

FY2017/18 forecast audit fees included FY2016/17 and FY2017/18 audit fees for the audit of segregation of accounts as required by Condition 3 of the Electricity Licence. This resulted in a higher audit fees in the FY2017/18 forecast compared to the FY2018/19 budget.

3.2.2.11 Communications & Public Relations (PR)

The Communications & PR budget for FY2018/19 is lower than FY2017/18 forecast by $51K. This is mainly because of the costs of organising the Singapore Electricity Roundtable in 2017, which is held bi-annually and will not therefore be held in FY2018/19.

EMA did not support the budget for the annual industry golf event as it was deem not relevant to EMC's regulated business of operating the SWEM. With the industry's support, EMC intends to continue holding this event, which serves as a platform for market participants to network.

3.2.2.12 Insurance Expenses

EMC continues to maintain insurance cover in areas including professional indemnity, public liability and directors' and officers' liability at similar rates to FY2017/18.

3.2.2.13 Panel Fees & Expenses

The budgeted Panel Fees & Expenses for MSCP for FY2018/19 is higher than the FY2017/18 forecast by $89K as the budget is based on an estimated number of hours that the panel may potentially incur each year. The FY2017/18 forecast reflects a lower-than-budgeted number of hours actually incurred in that year and unanticipated absence of panel members at scheduled meetings.

In the new regulatory period, EMC's budget is based on 10 meetings per year. In the event the actual number of MSCP meetings deviates from the budget, EMC will recover any shortfall from, or return any excess to the market.

3.2.2.14 Other operating expenses

Other operating expenses for FY2018/19 are higher than the FY2017/18 forecast partly due to higher Business Continuity Plan expenses and lower cost allocated to non-NEMS projects.

4. NEMS CAPITAL EXPENDITURE

EMC's capital expenditure plans are as follows:

	Note	FY 18/19 Budget	FY 17/18 Forecast
		$'000	$'000
Furniture Fittings & Equipment/Office Renovation	4.1	30	20
Internal/NEMS Software Application & Infrastructure	4.2	7,108	6,776
Provision for RCP Requests	4.3	-	249
Total		**7,138**	**7,045**

Appendix 1

EMC's Obligations with Respect to Rules and Market Licence in Preparation of Budgets

Requirements	**Action to be taken by**
Market Rules Chapter 2 sections 10.1.1.1 and 10.1.1.2 No less than 100 days prior to the beginning of each fiscal year EMC is : To submit proposed expenditure and revenue requirements and a schedule of fees for the following fiscal year to the RCP for review; and Publish notice of its proposed expenditure and revenue and schedule of fees	22 March 2018
Market Rules Chapter 2 section 10.1.4 The RCP shall submit a written report to the EMC Board indicating the views of the RCP and a summary of any material submissions from interested persons pursuant to Chapter 2 section 10.1.1.2 Market Rules Chapter 2 Section 10.1.5 The RCP report shall be submitted to the EMC Board no later than 75 days before the beginning of the new fiscal year	16 April 2018
Market Rules Chapter 2 section 11.1.1 EMC shall no less than 60 days prior to the beginning of the fiscal year to submit to the EMA for the approval its proposed expenditure and revenue requirements and either: a schedule of fees or a statement of fee methodology	30 April 2018
Market Licence Condition 18 "The Licensee shall, no less than 60 days before the beginning of the Licensee's fiscal year, submit to the Authority the Licensees proposed expenditure and revenue requirements for the following fiscal year to the Authority for review and approval … in the manner and to the extent … in the manner and to the extent, if any, required by the market rules."	30 April 2018

Note: EMA has granted a waiver for non-compliance with the above requirements in view that the final determination on the revenue regime was released on 27 March 2018.

Appendix 2

EMC's cost forecast broken down by service

	FY 2018/19 Budget	FY 2017/18 Forecast
Service	**Fee $'000**	**Fee $'000**
Systems	14,453	11,777
Pricing and information	2,033	1,886
Settlement/Ancillary Services	2,326	1,996
Market assessment	1,757	1,461
Rule change process	1,887	1,796
Market Licence	3,108	2,878
Panel Fees	264	175
Total	**25,828**	**21,969**
Individual fees to Market Participants	Est. fee ($)	Est. fee ($)
Common services (all those listed above) per MWh of energy injected / withdrawn	**30.16 cents (1 July 18 to 30 Jun 19)**	**24.50 cents (1 July 17 to 30 Mar 18)** **30.16 cents (1 Apr 18 to 30 Jun 18)**
Impact assessed on each class of Market Participant and Market Support Services Licensees as a class EMC fee / average actual YTD Feb 2018 USEP	0.37%	0.31%
Average actual July 2017 to Feb 2018 USEP	$83	$83