Energy Market Authority Annual Report 2017/2018 S. 355 of 2018 Presented to Parliament pursuant to Section 40 and 41 of the Public Sector (Governance) Act 2018 Ordered by Parliament to lie upon the Table: 18 September 2018

# SMART ENERGY MARKET AUTHORITY ANNUAL REPORT 2017/18

# **ABOUT THE ENERGY MARKET AUTHORITY**

The Energy Market Authority (EMA) is a statutory board under the Ministry of Trade and Industry. Our main goals are to ensure a reliable and secure energy supply, promote effective competition in the energy market and develop a dynamic energy sector in Singapore. Through our work, EMA seeks to forge a progressive energy landscape for sustained growth.

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# **OUR VISION**

#### SMART ENERGY, SUSTAINABLE FUTURE

"Smart Energy" describes how we seek to harness, deliver and utilise energy in an innovative and efficient way. "Sustainable Future" highlights the need to develop robust energy solutions that endure over time.

# **OUR MISSION**

#### TO FORGE A PROGRESSIVE ENERGY LANDSCAPE FOR SUSTAINED GROWTH

EMA seeks to develop, in partnership with all stakeholders, an energy landscape that is forward-looking, innovative and vibrant. The aim is to create an energy sector that contributes to sustained growth, for the benefit of all Singaporeans.

We will achieve our Mission and Vision through:

#### • A Secure Energy Supply

We operate the power system and promote the safe use of electricity and gas to ensure that the supply of energy is reliable and secure.

#### • A Competitive Energy Market

We promote effective competition with a sound regulatory framework that encourages investment and prevents the exercise of market power.

#### • A Dynamic Energy Sector

We develop and promote the energy industry, facilitate the efficient use of energy, and support R&D efforts to secure our energy future.

#### • A High Performance Organisation

We embrace change and seek continuous improvements in our systems, processes and people.

These four goals reflect the key areas of EMA's work, that is system operation, market and industry regulation, industry development and promotion, as well as our own internal drive for organisational excellence.

## List of Board Members

#### MR NG HOW YUE CHAIRMAN

Permanent Secretary, Ministry of Law

#### DR LIEW AH CHOY MEMBER

Chief Executive Officer, EquiVolt Pte Ltd, and Adjunct Professor, Department of Electrical & Computer Engineering, National University of Singapore (Since 1 April 2017)

#### MR NGIAM SHIH CHUN MEMBER

Chief Executive, Energy Market Authority (Since 1 February 2018)

#### MR NG WAI CHOONG MEMBER

Chief Executive, Energy Market Authority (Till 31 January 2018)

# MR KON YIN TONG,

**MEMBER** Managing Partner, Foo Kon Tan LLP

# Cronus Energy Pte Ltd

**MR PEK HAK BIN** 

Executive Officer,

MEMBER

Group Chief

#### PROFESSOR PHANG SOCK YONG MEMBER

Vice Provost (Faculty Matters), Celia Moh Chair, and Professor of Economics, Singapore Management University

#### MS QUAH LEY HOON MEMBER

Chief Editor (English Current Affairs & International News), MediaCorp Pte Ltd

#### MR QUEK SEE TIAT MEMBER

President, Council for Estate Agencies (Till 31 March 2018)

MR THAM MIN YEW RUSSELL MEMBER President, New Enterprises and Ventures, ST Engineering Ltd

#### MR YEAP POH LEONG ANDRE, SC MEMBER

Senior Partner, Rajah and Tann Singapore, LLP

#### MR ZIA ZAMAN MEMBER

Founder and Chief Executive Officer, LumenLab, Senior Vice President and Chief Innovation Officer, MetLife Innovation Centre Pte Ltd

#### IN APPRECIATION

We would like to express our appreciation to our former board members, Mr Ng Wai Choong and Mr Quek See Tiat, for their guidance and contributions to EMA.

# **Senior Management**

MR NGIAM SHIH CHUN Chief Executive **MR KNG MENG HWEE** Deputy Chief Executive Industry Regulation MR BERNARD NEE Deputy Chief Executive Corporate Services Group and Energy Planning & Development

MR SOH YAP CHOON Deputy Chief Executive Power System Operation MR SOH SAI BOR Assistant Chief Executive Economic Regulation

# **Organisation Structure**

#### CORPORATE SERVICES GROUP

- Corporate Communications Department
- Finance & Administration Department
- Human Resource & Organisational
   Development Department
- Information Technology Department
- Legal Department

#### **ECONOMIC REGULATION DIVISION**

- Economic Regulation & Licensing Department
- Market Development & Surveillance Department

#### **ENERGY PLANNING & DEVELOPMENT DIVISION**

- Energy Technology & Data Department
- External Relations Department
- Industry Development Department
- Policy & Planning Department

#### INDUSTRY REGULATION DIVISION

- Electricity Industry Regulation Department
- Gas Industry Regulation Department
- Security & Emergency Planning Department

#### POWER SYSTEM OPERATION DIVISION

- Energy Management Systems Department
- Gas System Supervision Department
- System Control Department
- System Stability & Planning Department

6 7

# It's about empowering you with more choices and greater flexibility! With Open Electricity Market, you can benefit from competitive price plans and innovative offers. No matter who you choose to buy electricity from, your electricity supply will remain as reliable as before. That's because SP Group will continue to operate the national power grid and deliver electricity to your home.

www.openelectricitymarket.sg Visit the website or call 1800-233-8000 for more information

HOW CAN I BENEFII

FROM OPFN

ELECTRICITY MARKET?

(PUSH RED BUTTON FOR ANSWERCOD)

# ENSURING A COMPETITIVE ENERGY MARKET

Pacific Light

SAVE MORE WITH POSITIVE ENERGY SEPHOR

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# **Ensuring a Competitive Energy Market**

Since 2001, EMA has been progressively opening up the retail electricity market to competition to give business consumers more options to manage their energy cost.

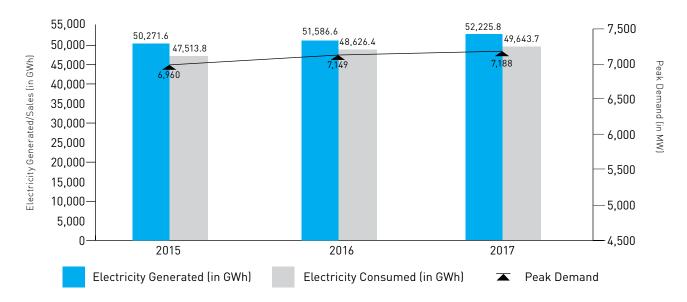
On 1 April 2018, EMA commenced the soft launch of the Open Electricity Market in Jurong. Households and businesses with postal codes starting with 60, 61, 62, 63 and 64 could choose to buy electricity from a retailer with a price plan that best meets their needs. This involved about 108,000 household accounts and 9,500 business accounts.

The soft launch will allow EMA, SP Group and electricity retailers to gather feedback and fine-tune processes before extending the Open Electricity Market to the remaining 1.3 million accounts in Singapore from the second half of 2018. EMA will continue to work closely with various stakeholders to ensure the smooth implementation of the full launch.

#### PREPARING FOR FUTURE POWER GENERATION INVESTMENTS

Technical land studies were commissioned to look into making better use of land space for energyrelated initiatives. This involved assessing suitable sites for power generation planting and site preparations to ensure the land is ready for award. Part of this involved working with government agencies such as the Housing & Development Board and Urban Redevelopment Authority (URA) for opportunities to develop substations underground. Doing so would free up surface land and improve the aesthetics of surrounding areas.

EMA will also be supporting a pilot project by SP PowerGrid to site a 230kV substation underground and achieve land savings. At the same time, we are working with other government agencies such as URA, Land Transport Authority (LTA) and PUB to co-locate future energy utility plants with other utility facilities.



#### ELECTRICITY GENERATED, CONSUMED AND PEAK DEMAND

Note: Electricity generated reflects the gross generation in the system including electricity produced by embedded generators. Solar output (generation) is included with effect from 2017 figures. The graph is referenced to statistics that are the latest at the time of preparing this report.

#### KEEPING VIGILANT WITH MARKET SURVEILLANCE

EMA continued to conduct surveillance of the energy market to safeguard fair competition and promote efficient market outcomes. We will not hesitate to take swift regulatory actions against any misconduct or anti-competitive behaviour by our licensees. For FY2017/18, there were 79 prosecution cases involving electricity and gas pipeline damage, meter tampering offences, and electrical worker and electrical installation licensing offences.





