



Ensuring Reliability

ema annual report 2004/05



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chairman's  
message



The year 2004 has been an eventful one for the Energy Market Authority (EMA) in many ways.

The year saw EMA implement vesting contracts to curb market power in the electricity market. This has brought about a higher level of competition. The 2004 average spot price in the wholesale market was lower than the 2003 average spot price by about 10 %.

The power disruption on 29 June 2004 was a reminder of the importance of maintaining a robust electricity system. The various parties in the gas and electricity industry had since reviewed the root causes of the failure and implemented corrective measures.



The work of the government-appointed Energy System Review Committee (ESRC) has also been useful in helping to affirm many of the design principles EMA has implemented. While most of the recommendations are already in the process of being implemented, there are others which require further study. They will be implemented if the study shows that it is beneficial to do so.

The year 2005 will see EMA conducting a review of the electricity market with a view to take stock of what has been achieved and what more can be done to further enhance competition. We will also be completing the final pieces of work needed to implement the new framework for competition in the gas sector.

Even as we busy ourselves with immediate priorities, we will also keep our eyes on the future. We will need more gas to meet the growing demand for energy. EMA has started a study into the feasibility of importing liquefied natural gas (LNG). The plan is to complete the study by end 2005. Importing LNG will mean that additional sources of fuel can be secured. This will enhance competition in gas.

EMA has come this far in developing the electricity and gas markets because of the support and cooperation of the industry, and our fundamental belief that a competitive market is in the best interest of all market participants. This is a challenge which we have to undertake together, even as we respond to the market participants' needs, always mindful of fair competition in the market and the need for a level playing field.

We look forward to continue working closely with the industry as we jointly face and overcome the challenges on the way to structuring an industry that will deliver sustainable benefits to all Singaporeans.

Last but not least, I would like to thank fellow members of the Authority and commend my colleagues in the EMA for their dedication in building together a better energy future for Singapore.



Chiang Chie Foo | Chairman

## **Our Mission**

Think ahead, change today : Forging a competitive and secure energy industry for our economy.

## **Our Vision**

To be a dynamic and cohesive organisation proactively promoting a competitive and reliable energy industry.

## **Our Goals**

Forge a competitive market  
Promote high quality performance in the industry  
Nurture a progressive industry  
Maintain a secure and reliable energy system  
Safeguard consumers' interests  
Achieve organisational excellence

## Milestones



- 1 October 1995** Corporatisation of electricity and piped gas undertakings of the Public Utilities Board to gradually introduce competition in the energy market.
- 1 April 1998** The Singapore Electricity Pool (SEP) was established to facilitate the trading of electricity between generating companies and the retail company in a competitive environment. The SEP was operated by PowerGrid Ltd as the Pool Administrator.
- 11 March 2000** The Government announced further deregulation of the electricity industry. The key restructuring initiatives were the separation of the ownership of the contestable and non-contestable parts of the electricity industry, the establishment of an independent system operator and the liberalisation of the retail market.
- 1 April 2001** The Energy Market Authority (EMA) was formed to promote competition and regulate the electricity and gas industries. The Energy Market Company (EMC) took over the role of Market Administrator.
- As a first step towards separating ownership of the contestable parts of the industry from the natural monopolies, Singapore Power Ltd fully divested its generation companies, PowerSenoko Ltd and PowerSeraya Ltd, to Temasek Holdings. It retained ownership of the transmission and distribution company, PowerGrid Ltd.
- 1 July 2001** Liberalisation of the electricity retail market kicked-off with about 250 of the largest non-domestic electricity consumers. These were consumers with maximum power requirement of 2MW and above.
- 1 January 2003** The National Electricity Market of Singapore (NEMS) commenced operation. Generation companies bid every half hour to sell electricity into the new wholesale electricity market. As a result, prices reflect more closely changes in the supply and demand of electricity.
- 1 June 2003** Phase 1 liberalisation of the retail electricity market. Non-domestic consumers with average monthly electricity consumption of 20,000 kWh and above became contestable in batches.
- 21 December 2003** Phase 2 liberalisation of the retail electricity market. Non-domestic consumers with average monthly electricity consumption of 10,000 kWh and above became contestable in batches.
- 1 January 2004** Introduction of vesting contracts to curb market power.