# SECURING SINGAPORE'S ENERGY FUTURE

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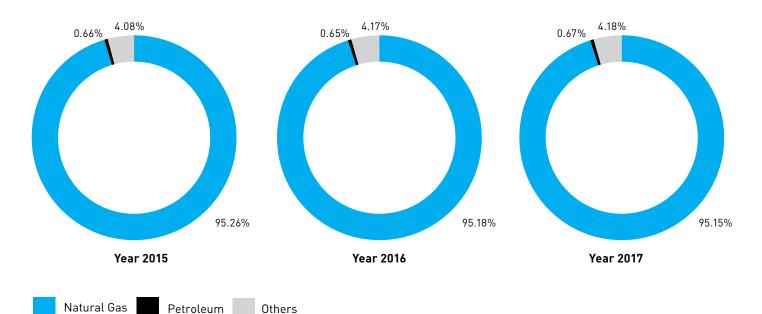
SLNG

# Securing Singapore's Energy Future

#### SECURING SINGAPORE'S ENERGY FUTURE

To secure our gas supply, which goes towards generating about 95 percent of our electricity supply, the Liquefied Natural Gas (LNG) Terminal's fourth storage tank was completed in March 2018. This will create more opportunities for trading activities and ancillary services such as LNG bunkering.

Shell Eastern Trading (Pte) Ltd and Pavilion Gas Pte Ltd were licensed in October 2017 to import Singapore's second tranche of LNG. Along with this, EMA lifted the moratorium on Piped Natural Gas (PNG) imports and established approval guidelines for future PNG imports. The spot LNG import policy, which was implemented to allow procurement of short-term LNG supplies of less than a year from the open market, further provides Singapore gas buyers with more competitive gas supply options.



#### FUEL MIX FOR ELECTRICITY GENERATION

#### FACILITATING SOLAR DEPLOYMENT

Looking beyond 2020, Singapore plans to further raise the adoption of solar power in our system to 1 gigawatt-peak (GWp). This will support the achievement of our 2030 climate change pledge to reduce our emissions intensity by 36 percent from 2005 levels by 2030.

To facilitate the deployment of solar energy, EMA has made several enhancements to the market and our regulatory framework through streamlining of existing processes. Among them is the Central Intermediary Scheme. This was launched in 2015 to make it easier for small solar installations below 1 MW to receive payment for injecting solar energy into the grid. As of April 2018, the scheme was extended to consumers with embedded generation – both solar and non-solar – below 10 MW.

EMA further facilitated solar deployment by creating a new class of market participants for solar installations below 10 MW for the purpose of self-consumption. These market participants enjoy a streamlined registration process and do not have to install physical meters.

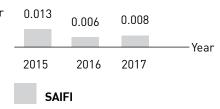
#### STRENGTHENING SYSTEM RESILIENCY

Singapore continued to score well in terms of grid charges and reliability. We have one of the most reliable electricity grids in the world, with less than 16 seconds of average disruption time per customer in 2017.



SAIDI (min)

SAIDI (System Average Interruption Duration Index) measures the average interruption time per customer in minutes



SAIFI (System Average Interruption Frequency Index) measures the average number of interruptions per customer EMA successfully integrated the Gas Monitoring System with our Energy Management System in June 2017. Gas pipeline networks were further augmented with the completion of the gas transmission network interconnections in August 2017. These will enhance our energy security during any gas emergency.

To minimise the incidence of cable and gas pipe damage due to earthworks, the Registered Earthworks Supervisor (RES) scheme was established in April 2018. The scheme will ensure all earthworks contractors which deploy site supervisors are adequately trained and competent in cable and gas pipe damage prevention. In addition, the RES will have to ensure that cable and gas pipeline damage prevention measures are adhered to. Otherwise, demerit points will be issued to the RES.

Work with URA on the Concept Plan Review, which started in 2016, was completed in 2017. This will safeguard long-term land requirements needed to develop gas and electricity infrastructures that would meet energy demand over the next 50 years. At the same time, EMA initiated work on URA's Master Plan Review to secure land required for electricity and gas infrastructures over the next 20 years.



EMA established a near miss reporting framework in November 2017 for licensees and their thirdparty earthworks contractors to report near misses to the Authority. This is to help prevent future incidents from taking place through sharing of learning points among licensees on enhancing condition monitoring, operation and maintenance practices. This will also help with gathering of key information for data analytics to identify root causes and weaknesses in the electricity and gas supply systems.

# ENHANCING OPERATIONAL EXCELLENCE

To prepare for future larger-sized H-Class combined cycle gas turbines for electricity generation and largescale solar PV deployment, EMA completed its review on the spinning reserve requirements. The new requirement, which merges the primary and secondary reserves, was effected in October 2017. It will ensure effective capacity online to back up larger and intermittent generation sources.

#### PLANNING FOR EMERGENCY PREPAREDNESS

In 2017, EMA implemented a Sectoral Detection and Early Warning System to provide EMA, as Power Sector Lead, with early detection and warning capabilities of cyber incidents at the power sector level.

EMA also participated in Exercise Jupiter, a Whole of Government exercise to test the preparedness and readiness of Home Front Agencies leading up to and during a national emergency. EMA was also involved in a government/industry-wide cybersecurity exercise by Cyber Security Agency. This page was left intentionally blank



# SIGAPORE INTERNATIONAL ENERGY WEEK

# DEVELOPING A DYNAMIC ENERGY SECTOR

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# **DEVELOPING A DYNAMIC ENERGY SECTOR**

As part of synergising efforts across agencies, a National Energy Transformation Office was established in EMA to better align efforts across relevant agencies towards our long-term energy objectives.

EMA also set up the Clean Energy Review Committee together with the Ministry of Trade and Industry (MTI), following recommendations from the Committee on the Future Economy report. This will create a regulatory environment involving the Building and Construction Authority, Economic Development Board, National Environment Agency and National Climate Change Secretariat to identify challenges and recommend solutions for the clean energy sector.

#### CATALYSING R&D INNOVATION

Under Research, Innovation and Enterprise 2020, EMA spurred R&D innovation in smart grids, power utilities and energy storage that address industry-relevant challenges. This enabled more renewables to be integrated into our grid and optimised energy use, while maintaining system stability. We:

• Awarded \$6.2 million in grants in October 2017 to a consortium led by the National University of Singapore (NUS). NUS will collaborate with the Meteorological Service Singapore to develop a solar forecasting model that will be customised to our tropical weather conditions;

- Awarded \$17.8 million in grants together with SP Group to CW Group and Red Dot Power. This helped establish Singapore's largest grid-level Energy Storage Systems (ESS) Test-bed. This project will enable us to assess the feasibility of deploying grid-level ESS technologies under Singapore's hot and humid weather, and in our highly urbanised environment;
- Partnered the Singapore Institute of Technology to establish Singapore's First Experimental Urban Micro-grid. This national infrastructure will enable the local research community and businesses to test-bed new technologies and solutions in a controlled environment. It will also provide opportunities for students to work with industry partners and energy start-ups;
- Launched an Energy Resilience grant call inviting ideas to strengthen the resilience of Singapore's cyber-physical power systems and energy market. This attracted 40 proposals in areas such as blockchain technologies, cybersecurity and energy optimisation;

- Implemented the Regulatory Sandbox Framework for the electricity and gas sectors in October 2017. This allows regulations to be relaxed, within defined parameters, for testing innovative products and services that may not fit into the existing regulatory framework of EMA. With this, EMA will be able to assess the impact of new products and services before deciding on wider regulatory treatment; and
- Launched a Call-for-Proposal, together with PUB and SP Group, to develop and test-bed integrated advanced metering solutions for all utilities. This will leverage SP Group's existing Advanced Metering Infrastructure network. A six-month trial will be conducted in 2H 2018 (after laboratory testing).

In order to enhance value capture from our R&D investments, we will be stepping up efforts to facilitate the commercialisation of energy innovations.

#### PROMOTING THE INDUSTRY

The biennial Singapore Energy Award celebrates the achievements of forward-looking organisations and individuals who demonstrate sustained efforts in nurturing a competitive workforce, as well as furthered Singapore's goals of building energy R&D capabilities and enabling research translation.

In its third edition, two outstanding leaders – Mr Tang Kin Fei (former Group President and CEO, Sembcorp Industries) and Professor Ng Wun Jern (School of Civil and Environmental Engineering, Nanyang Technological University, and former Executive Director at Nanyang Environment & Water Research Institute) – were recognised for their contributions to the energy sector.

#### NURTURING POWER ENGINEERS

Deputy Prime Minister Teo Chee Hean at the Singapore International Energy Week (SIEW) 2017 announced that EMA will take the lead to build up capabilities for Power Engineers in the Public Service (PEPS), beyond the power sector. This new mandate will require EMA to work closely with other agencies to conceptualise and implement initiatives that will not only enhance the profile of PEPS, but also articulate their career progression pathways.

Alongside that, 10 recipients of the SkillsFuture Study Awards for Power Sector were recognised in a ceremony graced by then-Senior Parliamentary Secretary (MTI) Low Yen Ling in October 2017. EMA also worked with industry partners to award 11 scholarships in 2017 under the Energy-Industry Scholarship and Singapore-Industry Scholarship. These scholarships were made available to students pursuing power sector-related courses at the local Institute of Technical Education, polytechnics and universities. Also, more than 50 participants to date have benefitted from the SkillsFuture Earn-and-Learn programmes for the power sector conducted by Singapore Polytechnic and Ngee Ann Polvtechnic.

Youth@SIEW also served as a platform to reach out to more than 400 students and educators. Then-Senior Minister of State (MTI) Sim Ann and industry captains from SP Group and Shell helmed a dialogue with students to share insights on emerging technological advancements in the energy landscape. They also spoke on how these could potentially translate to exciting job opportunities in the future.

SMS Sim also launched a series of energy education videos co-developed by EMA and the Ministry of Education's Science Department. This new collaboration will help students appreciate how science concepts will be relevant in our energy sector. Students in secondary schools and junior colleges will be able to access the videos through the new national Student Learning Space, an online learning portal.

#### ESTABLISHING ENERGY THOUGHT LEADERSHIP

EMA hosted the 10th edition of SIEW 2017 from 24 to 28 October. About 11,000 participants from over 70 countries attended the event. To mark the 10th edition, EMA launched a SIEW Commemorative Book entitled "Rethinking Energy; Navigating Change: 10 Global Insights".

EMA also co-organised the inaugural Singapore-IEA Forum at SIEW 2017. This was a key initiative of Singapore's association with the International Energy Agency (IEA). The Forum focused on energy investments in Asia and featured the launch of the 3rd IEA Southeast Asia Energy Outlook 2017.

Another significant milestone was the inaugural Singapore-Japan Energy Dialogue with Japan's Ministry of Economy, Trade and Industry and the Ministry of Foreign Affairs on 3 April 2017. The Dialogue marked a key chapter in Singapore's bilateral cooperation with Japan.

As part of the 35th ASEAN Ministers on Energy Meeting (AMEM) in Manila in September 2017, EMA worked with MTI to prepare for Singapore's ASEAN Energy Chairmanship 2018. The 36th AMEM and Associated Meetings will be held together with SIEW from 29 October - 2 November 2018.

#### LEVERAGING IT TO DRIVE DATA ANALYTICS

EMA commissioned the EMA Information Management Hub in January 2018. Today, this is capable of managing and integrating complex data sets that can drive data analytics for policy formulation and decision making.



# FOSTERING A HIGH PERFORMANCE ORGANISATION

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# FOSTERING A HIGH PERFORMANCE ORGANISATION

At EMA, we want our officers to be equipped with the knowledge, skills and aptitude to perform their tasks competently and confidently, in order to meet organisational goals. The EMA Competency Framework was thus launched in April 2017 as a training and developmental tool. This serves to help staff build up their behavioural and functional competencies in a structured way.

# PRO-ENTERPRISE AND WOG EFFORTS

EMA continuously reviews and improves our rules and regulations to serve our stakeholders better by lowering compliance costs and cutting red tape. Pro-enterprise initiatives implemented in 2017 included:

a. Supporting LTA in ensuring electric vehicles (EVs) meet regulatory standards and specifications, such as safety and technical requirements. The process requires approval of all new EV chargers provided by EV suppliers/importers to ensure public safety. To help EV suppliers/importers in expediting approval, EMA posted requirements of accredited test laboratory and test standards for EV chargers on its website in August 2017. LTA likewise shared a link on its website back to our webpage on the EV charger requirements, to keep the industry informed.

- b. Collaborating with the Ministry of Manpower's (MOM) Major Hazards Department to establish a Joint Safety Case Regulatory Framework for Major Hazard Installation/Gas Licensees. This increased productivity by streamlining work processes between EMA and MOM. It also minimised the regulatory burden on Major Hazard Installation/ Gas Licensees as this avoided overlapping requirements between both agencies.
- c. Implementing two solutions to encourage Demand-Side Management (DSM) under the Project Optiwatt programme. This aims to help consumers have a better understanding and management of their energy costs, while bringing about benefits to the power system as a whole. We:
  - i. Streamlined the Demand Response programme to allow consumers to participate through their appointed market participant. With this enhancement, Diamond Energy registered 7.2 MW of load facilities, making it the first Demand Response load in Singapore; and
  - ii. Published a self-assessment checklist which helps consumers to better understand their DSM potential.

#### CORPORATE SOCIAL RESPONSIBILITY EFFORTS

EMA partnered with caregivers and elderly members of our adopted charity, Caregiving Welfare Association (CWA), in the sale of its handmade gifts and crafts at the EMA bazaar. We also celebrated the Lunar New Year with CWA's seniors and caregivers.

Our Corporate Social Responsibility efforts saw EMA colleagues raise over \$23,000 for CWA at our Dinner & Dance. This will help fund CWA's therapy sessions, health talks and exercise equipment for the elderly and their caregivers.



FOR FY2017/18

# **FINANCIAL HIGHLIGHTS FOR FY2017/18**

For the year ended 31 March 2018, the Authority achieved a lower net surplus of \$2.128 million, as compared with \$2.332 million surplus in the previous year.

#### **FINANCIAL RESULTS**

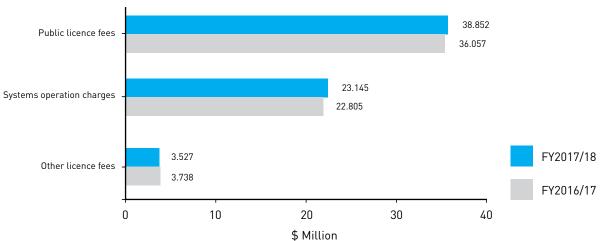
	FY2017/18 \$ Million	FY2016/17 \$ Million
Operating revenue	65.524	62.600
Operating expenses	(68.636)	(65.330)
Operating deficit	(3.112)	(2.730)
Government grant	1.237	0.995
Non-operating revenue	4.441	4.547
Surplus before contribution to GCF	2.566	2.812
Contribution to GCF	(0.438)	(0.480)
Net surplus after GCF	2.128	2.332

#### **CAPITAL EXPENDITURE**

Capital expenditure incurred for the Authority was \$3.651 million. This included \$3.572 million for IT system developments and \$0.079 million for other purchases such as office equipment and replacements of furniture & fittings.

#### **OPERATING REVENUE**

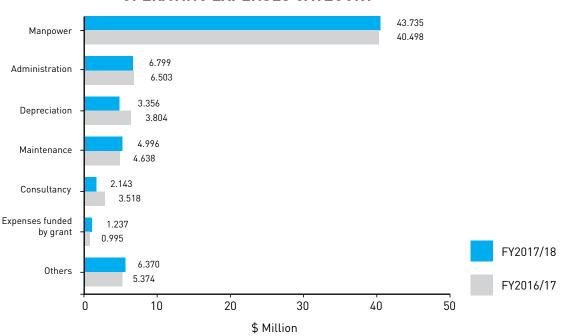
Operating revenue for the Authority was \$65.524 million for FY2017/18, with breakdown in the graph below.



#### **OPERATING REVENUE CATEGORY**

#### **OPERATING EXPENSES**

Operating expenses for the Authority totalled \$68.636 million for the year. The breakdown is shown below.



#### **OPERATING EXPENSES CATEGORY**



# ANNUAL FINANCIAL STATEMENTS FOR THE FINANCIAL YEAR ENDED 31 MARCH 2018

- $1 \rightarrow$  Independent Auditor's Report
- $4 \rightarrow$  Statement of Comprehensive Income
- $5 \rightarrow$  Balance Sheet
- $6 \rightarrow$  Statement of Changes in Equity
- $7 \rightarrow$  Statement of Cash Flows
- $8 \rightarrow$  Notes to the Financial Statements

#### INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF ENERGY MARKET AUTHORITY OF SINGAPORE

#### **Report on the Audit of the Financial Statements**

#### Our opinion

In our opinion, the accompanying financial statements of Energy Market Authority of Singapore (the "Authority") are properly drawn up in accordance with the provisions of the Energy Market Authority of Singapore Act, Chapter 92B (the "Act") and Statutory Board Financial Reporting Standards ("SB-FRSs") so as to present fairly, in all material respects, the state of affairs of the Authority as at 31 March 2018 and of the results, changes in equity and cash flows of the Authority for the financial year ended on that date.

#### What we have audited

The financial statements of the Authority comprise:

- the statement of comprehensive income for financial year ended 31 March 2018;
- the balance sheet as at 31 March 2018;
- the statement of changes in equity for the year then ended;
- the statement of cash flows for the year then ended; and
- the notes to the financial statements, including a summary of significant accounting policies.

#### **Basis for Opinion**

We conducted our audit in accordance with Singapore Standards on Auditing ("SSAs"). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### Independence

We are independent of the Authority in accordance with the Accounting and Corporate Regulatory Authority Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities ("ACRA Code") together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code.

### Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with the provisions of the Act and SB-FRSs, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

A statutory board is constituted based on its Act and its dissolution requires Parliament's approval. In preparing the financial statements, management is responsible for assessing the Authority's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless there is intention to wind up the Authority or for the Authority to cease operations.