members  
of the authority



- 1 Mr Chiang Chie Foo - Chairman
- 2 Mr Khoo Chin Hean - Chief Executive
- 3 Mr Tan Gee Paw
- 4 Mr Leong Keng Thai
- 5 Mr Giam Chin Toon

- 6 Mr Lee Tzu Yang
- 7 Mr Seck Wai Kwong
- 8 Mr Jen Kwong Hwa
- 9 Mr Nizam Idris
- 10 Mdm Phoon Lee Chaeng



key  
officers

The EMA comprises three Divisions. The Regulation and Power System Operation Divisions are the major operational Divisions that forge a competitive and secure energy industry. The Corporate Services Division forms the pulse of the organisation.



- 1 Mr Khoo Chin Hean - Chief Executive
- 2 Mr Yeo Yek Seng - Deputy Chief Executive (Regulation)
- 3 Mr Kok Shook Kwong - Deputy Chief Executive (Power System Operation)
- 4 Mr Chong Joon Kwang - Senior Director (Corporate Services)

## The Electricity Market



When Phase 2 of retail contestability is completed, a cumulative 75 percent of the total electricity demand will be opened to retail competition.



## Developing the Market

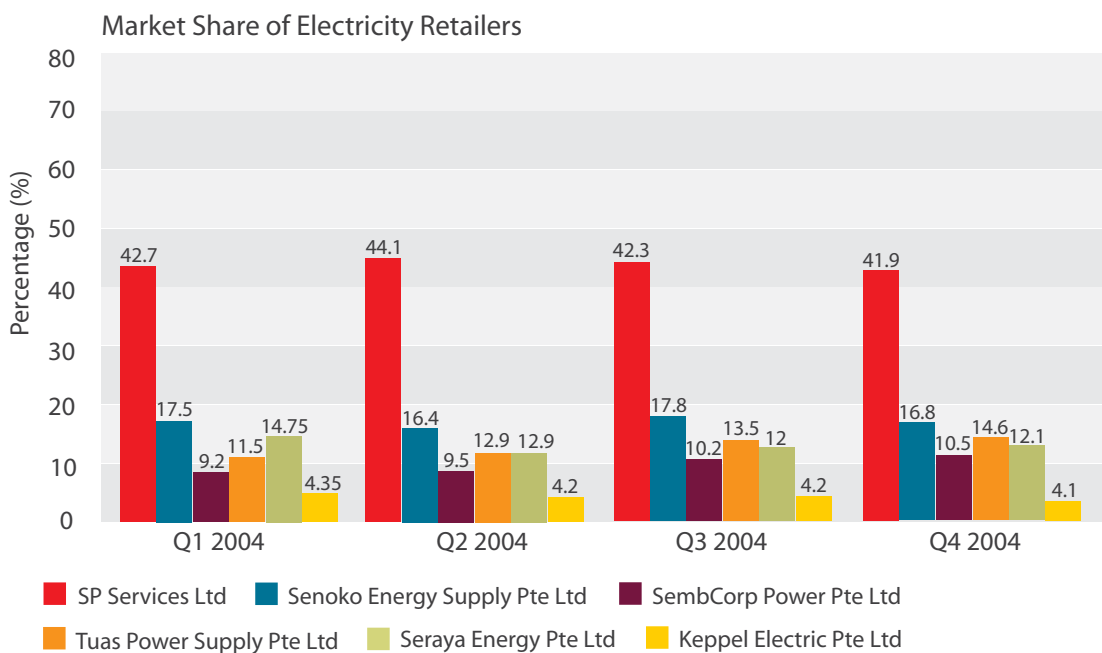
The electricity market has come a long way since 2001. From a price regulated regime, an open market framework for the National Electricity Market of Singapore (NEMS) was formulated and implemented on 1 January 2003.

Since then, the new electricity market has seen its share of changes as it grew and adapted to changes. Phase 0 and Phase 1 opening of contestability to 5,000 consumers have been completed. EMA is currently implementing Phase 2. As at end March 2005, a total of 6,000 consumers are already contestable and are able to choose their preferred suppliers to take advantage of the best available packages and offers that meets their needs.

After completion of Phase 2 by early 2006, about 75% of the total electricity demand will be opened to retail competition. The total number of contestable consumers will be about 10,000.

Contestable consumers can select a retailer to supply electricity to them. Alternatively, they can also buy electricity at wholesale prices.

Taking advantage of the choices available to them, many newly contestable large consumers have been able to benefit from lower wholesale prices in 2004.





EPSON

MARKS & SPENCER

BORDERS

KIP PLACE



The implementation of vesting contracts on 1 January 2004 has helped to bring market power under control. This has caused the 2004 average spot price in the wholesale electricity market to fall below that of 2003 by about 10%.

Follow-up surveys done by EMA on the pioneer batches of contestable consumers have shown a high level of awareness of the liberalised retail electricity market.

Retail contestability for the remaining 1.2 million consumers comprising both domestic and non-domestic users is currently under study.

### Regulating for Efficiency

#### Vesting Contracts Curbed Market Power

EMA imposed vesting contracts on 1 January 2004 to curb market power of the generating companies.

Vesting contracts commit generating companies to sell a specific amount of electricity at the long run marginal cost (LRMC) of the most efficient electricity generating technology in current use viz. the gas plant. In the year prior to vesting, several contestable consumers had informed EMA that the offers from retailers were priced close to the LRMC of the most efficient plants in our market viz. the gas plants. These same consumers could choose instead to buy wholesale. However the average spot price in the wholesale market throughout 2003 also stayed close to LRMC.

Since vesting contracts were implemented on 1 January 2004, the spot price in the wholesale electricity market has averaged about 10% below the LRMC of the gas plants throughout 2004. Buying wholesale has since become an alternative if the offers from retailers are not attractive, indicating the effectiveness of the vesting contracts in curbing market power.

	Date of Commencement	Criteria	Cumulative number of consumers	Cumulative % of Total Sales
Phase 0	1 July 2001	Non-domestic consumers with maximum power requirement of 2MW and above	250	40
Phase 1	1 June 2003	Non-domestic consumers with average monthly consumption of 20,000kWh and above	5000	70
Phase 2	21 December 2003	Non-domestic consumers with average monthly consumption of 10,000kWh and above	10,000	75



**Reduction in Grid Charges**

The monopoly electricity grid company SP PowerAssets Ltd (SPPA) is price regulated by the EMA. The method of price regulation provides incentives for SPPA to be efficient. SPPA is rewarded for efficiency gains and will pass through the benefits derived from the efficiency gains to consumers.

SPPA had committed to reduce the average grid charge over the five-year regulatory period 1 April 2003 to 31 March 2008 in line with the new regulatory mechanism.

A reduction of 3% in the average grid charge to 3.75¢/kWh was implemented on 1 May 2004. The 3 % reduction in grid charge translated to about 1 % reduction in the average electricity price.