Those charged with governance are responsible for overseeing the Authority's financial reporting process.

#### INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF ENERGY MARKET AUTHORITY OF SINGAPORE (continued)

#### Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SSAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due
  to fraud or error, design and perform audit procedures responsive to those risks, and obtain
  audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of
  not detecting a material misstatement resulting from fraud is higher than for one resulting from
  error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the
  override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Authority's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Authority to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

#### **Report on Other Legal and Regulatory Requirements**

#### Opinion

In our opinion:

- (a) the receipts, expenditure, investment of moneys and the acquisition and disposal of assets by the Authority during the year are, in all material respects, in accordance with the provisions of the Act.
- (b) proper accounting and other records have been kept, including records of all assets of the Authority whether purchased, donated or otherwise.

#### INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF ENERGY MARKET AUTHORITY OF SINGAPORE (continued)

#### **Basis for Opinion**

We conducted our audit in accordance with SSAs. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Compliance Audit* section of our report. We are independent of the Authority in accordance with the ACRA Code together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on management's compliance.

#### Responsibilities of Management for Compliance with Legal and Regulatory Requirements

Management is responsible for ensuring that the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the Act. This responsibility includes implementing accounting and internal controls as management determines are necessary to enable compliance with the provisions of the Act.

#### Auditor's Responsibilities for the Compliance Audit

Our responsibility is to express an opinion on management's compliance based on our audit of the financial statements. We planned and performed the compliance audit to obtain reasonable assurance about whether the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the Act.

Our compliance audit includes obtaining an understanding of the internal control relevant to the receipts, expenditure, investment of moneys and the acquisition and disposal of assets; and assessing the risks of material misstatement of the financial statements from non-compliance, if any, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Because of the inherent limitations in any accounting and internal control system, non-compliances may nevertheless occur and not be detected.

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PricewaterhouseCoopers LLP Public Accountants and Chartered Accountants

Singapore,

#### STATEMENT OF COMPREHENSIVE INCOME

For the financial year ended 31 March 2018

	Notes	2017/18 \$'000	2016/17 \$'000
Operating revenue	3	65,524	62,600
Operating expenses	3	(68,636)	(65,330)
Operating deficit		(3,112)	(2,730)
Government grant	3	1,237	995
Operating deficit after grant		(1,875)	(1,735)
Non-operating revenue	4	4,441	4,547
Surplus before contribution to Government Consolidated Fund ("GCF")		2,566	2,812
Contribution to GCF	5	(438)	(480)
Surplus for the year and total comprehensive income	-	2,128	2,332

The financial statements as set out on pages 4 to 31 have been authorised for issue by the Authority.

NG HOW YUE CHAIRMAN

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NGIAM SHIH CHUN CHIEF EXECUTIVE

#### **BALANCE SHEET**

As at 31 March 2018

<b>EQUITY</b> Capital account Specific funds Accumulated surplus <b>Total equity</b>	Notes 11 10	<b>2017/18</b> \$'000 86,674 19,886 78,641 185,201	2016/17 \$'000 86,674 19,886 78,845 185,405
Represented by: ASSETS Non-current assets Fixed assets	-	8,010	7,775
Other receivables Loan receivables Interest receivables	7 13 14 _	10,634 402,985 7,830 429,459	10,639 373,461 2,147 394,022
<b>Current assets</b> Other receivables and prepayments Cash and cash equivalents Loan receivables Interest receivables	7 8 13 14 _	5,303 136,973 25,176 175 167,627	4,037 135,988 - <u>88</u> 140,113
Total assets	_	597,086	534,135
LIABILITIES Current liabilities Other payables and provisions Provision for contribution to Government	9	16,987	13,380
Consolidated Fund ("GCF") Loan payables Interest payables	13 14 _	438 25,176 175 42,776	480 - <u>88</u> 13,948
<b>Non-current liabilities</b> Loan payables Interest payables Provision for office reinstatement	13 14 -	362,985 5,724 400 369,109	333,461 921 400 334,782
Total liabilities	-	411,885	348,730
Net assets	_	185,201	185,405

The accompanying notes form an integral part of these financial statements.

#### STATEMENT OF CHANGES IN EQUITY

For the financial year ended 31 March 2018

	Capital <u>account</u> (Note 11) \$'000	Specific <u>funds</u> (Note 10) \$'000	Accumulated surplus \$'000	<u>Total equity</u> \$'000
At 1 April 2016	86,674	19,884	76,515	183,073
Total comprehensive income for the year	-	-	2,332	2,332
Transfer during the year		2	(2)	-
At 31 March 2017 and at 1 April 2017	86,674	19,886	78,845	185,405
Total comprehensive income for the year	-	-	2,128	2,128
Dividends paid to the Government (Note 12)			(2,332)	(2,332)
At 31 March 2018	86,674	19,886	78,641	185,201

The accompanying notes form an integral part of these financial statements.

#### STATEMENT OF CASH FLOWS

For the financial year ended 31 March 2018

	Notes	2017/18 \$'000	2016/17 \$'000
<b>Cash flows from operating activities</b> Surplus before contribution to Government Consolidated Fund ("GCF")		2,566	2,812
Adjustments for: - Depreciation of fixed assets - Loss on disposal of fixed assets - Grants from the Government - Interest income	6 4 3 4 _	3,356 60 (1,237) (2,838) 1,907	3,804 5 (995) (3,254) 2,372
Changes in working capital: Increase in other receivables and prepayments Increase in other payables	_	(1,608) 1,395	(1,440) 988
Cash generated from operations Payment to GCF Net cash provided by operating activities	-	1,694 (480) 1,214	1,920 (610) 1,310
Cash flows from investing activities Purchase of fixed assets Purchase of fixed assets (funded by grant) Interest income received from funds managed under Centralised Liquidity Management Loan repayment from SPS Interest income received from SPS Loan made to SLNG Net cash provided by investing activities	_	(1,214) (225) 2,305 - - - 866	(1,848) (375) 2,255 82,084 1,110 (28,863) 54,363
Cash flows from financing activities Payment of dividends to the Government Grants received from the Government Grants received for purchase of fixed assets Net cash (used in)/provided by financing activities	-	(2,332) 1,237 - (1,095)	- 995 600 1,595
Net increase in cash and cash equivalents Cash and cash equivalents at beginning of year Cash and cash equivalents at end of year	8 _	985 135,988 136,973	57,268 78,720 135,988

The accompanying notes form an integral part of these financial statements.

#### NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

These notes form an integral part of and should be read in conjunction with the accompanying financial statements.

#### 1. General information

Energy Market Authority of Singapore (the "Authority") is a statutory board established in the Republic of Singapore under the Energy Market Authority of Singapore Act (Chapter 92B) and has its registered office at 991G Alexandra Road, #01-29, Singapore 119975.

The principal activities of the Authority are to create and regulate a competitive market framework for the electricity and gas industries as well as district cooling in designated areas. It also undertakes the system operation function of the electricity industry and energy development of Singapore.

#### 2. Significant accounting policies

#### 2.1 Basis of preparation

The financial statements of the Authority are prepared in accordance with the applicable requirements of the EMA Act and Statutory Board Financial Reporting Standards ("SB-FRS") including related interpretations ("INT SB-FRS") and Guidance Notes as promulgated by the Accountant-General under historical cost convention, except as disclosed in the accounting policies below.

The preparation of these financial statements in conformity with SB-FRS requires management to exercise its judgement in the process of applying the Authority's accounting policies. It also requires the use of certain critical accounting estimates and assumptions. There are no areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements.

#### Interpretations and amendments to published standards effective in 2017

On 1 April 2017, the Authority adopted the new or amended SB-FRS and INT SB-FRS that are mandatory for application for the financial year. Changes to the Authority's accounting policies have been made as required, in accordance with the transitional provisions in the respective SB-FRS and INT SB-FRS.

The adoption of these new or amended SB-FRS and INT SB-FRS did not result in substantial changes to the accounting policies of the Authority and had no material effect on the amounts reported for the current or prior financial years.

# NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

#### 2. Significant accounting policies (continued)

#### 2.2 **Revenue recognition**

Revenue is recognised to the extent that it is probable that the economic benefits will flow to the Authority and the revenue can be reliably measured, regardless of when the payment is made. Revenue is measured at the fair value of consideration received or receivable, taking into account contractual defined terms of payment and excluding taxes or duties. In particular:

- Licence fees from public licensees are recognised as income on an accrual (a) basis:
- Licence fees from inspectorate licensees are recognised as income upon (b) issue of licence:
- System operation charges are recognised as income on an accrual basis; (c)
- Penalty revenue is recognised at the point of collection of settlement; (d)
- (e) Interest revenue is recognised on an accrual basis; and
- (f) Sponsorship revenue is recognised on an accrual basis.

#### 2.3 **Employee benefits**

Employee benefits are recognised as an expense.

(a) Defined contribution scheme

> The Authority makes contributions to the Central Provident Fund ("CPF") scheme in Singapore, as required by law. Contributions to national pension schemes are recognised as an expense in the period in which the related service is performed.

(b) Employee leave entitlement

> Employee entitlements to annual leave are recognised when they accrue to the employees. A provision is made for the estimated liability for annual leave as a result of services rendered by employees up to the reporting date.

#### 2.4 **Operating lease payments**

Leases where substantially all risks and rewards incidental to ownership are retained by the lessors are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessors) are recognised in profit or loss on a straight-line basis over the period of the lease.

#### **NOTES TO THE FINANCIAL STATEMENTS** For the financial year ended 31 March 2018

#### 2. Significant accounting policies (continued)

#### 2.5 Fixed assets

On 1 April 2001, with the establishment of the Energy Market Authority, the fixed assets of the former Regulation Department of the Public Utilities Board were vested in the Authority at net carrying amounts.

Fixed assets are recognised at cost less accumulated depreciation and accumulated impairment losses.

Subsequent expenditure relating to fixed assets that has already been recognised is added to the carrying amount of the asset only when it is probable that future economic benefits associated with the item will flow to the Authority and the cost of the item can be measured reliably. All other repair and maintenance expenses are recognised in profit or loss when incurred.

Depreciation is calculated using the straight-line method to allocate their depreciable amounts over their estimated useful lives as follows:

	<u>Useful lives</u>
Computer systems	3 to 5 years
Microcomputer and software	3 years
Vehicles	6 years
Office setup/furniture and fittings	3 to 7 years
Office/work equipment	3 years

Project-in-progress relate to capital expenditure for projects which are under construction as at financial year-end. Depreciation will commence upon the completion of the project with the asset used in operation.

Fixed assets costing less than \$2,000 are fully depreciated in the following month of purchase by the Authority.

The residual values, estimated useful lives and depreciation method of fixed assets are reviewed, and adjusted as appropriate, at each balance sheet date. The effects of any revision are recognised in profit or loss when the changes arise.

The cost of an item of property, plant and equipment initially recognised includes its purchase price, projected costs of dismantlement, removal or restoration and any other costs that are directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management.

#### **NOTES TO THE FINANCIAL STATEMENTS** For the financial year ended 31 March 2018

#### 2. Significant accounting policies (continued)

#### 2.6 Impairment of non-financial assets

Fixed assets are tested for impairment whenever there is any objective evidence or indication that these assets may be impaired.

For the purpose of impairment testing, the recoverable amount (i.e. the higher of the fair value less cost to sell and the value-in-use) is determined on an individual asset basis unless the asset does not generate cash inflows that are largely independent of those from other assets. If this is the case, the recoverable amount is determined for the cash-generating unit (CGU) to which the asset belongs.

If the recoverable amount of the asset or (CGU) is estimated to be less than its carrying amount, the carrying amount of the asset is reduced to its recoverable amount.

The difference between the carrying amount and recoverable amount is recognised as an impairment loss in profit or loss.

An impairment loss for an asset is reversed only if, there has been a change in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognised. The carrying amount of this asset is increased to its revised recoverable amount, provided that this amount does not exceed the carrying amount that would have been determined (net of accumulated depreciation) had no impairment loss been recognised for the asset in prior years.

A reversal of impairment loss for an asset is recognised in profit or loss.

#### 2.7 Loans and receivables

Bank balances, receivables and loans are initially recognised at fair value plus transaction costs and subsequently carried at amortised cost using the effective interest method, less accumulated impairment losses.

The Authority assesses at each balance sheet date whether there is objective evidence that a financial asset or a group of financial assets is impaired and recognises an allowance for impairment when such evidence exists. Significant financial difficulties of the debtor, probability that the debtor will enter bankruptcy and default or significant delay in payments are objective evidence that these financial assets are impaired.

The carrying amount of these assets is reduced through the use of an impairment allowance account which is calculated as the difference between the carrying amount and the present value of estimated future cash flows, discounted at the original effective interest rate. This amount of impairment is recognised in profit or loss.

# NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

#### 2. Significant accounting policies (continued)

#### 2.7 Loans and receivables (continued)

These assets are presented as current assets except for those that are expected to be realised later than 12 months after the balance sheet date, which are presented as non-current assets.

#### 2.8 **Payables**

Other payables represent liabilities for goods and services provided to the Authority prior to the end of financial year which are unpaid. They are classified as current liabilities if payment is due within one year or less (or in the normal operating cycle of the business, if longer). Otherwise, they are presented as non-current liabilities.

Other payables are initially recognised at fair value, and subsequently carried at amortised cost using the effective interest method.

#### 2.9 Loan payables

Loans are presented as current liabilities unless the Authority has an unconditional right to defer settlement for at least 12 months after the balance sheet date, in which case they are presented as non-current liabilities.

Loans are initially recognised at their fair values (net of transaction costs) and subsequently carried at amortised cost. Any difference between the proceeds (net of transaction costs) and the redemption value is recognised in profit or loss over the period of the loans using the effective interest method.

#### 2.10 Provisions

Provisions are recognised when the Authority has a present legal or constructive obligation as a result of past events, it is more likely than not that an outflow of resources will be required to settle the obligation and the amount has been reliably estimated.

Provisions are reviewed at the end of each reporting period and adjusted to reflect the current best estimate. If it is no longer probable that an outflow of economic resources will be required to settle the obligation, the provisions are reversed.

#### 2.11 Cash and cash equivalents

Cash and cash equivalents consist of cash on hand and at banks and cash with Accountant-General's Department ("AGD"), , which are subject to an insignificant risk of changes in value. Cash with AGD refers to cash that are managed by AGD under Centralised Liquidity Management ("CLM") as set out in the Accountant-General's Circular No. 4/2009 CLM for Statutory Boards and Ministries.

#### **NOTES TO THE FINANCIAL STATEMENTS** For the financial year ended 31 March 2018

### 2. Significant accounting policies (continued)

#### 2.12 Currency translation

The financial statements are presented in Singapore Dollar, which is the functional currency of the Authority.

Transactions in a currency other than the functional currency ("foreign currency") are translated into the functional currency using the exchange rates at the dates of the transactions. Currency exchange differences resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies at the closing rates at the balance sheet date are recognised in profit or loss.

Foreign exchange gains and losses that relate to borrowings are presented in the income statement within 'finance expenses'. All other foreign exchange gains and losses impacting profit or loss are presented in the income statement within 'other gains/losses'. Non-monetary items measured at fair values in foreign currencies are translated using the exchange rates at the date when the fair values are determined. Currency translation differences on these items are included in the fair value reserve.

#### 2.13 Capital

Ordinary shares issued are classified in capital account.

#### 2.14 Dividends

Dividends are recognised when the dividends are approved for payment to the Government.

#### 2.15 Government grants

Grants from the Government are recognised as a receivable when there is reasonable assurance that the grant will be received and the Authority will comply with all the attached conditions.

Government grants receivable are recognised as income over the periods necessary to match them with the related costs which they are intended to compensate, on a systematic basis. Government grants relating to expenses are shown separately as other income.

Government grants relating to assets are deducted against the carrying amount of the assets.

#### NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

## 3. Surplus before contribution to Government Consolidated Fund ("GCF")

		Notes	2017/18 \$'000	2016/17 \$'000
Oper	ating revenue		\$ 000	Φ 000
Regu	llatory fees:	[		
	blic licence fees		38,852	36,057
	ner licence fees		3,527	3,738
Syste	ems operation charges		23,145	22,805
Onor	ating expenses		65,524	62,600
-	oower	3a	(43,735)	(40,498)
	nistration	3a 3b	(43,733) (6,799)	(40,498)
	eciation of fixed assets	6	(3,356)	(3,804)
•	tenance	Ũ	(4,996)	(4,638)
	ultancy		(2,143)	(3,518)
	nses funded by grant		(1,237)	(995)
Othe	rs	4a	(6,370)	(5,374)
		_	(68,636)	(65,330)
-				<i></i>
	ating deficit		(3,112)	(2,730)
Gove	rnment grant	-	1,237	995
Defic	it after government grant		(1,875)	(1,735)
	operating revenue	4	4,441	4,547
		• -	-,	.,e
Surpl	us before contribution to GCF	-	2,566	2,812
(a)	Manpower expenses include the foll	owing:		
			2017/10	2016/17
			2017/18 \$'000	2016/17 \$'000
			φ 000	φ 000
	Salaries and salary related expense	S	36,772	33,638
	CPF contributions	-	4,196	3,876
		-	·	
(b)	Administration expenses include the	following:		
			2017/18	2016/17
			\$'000	\$'000
	Operating lease expenses		3,672	3,666
	סרטומוווש ובמשב בארבוושבש	-	5,072	5,000

#### NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

#### 4. Non-operating revenue

	Note	2017/18 \$'000	2016/17 \$'000
Interest earned from deposits with AGD <sup>#</sup> and loan		2,838	3,254
Sponsorship for event	4a	822	820
Loss on disposal of fixed assets		(60)	(5)
Penalty charges/fines		684	302
Others	4a	157	176
	_	4,441	4,547

<sup>#</sup> Deposits managed by Accountant-General's Department ("AGD") under Centralised Liquidity Management

(a) Sponsorship and fees received which were offset against expenses in prior year financial statements are now reclassified to non-operating revenue to provide better comparative.