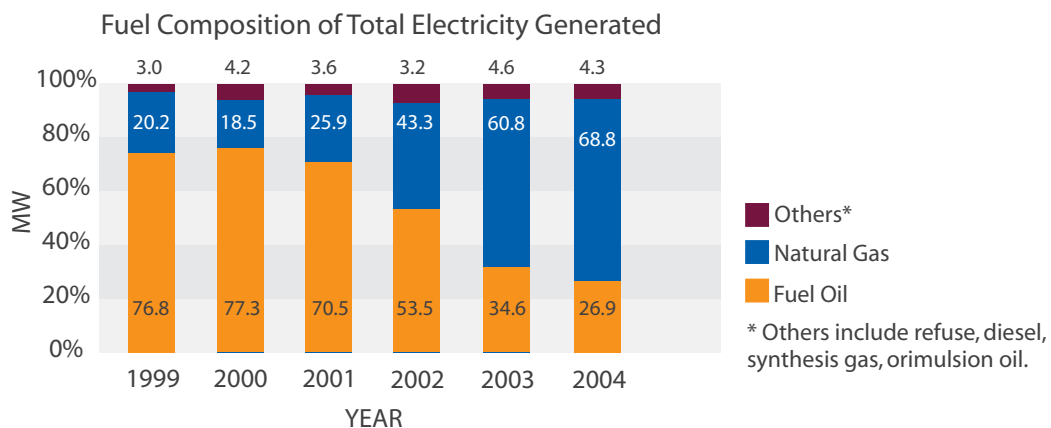
**Competition Driving Companies to Become More Efficient**

The market dictates the choice of fuel to fire our electricity generation plants. Competition will ensure that generation companies use the most cost efficient fuel and technologies. This in turn will drive out inefficiencies and the benefits will be passed through to consumers.

As a result there has been an increasing shift away from oil-fired generating plant to more efficient gas-fired plant.

From a situation where more than 77% of Singapore's total generation output was oil-fired in year 2000 at the start of the market reform, almost 70% of our total generation output is gas fired today.

Competitive pressures have driven some generation companies to take other routes to stay in the market. One such generation company, PowerSeraya Ltd, has turned to using orimulsion – a bitumen-based emulsion - to keep its older steam plants competitive.





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parties

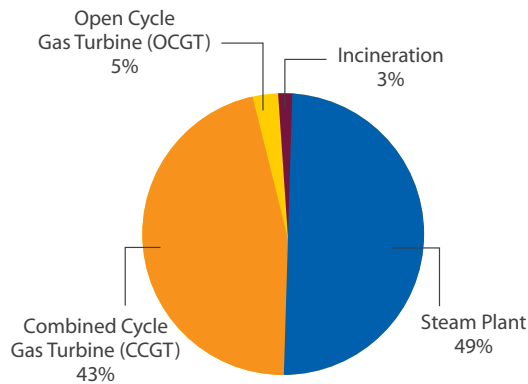
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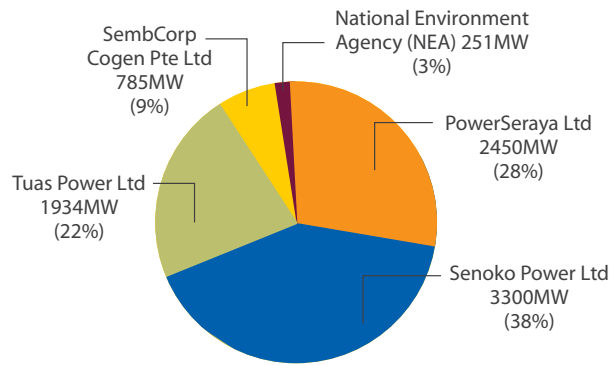
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Registered Capacity by Plant Type



Licensed Capacity by Generation Companies



### System Reliability and Performance

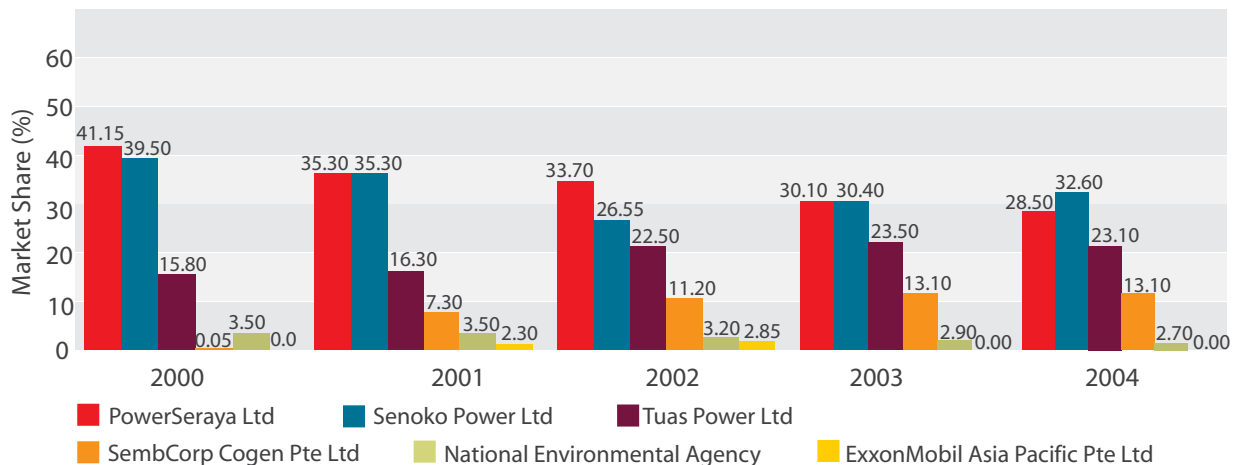
Over the last year, EMA imposed new performance standards for the electricity grid operator, SPPA.

These specify outcomes, replacing prescriptive measures for the grid company. These outcomes define the expectations placed on the grid operator whose task it is to find efficient ways to meet these expectations.

Generation companies operating in the competitive arena are driven by market signals. The market is designed to reward efficiency and reliability.

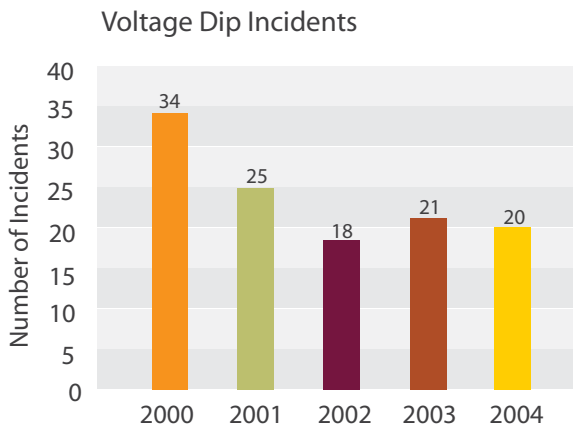
Valuable lessons were learnt arising from the gas disruptions in November 2003 and June 2004. The market signals incentivised the generation companies to take measures to improve reliability. Measures taken to protect themselves against failure included investing in dual source gas feeds to power their generating plant and improving their systems so that they can successfully switch from gas to diesel.

Market Share of Generation Companies



NOTE: ExxonMobil Asia Pacific Pte Ltd has been exempted from the licensing requirement and ceased to be a market participant since 1 Jan 2003