#### 5. Contribution to Government Consolidated Fund ("GCF")

In lieu of income tax, the Authority is required to make contribution to the GCF in accordance with the Statutory Corporations (Contributions to Consolidated Fund) Act. The contribution is based on 17% (FY2016/17: 17%) of the surplus of the Authority for the financial year.

### NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

### 6. Fixed assets

	Computer systems \$'000	Micro- computer and <u>software</u> \$'000	<u>Vehicles</u> \$'000		Office/work equipment \$'000		<u>Total</u> \$'000
Cost At 1 April 2016 Additions Disposals Reclassifications	28,598 425 (4,100) 1,084	1,368 73 (258)	83 - -	5,370 297 (394)	481 27 (107)	1,171 937 - (1,084)	37,071 1,759 (4,859)
At 31 March 2017 and at 1 April 2017 Additions Disposals Reclassifications	26,007 935 (4,248) 1,241	1,183 91 (82) -	83 - - -	5,273 16 (62)	401 62 (78)	1,024 2,547 - (1,241)	33,971 3,651 (4,470) -
At 31 March 2018	23,935	1,192	83	5,227	385	2,330	33,152
Accumulated depreciation At 1 April 2016 Depreciation charge for the financial year	20,534 3,310	1,186 199	55 14	5,072 234	399 47	-	27,246 3,804
Disposals	<u>(4,095)</u> 19,749	(258)	- 69	<u>(394)</u> 4,912	<u>(107)</u> 339	-	(4,854) 26,196
At 31 March 2017 and at 1 April 2017 Depreciation charge for	,					-	
the financial year Disposals	3,093 (4,188)	75 (82)	14	139 (62)	35 (78)	-	3,356 (4,410)
At 31 March 2018	18,654	1,120	83	4,989	296	-	25,142
<b>Net book value</b> At 31 March 2017	6,258	56	14	361	62	1,024	7,775
At 31 March 2018	5,281	72	-	238	89	2,330	8,010

#### NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

#### 7. Other receivables and prepayments

	Note	2017/18 \$'000	2016/17 \$'000
Non-current assets:			
Deposits		1,432	1,432
Other receivables	7a	9,202	9,207
Total other receivables		10,634	10,639
<i>Current assets:</i> Accrued interest income		960	1,307
Other receivables		3,602	1,884
Deposits	_	-	117
Prepayments		741	729
Total other receivables and prepayments	6	5,303	4,037

(a) Other receivables relate to expenses incurred on a development project. This amount is recoverable from the future operator or reimbursed by the Government.

#### 8. Cash and cash equivalents

	Note	2017/18 \$'000	2016/17 \$'000
Cash with AGD Cash and bank balances	8a	136,972 1	135,988 -
Cash and cash equivalents per balance sheet	,	136,973	135,988

- (a) Cash with the Accountant-General's Department ("AGD") refers to cash that are managed by AGD under Centralised Liquidity Management as set out in the Accountant-General's Circular No. 4/2009 Centralised Liquidity Management for Statutory Boards and Ministries; and
- (b) The interest rate of cash with AGD, defined as the ratio of the interest earned to the average cash balance ranges from 1.21% to 1.28% per annum (FY 2016/17: 1.24% to 1.49% per annum).

#### NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

#### 9. Other payables and provisions

	2017/18 \$'000	2016/17 \$'000
Other creditors and accruals	9,986	8,942
Accrued capital expenditure	2,980	543
Accrual for employee expenses	2,204	2,170
Provision for unutilised leave	1,817	1,725
	16,987	13,380

#### 10. Specific funds

0047/40	<u>ETF</u> \$'000
<b>2017/18</b> As at 1 April 2017 and 31 March 2018	19,886
<b>2016/17</b> As at 1 April 2016 Transfer from accumulated surplus	19,884 2
As at 31 March 2017	19,886

The Energy Training Fund ("ETF") was set up in 2015 to co-fund the development of dedicated training programs and training grants to build a strong core of Singaporean technical professionals in the power sector.

The fund is reviewed periodically and additional contributions or refunds will be made to or from the fund as and when appropriate.

#### 11. Capital account

The capital account comprises the accumulated reserves transferred from the Public Utilities Board ("PUB") to the Authority for its establishment and for the financing of fixed and development assets acquisitions and injection by the Government.

#### Capital management

The Authority's policy is to maintain a strong capital base so as to maintain market confidence and to sustain future development. There were no changes in the Authority's approach to capital management during the financial year.

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### NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

#### 12. Dividends

|                                                                             | 2017/18<br>\$'000 | 2016/17<br>\$'000 |
|-----------------------------------------------------------------------------|-------------------|-------------------|
| Ordinary dividends<br>Final dividends paid in respect of the financial year | 2,332             | -                 |

#### 13. Loan receivables and loan payables

As at 31 March 2018, the Authority has three outstanding back-to-back loan agreements signed between April 2014 to April 2016 with Singapore LNG Corporation Pte Ltd ("SLNG Corp") and the Government. Of these, two loan facilities totaling \$406 million are to fund the costs for the LNG terminal while one loan facility of \$300 million is for general working capital. These loan facilities are unsecured and carry a fixed interest rate that approximated prevailing market rates at the time of issue.

The Authority separately granted a direct loan facility of \$40 million to SLNG Corp in February 2013. This loan, fully drawn as at 31 March 2018, is also unsecured and carries a fixed interest rate that approximated prevailing market rates at the time of issue.

As at 31 March 2018, the total loan facilities to SLNG Corp is S\$746 million.

On 21 June 2016, the Authority also granted to SP Services Limited ("SPS") a loan facility of \$250 million to fund the settlement of payments, collections and associated costs relating to the Forward Sales Contract Scheme. The loan is unsecured and carries floating interest rate. As at 31 March 2018, net loan amount drawn down was \$204 million after amortization of upfront fee which was netted against the carrying amount of the loan at the inception of the loan.

To finance the loan to SPS, the Authority obtained an unsecured bank loan facility of up to \$228 million, of which \$204 million (after amortization of upfront fee which was netted against the carrying amount of the loan at the inception of the loan) was drawn down as at 31 March 2018. In addition, the Authority also secured uncommitted credit loan facility of \$22 million with each of three commercial banks. There were no drawdowns from the uncommitted credit loan facilities during the year.

As all the financing charges related to the Government and bank loans are recovered from SLNG Corp and SPS at cost, the expenses and revenue related to the two loan facilities are netted off in the statement of comprehensive income.

### NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

### **13.** Loan receivables and loan payables (continued)

| (a) | Loan receivable from SLNG Corp                                                                     | 2017/18<br>\$'000                 | 2016/17<br>\$'000                        |
|-----|----------------------------------------------------------------------------------------------------|-----------------------------------|------------------------------------------|
|     | As at 1 April<br>Loan drawdown during the year<br>As at 31 March                                   | 211,190<br>13,430<br>224,620      | 11,137<br>200,053<br>211,190             |
|     | Non-current                                                                                        | 224,620                           | 211,190                                  |
| (b) | Loan receivable from SPS                                                                           | 2017/18<br>\$'000                 | 2016/17<br>\$'000                        |
|     | As at 1 April<br>Loan drawdown during the year<br>Loan repayment during the year<br>As at 31 March | 162,271<br>41,270<br>-<br>203,541 | 82,084<br>162,271<br>(82,084)<br>162,271 |
|     | Current<br>Non-current                                                                             | 25,176<br>178,365                 | -<br>162,271                             |
| (C) | Total loan receivable                                                                              | 2017/18<br>\$'000                 | 2016/17<br>\$'000                        |
|     | Current<br>Non-current<br><b>Total Ioan receivables</b>                                            | 25,176<br>402,985<br>428,161      | -<br>373,461<br>373,461                  |
| (d) | Loan payable to the Government                                                                     | 2017/18<br>\$'000                 | 2016/17<br>\$'000                        |
|     | As at 1 April<br>Loan drawdown during the year<br>As at 31 March                                   | 171,190<br>13,430<br>184,620      | -<br>171,190<br>171,190                  |
|     | Non-current                                                                                        | 184,620                           | 171,190                                  |

#### NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

#### 13. Loan receivables and loan payables (continued)

Loan payable to the Bank (e) 2017/18 2016/17 \$'000 \$'000 As at 1 April 162,271 Loan drawdown during the year 41,270 162,271 As at 31 March 203,541 162,271 Current 25,176 Non-current 178,365 162,271 (f) Total loan payables 2017/18 2016/17 \$'000 \$'000 Current 25,176 <u>362,985</u> Non-current 333,461 **Total loan payables** 388,161 333,461