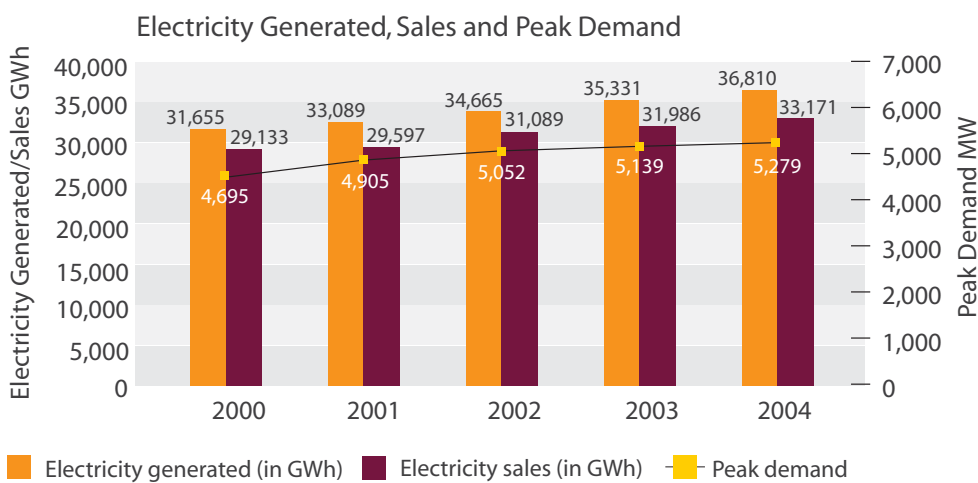
### Voltage Dips

Voltage dips are momentary reductions in electrical voltage lasting fractions of a second that leave most electrical equipment unaffected. Such voltage dips affect a small number of companies operating equipment that are highly sensitive to voltage fluctuation. While they can be minimised, such voltage dips cannot be fully eliminated.

In the late 1990s, the number of voltage dips reached a high of 36 per year. The number of voltage dips has declined in the last few years. There were 20 voltage dips in 2004, 21 in 2003 and 18 in 2002. These voltage dips were caused by faults in consumers' installations, cable damage or failure of SPPA equipment or cables.

EMA conducts regular reviews of measures taken to keep the number of voltage dips low. As voltage dips cannot be totally eliminated, these measures will need to be complemented with voltage dip protection efforts by companies that are sensitive to voltage dips.

EMA is studying proposals by the SPPA to provide voltage dip protection service to companies.



## Gas Market Liberalisation



With the liberalisation of the gas industry PowerGas Ltd has been appointed as the sole licensee for Singapore's gas transport business.



## Liberalisation of the Gas Sector

Natural gas is new to Singapore and has never been regulated. The gas sector is more complex and encumbered than the electricity system. Work to structure the gas system and bring it under regulation is in progress.

PowerGas Ltd has been identified as the monopoly transporter of gas and will continue to be price regulated by the EMA. EMA will implement a price regulatory mechanism to incentivise PowerGas Ltd to be efficient and to pass through the benefits of efficiency gains to consumers.

For this to be effected, pipelines currently owned and operated by SembCorp Gas Pte Ltd have to be transferred to PowerGas Ltd's ownership. This is currently under active study.

The Network Code, a document that governs multilateral transport agreements between the shippers and gas transporter has been completed. EMA plans to implement the Network Code after a final independent review to ensure that it allows open access to the gas networks on fair and non-discriminatory terms. The review will be completed by the third quarter of 2005.

EMA will also be licensing various gas facilities including the onshore receiving facilities (ORF) which form a critical part of the gas import infrastructure. Licensing of these facilities will be implemented after changes to legislation are made.