### 14. Interest receivables and interest payables

| (a) | Interest receivable from SLNG Corp                                                                        | 2017/18<br>\$'000                    | 2016/17<br>\$'000             |
|-----|-----------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------|
|     | As at 1 April<br>Interest charged during the year<br>As at 31 March                                       | 2,147<br><u>5,683</u><br>7,830       | 641<br><u>1,506</u><br>2,147  |
|     | Non-current                                                                                               | 7,830                                | 2,147                         |
| (b) | Interest receivable from SPS                                                                              | 2017/18<br>\$'000                    | 2016/17<br>\$'000             |
|     | As at 1 April<br>Interest charged during the year<br>Interest repayment during the year<br>As at 31 March | 88<br>2,361<br><u>(2,274)</u><br>175 | 336<br>1,501<br>(1,749)<br>88 |
|     | Current                                                                                                   | 175                                  | 88                            |

#### NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

#### 14. Interest receivables and interest payables (continued)

Total interest receivables (C) 2017/18 2016/17 \$'000 \$'000 Current 175 88 Non-current 7,830 2,147 **Total interest receivables** 8,005 2,235 (d) Interest payable to the Government 2017/18 2016/17 \$'000 \$'000 As at 1 April 921 Interest charged during the year 4,803 921 As at 31 March 5,724 921 Non-current 5,724 921 (e) Interest payable to the Bank 2017/18 2016/17 \$'000 \$'000 As at 1 April 88 Interest charged during the year 2,361 1,501 Interest repayment during the year (2,274) (1,413)As at 31 March 175 88 Current 175 88 (f) Total interest payables 2017/18 2016/17 \$'000 \$'000 Current 175 88 Non-current 5,724 921 **Total interest payables** 5,899 1,009

#### **NOTES TO THE FINANCIAL STATEMENTS** For the financial year ended 31 March 2018

#### 15. Outstanding capital and loan commitments

The Authority has procurement commitments for fixed assets incidental to its ordinary course of business. The outstanding capital commitments as at 31 March 2018 for the Authority amounted to \$3.3 million (FY2016/17: \$1.1 million).

The Authority has entered into loan agreements with SLNG Corp. The outstanding undrawn loan commitment amounted to \$521.4 million (FY2016/17: \$534.8 million) which pertains to back-to-back agreements which the Authority signed with the Government of the Republic of Singapore ("the Government").

The Authority has entered into agreement to grant loan facilities to SPS. The outstanding undrawn loan commitment amounted to \$45.6 million (FY2016/17: \$86.7 million). To finance this loan, the Authority obtained an unsecured bank loan facility of up to \$228 million, of which \$23.6 million (FY2016/17: \$64.7 million) is undrawn as at 31 March 2018. In addition, the Authority also secured uncommitted credit loan facility of \$22 million with each of 3 commercial banks. There were no drawdowns from the uncommitted credit loan facilities.

#### 16. Operating lease commitments

The Authority has entered into commercial leases for its office. These leases have remaining non-cancellable terms of between one year and five years.

Future minimum rentals under non-cancellable leases are as follows:

|                                 | 2017/18<br>\$'000 | 2016/17<br>\$'000 |
|---------------------------------|-------------------|-------------------|
| Authority as Lessee             | 0.000             | 0 770             |
| Within 1 year                   | 3,886             | 3,770             |
| After 1 year but within 5 years | 4,073             | 2,175             |
|                                 | 7,959             | 5,945             |
| Authority as Lessor             |                   |                   |
| Within 1 year                   | 100               | 121               |
| After 1 year but within 5 years | -                 | 100               |
|                                 | 100               | 221               |

# NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

#### 17. Financial risk management objectives and policies

The Authority is exposed to financial risks arising from its operations and the use of financial instruments. The key financial risks include interest rate risk, credit risk and liquidity risk. The Authority has established processes to monitor and manage these risks in a timely manner.

The following section provides details regarding the Authority's exposure to the above-mentioned financial risks and the objectives, policies and processes for the management of these risks.

There has been no change to the Authority's exposure to these financial risks or the manner in which it manages and measures the risks.

(a) Interest rate risk

At the end of the reporting period, the interest rate profile of the interestearning financial instruments was:

|                           | 2017/18 | 2016/17 |
|---------------------------|---------|---------|
|                           | \$'000  | \$'000  |
| Variable rate instruments |         |         |
| Cash with AGD             | 136,972 | 135,988 |

Surplus cash are placed with AGD (under CLM as set out in the Accountant-General's Circular No. 4/2009 Centralised Liquidity Management for Statutory Boards and Ministries).

|                 | 2017/18<br>\$'000 | 2016/17<br>\$'000 |
|-----------------|-------------------|-------------------|
| Loan payable    | (388,161)         | (333,461)         |
| Loan receivable | 428,161           | 373,461           |

Sensitivity analysis for interest rate risk

The interest rates for Cash with AGD are based on deposit rates determined by the financial institutions with which the cash are deposited and are expected to move in tandem with market interest rate movements. If the variable interest rate were to increase/decrease by 0.13% (FY2016/17: 0.12%) at the end of the reporting period with all other variables held constant, the Authority's net surplus before GCF will be higher/lower by about \$0.2 million (FY2016/17: \$0.2 million).

As all financing costs related to the loan payable to bank are recovered from SPS, there is no interest rate risk impact on the net surplus/deficit for the financial year.

#### **NOTES TO THE FINANCIAL STATEMENTS** For the financial year ended 31 March 2018

#### 17. Financial risk management objectives and policies (continued)

(a) Interest rate risk (continued)

Sensitivity analysis for interest rate risk (continued)

As all financing costs related to the back-to-back loan payable to the Government are recovered from SLNG Corp, there is no interest rate risk impact on the net surplus/deficit for the financial year.

The Authority assess that there is no interest rate risk for the Authority's direct loan receivable from SLNG Corp, as it carries a fixed interest rate.

(b) Credit risk

At 31 March 2018, loan and interest receivables due from SLNG Corp and SPS amounted to \$232.5 million (FY2016/17: \$213.3 million) and \$203.7 million (FY2016/17: \$162.4 million), respectively. The borrowers are established corporations with good financial standing. Management believes that minimal credit risks exist with respect to these receivables.

The carrying amount of other receivables and cash and bank balances represent the Authority's maximum exposure to credit risk. No other financial assets carry a significant exposure to credit risk.

Cash and bank balances are placed with AGD. Management believes that minimal credit risks exist with respect to the funds placed with AGD.

Financial assets that are neither past due nor impaired

Other receivables that are neither past due nor impaired are with creditworthy debtors with good payment record with the Authority.

(c) Liquidity risk

Liquidity risk is the risk that the Authority will encounter difficulty in meeting obligations due to shortage of funds. The Authority's exposure to liquidity risk arises primarily from mismatches of the maturities of non-derivative financial liabilities. To manage liquidity risk, the Authority monitors its net operating cash flows and maintains an adequate level of cash and cash equivalents.

#### **NOTES TO THE FINANCIAL STATEMENTS** For the financial year ended 31 March 2018

#### 17. Financial risk management objectives and policies (continued)

(c) Liquidity risk (continued)

#### Analysis of financial instruments by remaining contractual maturities

The table below summaries the maturity profile of the Authority's financial assets and liabilities at the end of the reporting period based on contractual undiscounted repayment obligations:

| 2017/10                                         | Less than<br><u>1 year</u><br>\$'000 | Between<br><u>1 and 5 years</u><br>\$'000 | Over<br><u>5 years</u><br>\$'000 |
|-------------------------------------------------|--------------------------------------|-------------------------------------------|----------------------------------|
| 2017/18<br>Interest payable to bank             | (175)                                | _                                         | _                                |
| Loan payable to bank <sup>#</sup>               | (28,426)                             | (190,350)                                 | -                                |
| Interest payable to the Government              | -                                    | -                                         | (5,724)                          |
| Loan payable to the Government                  | -                                    | -                                         | (213,512)                        |
| Other payables*                                 | (15,170)                             | -                                         | -                                |
| Total net undiscounted financial<br>liabilities | (43,771)                             | (190,350)                                 | (219,236)                        |
| 2016/17                                         |                                      |                                           |                                  |
| Interest payable to bank                        | (88)                                 | -                                         | -                                |
| Loan payable to bank <sup>#</sup>               | -                                    | (176,835)                                 | -                                |
| Interest payable to the Government              | -                                    | -                                         | (921)                            |
| Loan payable to the Government                  | -                                    | -                                         | (202,774)                        |
| Other payables*                                 | (11,655)                             | -                                         | -                                |
| Total net undiscounted financial<br>liabilities | (11,743)                             | (176,835)                                 | (203,695)                        |

# Excludes amortised upfront fee

\* Excludes provision

#### (d) Fair value measurements

The carrying amounts of cash and cash equivalents, other current receivables, current loan receivables and interest receivables, other current payables, current loan payables and interest payables approximate their respective fair values due to the relatively short-term maturity of these financial instruments.