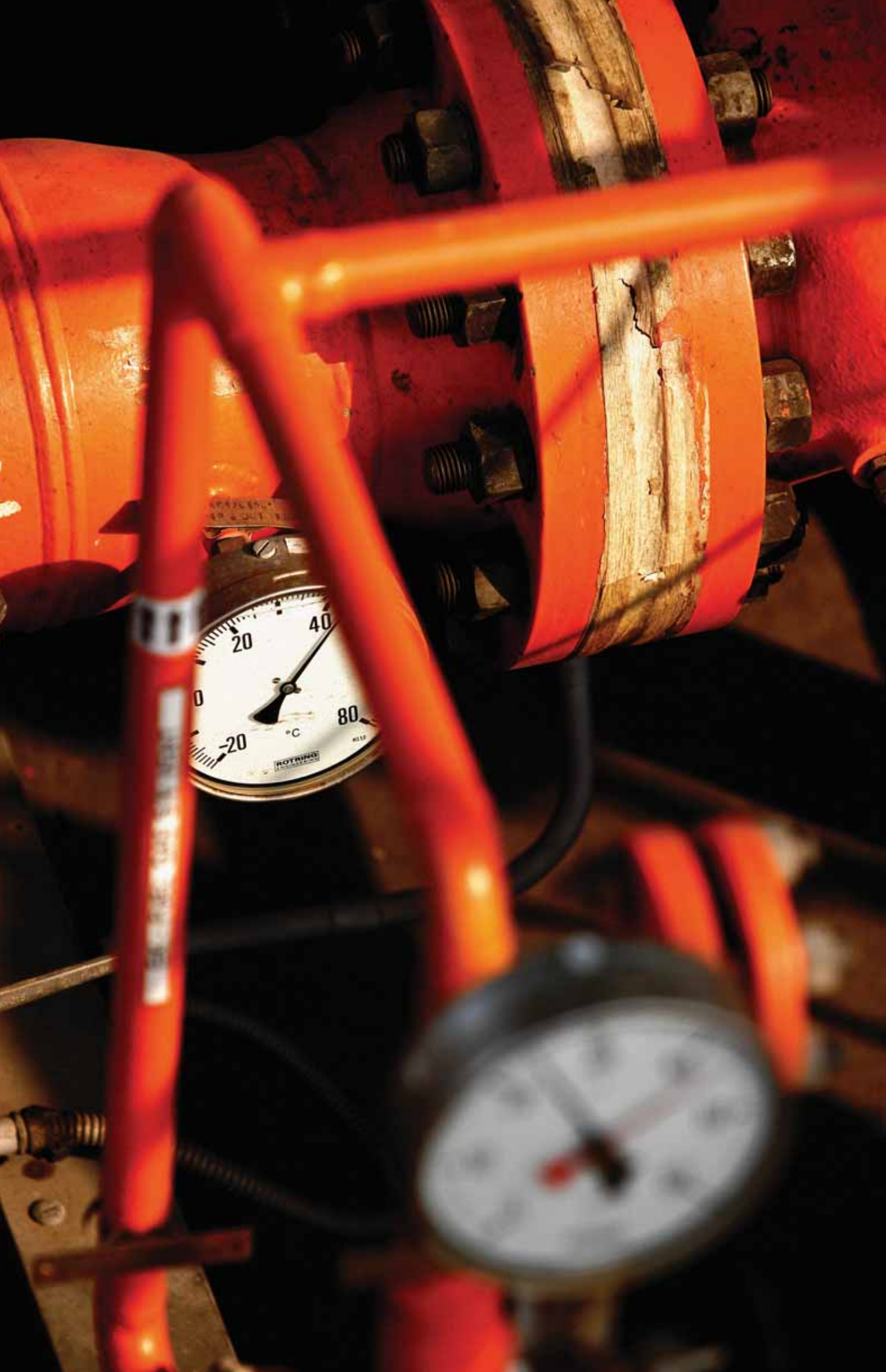
### Ensuring Supply Reliability and Diversity

EMA has moved to consider added diversification of gas supplies from non-traditional sources to enhance Singapore's continued fuel supply reliability.

Tokyo Gas Engineering Co Ltd was appointed in January 2005 to conduct a year-long study into the technical and economic feasibility of importing LNG into Singapore. The study will also identify suitable sites for offloading as well as on-site stockpiling, transport and other infrastructure to support the LNG import.

If found feasible, LNG imports will enhance our long term fuel supply reliability and security by access to established markets and provide the benefits of competitive prices from alternative suppliers.