Fair value of fixed-rate loans is calculated based on the present value of future cash flows, discounted at rate of 3.01% (FY2016/17: 2.99%) per annum which is determined based on an average of 5 to 7 year swap offer rates respectively at the end of the reporting period plus an adequate credit spread.

#### **NOTES TO THE FINANCIAL STATEMENTS** For the financial year ended 31 March 2018

#### 17. Financial risk management objectives and policies (continued)

(d) Fair value measurements (continued)

The Authority classifies fair value measurements using a fair value hierarchy that reflects the significance of the inputs used in making the measurements. The fair value hierarchy has the following levels:

- quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1);
- (ii) inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices) (Level 2); and
- (iii) inputs for the asset or liability that are not based on observable market data (unobservable inputs (Level 3)

The fair values are within level 2 of fair value hierarchy:

|                                                                   | <u>Level 2</u><br>\$'000 |
|-------------------------------------------------------------------|--------------------------|
| 2017/18                                                           |                          |
| Fixed rate loan due from SLNG Corp, including accrued interests   | 224,180                  |
| Fixed rate loan due to Government, including accrued<br>interests | (184,424)                |
| 2016/17                                                           |                          |
| Fixed rate loan due from SLNG Corp, including accrued             |                          |
| interests                                                         | 204,752                  |
| Fixed rate loan due to Government, including accrued<br>interests | (167,274)                |

#### (e) Financial instruments by category

The carrying amounts of the different categories of financial instruments are as follows:

|                                                                               | 2017/18<br>\$'000 | 2016/17<br>\$'000 |
|-------------------------------------------------------------------------------|-------------------|-------------------|
| Financial assets                                                              | ÷ • • • •         | + 500             |
| Other receivables <sup>#</sup>                                                | 15,196            | 13,947            |
| Cash and cash equivalents                                                     | 136,973           | 135,988           |
| Interest receivables                                                          | 8,005             | 2,235             |
| Loan receivables                                                              | 428,161           | 373,461           |
| <b>Financial liabilities at amortised cost</b><br>Other payables <sup>*</sup> | 15,170            | 11,655            |
| Interest payables                                                             | 5,899             | 1,009             |
| Loan payables                                                                 | 388,161           | 333,461           |
| # Excludes prepayments                                                        |                   |                   |

## NOTES TO THE FINANCIAL STATEMENTS

For the financial year ended 31 March 2018

#### 18. Related party transactions

Some of the Authority's transactions and arrangements are with related parties and the effect of these on the basis determined between the parties is reflected in these financial statements. The balances are unsecured, interest-free and repayable on demand unless otherwise stated.

The Authority had the following transactions with its related parties during the year:

|                                                                  | 2017/18<br>\$'000 | 2016/17<br>\$'000    |
|------------------------------------------------------------------|-------------------|----------------------|
| <i>Ministry of Trade and Industry</i><br>Operating Grant         | 1,237             | 995                  |
| Key management personnel compensation                            |                   |                      |
|                                                                  | 2017/18<br>\$'000 | 2016/17<br>\$'000    |
| Authority members' allowance<br>Salaries, bonuses and allowances | 152<br>3,023      | 149<br>2,240         |
| CPF contributions                                                | 91<br>3,266       | 2,210<br>56<br>2,445 |

#### 19. New or revised accounting standards and interpretations

Below are the mandatory standards, amendments and interpretations to existing standards that have been published, and are relevant for the Authority's accounting periods beginning on or after 1 April 2018 and which the Authority has not early adopted:

(a) SB-FRS 109 Financial instruments (effective for annual periods beginning on or after 1 April 2018)

SB-FRS 109 replaces SB-FRS 39 Financial instruments: Recognition and Measurement and its relevant interpretations.

SB-FRS 109 retains the mixed measurement model and establishes three primary measurement categories for financial assets: amortised cost, fair value through Other Comprehensive Income (OCI) and fair value through Profit or Loss. The basis of classification depends on the entity's business model and the contractual cash flow characteristics of the financial asset. Investments in equity instruments are required to be measured at fair value through profit or loss with an irrevocable option at inception to present changes in fair value in OCI (FVOCI). Gains and losses realised on the sale of such financial assets at FVOCI are not transferred to profit or loss on sale but reclassified from the FVOCI reserve to retained earnings.

#### **NOTES TO THE FINANCIAL STATEMENTS** For the financial year ended 31 March 2018

#### **19.** New or revised accounting standards and interpretations (continued)

(a) SB-FRS 109 Financial instruments (effective for annual periods beginning on or after 1 April 2018) (continued)

Under SB-FRS 109, there are no changes to the classification and measurement requirements for financial liabilities except for the recognition of fair value changes arising from changes in own credit risk. For liabilities designated at fair value through profit or loss, such changes are recognised in OCI.

SB-FRS 109 relaxes the requirements for hedge effectiveness by replacing the bright line hedge effectiveness tests. It requires an economic relationship between the hedged item and hedging instrument and for the 'hedged ratio' to be the same as the one management uses for risk management purposes.

There is also now a new expected credit losses impairment model that replaces the incurred loss impairment model used in SB-FRS 39. It applies to financial assets classified at amortised cost, debt instruments measured at fair value through OCI, contract assets under SB-FRS 115 Revenue from contracts with customers, lease receivables, loan commitments and certain financial guarantee contracts.

The new standard also introduces expanded disclosure requirements and changes in presentation.

(i) Transition

The Authority plans to adopt the new standard retrospectively from 1 April 2018, in line with the transition provisions permitted under the standard. Comparatives for FY2017/18 will not be restated and the Authority will recognise any difference between the carrying amounts at 31 March 2018 and 1 April 2018 in the opening retained earnings.

(ii) Impairment of financial assets

The following financial assets will be subject to the expected credit losses impairment model under SB-FRS 109:

- loan to and other receivables

The management does not expect any significant impact arising from the application of the expected credit losses impairment model.

#### **NOTES TO THE FINANCIAL STATEMENTS** For the financial year ended 31 March 2018

#### **19.** New or revised accounting standards and interpretations (continued)

(b) SB-FRS 115 Revenue from contracts with customers (effective for annual periods beginning on or after 1 April 2018)

SB-FRS 115 replaces SB-FRS 18 Revenue, and related interpretations.

Revenue is recognised when a customer obtains control of a good or service. A customer obtains control when it has the ability to direct the use of and obtain the benefits from the good or service. The core principle of SB-FRS 115 is that an entity recognises revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. An entity recognises revenue in accordance with that core principle by applying the following steps:

- Step 1: Identify the contract(s) with a customer
- Step 2: Identify the performance obligations in the contract
- Step 3: Determine the transaction price
- Step 4: Allocate the transaction price to the performance obligations in the contract
- Step 5: Recognise revenue when (or as) the entity satisfies a performance obligation

SB-FRS 115 also includes a cohesive set of disclosure requirements that will result in an entity providing users of financial statements with comprehensive information about the nature, amount, timing and uncertainty of revenue and cash flows arising from the entity's contracts with customers.

(i) Transition

The Authority plans to adopt the new standard using the modified retrospective approach which means that the cumulative impact of the adoption will be recognised in the opening retained profits at 1 April 2018 and comparative information for FY2017/18 will not be restated.

Management has reviewed and assessed that there is no significant impact on the financial statements arising from adoption of SB-FRS 115.

#### **NOTES TO THE FINANCIAL STATEMENTS** For the financial year ended 31 March 2018

#### **19.** New or revised accounting standards and interpretations (continued)

(c) SB-FRS 116 Leases (effective for annual periods beginning on or after 1 April 2019)

SB-FRS 116 will result in almost all leases being recognised on the balance sheet, as the distinction between operating and finance leases is removed.

Under the new standard, an asset (the right to use the leased item) and a financial liability to pay rentals are recognised. The only exceptions are short-term and low-value leases. The accounting for lessors will not change significantly.

Some of the Authority's commitments may be covered by the exception for short-term and low-value leases and some commitments may relate to arrangements that will not qualify as leases under SB-FRS 116.

The new standard also introduces expanded disclosure requirements and changes in presentation.

The Authority plans to adopt the new standard on 1 April 2019 and will perform a detailed analysis of the application of the standard, including the transition options and practical expedients in FY2018/19.

#### 20. Reclassifications

Certain comparatives amounts have been reclassified for consistency with the presentation of the 2017/2018 financial statements. The reclassification has no material impact to the Authority.

#### 21. Authorisation of financial statements

The financial statements of the Authority for the financial year ended 31 March 2018 were authorised for issue in accordance with a resolution of the Authority on 22 June 2018.

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