Licensee Type	Licensee
Gas Transmission	PowerGas Ltd
Gas Supply	City Gas Pte Ltd Gas Supply Pte Ltd SembCorp Gas Pte Ltd



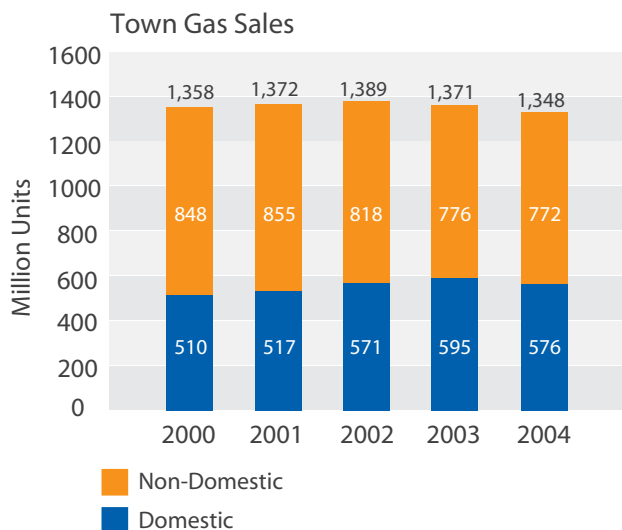
### Staying Prepared for Crisis

Singapore experienced a major power outage on 29 June 2004 due to a failure on the West Natuna natural gas supply. Power was fully restored within two hours.

Learning from the incident, EMA had together with industry partners, reviewed and improved on the Standing Operating Procedures to reduce the probability of a recurrence. The industry also took it upon itself to introduce additional measures to enhance reliability of electricity supply.

To reduce their dependence on one source of gas, most generating companies had since implemented schemes to enable them to draw gas from a second source. In addition, all affected companies had also identified the reasons why the switch from gas to diesel failed and had implemented remedial measures.

After the incident, ConocoPhillips, the operator of the gas reception facility that failed, had also identified several enhancement measures. About 80% of these measures have been implemented as at June 2005 and full implementation is targetted for October 2005. The Energy System Review Committee (ESRC), which was set up by the Government, has studied the root causes of the incident and recommended measures to strengthen the energy system. Many of ESRC's recommendations affirm the measures and plans already in place. EMA is already implementing ESRC's other recommendations which included the carrying out of a high level critique of the Gas Network Code and a cost-benefit study to implement the interconnection of our gas system.



# Power System Operation



Monitoring and coordinating the uninterrupted flow of electricity island-wide, the Power System Operation Division is a key part of a critical infrastructure.

## Ensuring a Reliable and Secure System



The Power System Operation Division (PSOD) is responsible for operating the electricity system and ensuring there are plans and procedures to deal with transmission problems when they arise.

Monitoring and controlling the flow of electricity island-wide, Power System Operation is a key part of the electricity infrastructure.

### **Building In-house Capability**

Ensuring the smooth operation of the electricity system requires a high level of commitment to training excellence that develops the competence of our staff.

In August 2004, PSOD was certified to ISO 9001:2000 standard for its system control function. This affirms the robustness of PSOD's internal procedures, technical competence and effectiveness in maintaining a secure and reliable power system.

### **Building Crisis Resilience**

While the overall robustness, reliability and availability of the power system in Singapore stands in good comparison to best practice benchmarks worldwide, the PSOD does not take the reliability of the energy system for granted.

Believing that preparedness is the best policy against an unlikely emergency, the PSOD regularly conducts training and exercises for its staff and industry partners to build, test and sharpen industry readiness for dealing with such events.

As part of its routine emergency preparedness training, the PSOD conducts an annual crisis response exercise with industry partners. The exercise tests the crisis response procedures and reaction times of all the energy industry players in a simulated power emergency situation.

## Financial Performance and Highlights FY 2004/05

The overall financial performance of the Group for the year ending 31 March 2005 was satisfactory. Total income was \$68.142 million. Overall Group surplus after non-operating income and taxes, contribution to Government Consolidated Fund (GCF) and minority interests was \$9.596 million. This was 23.9% higher than the previous year's surplus of \$7.742 million.

Capital expenditure for the Group incurred for the Group was \$4.780 million. This included \$4.192 million on the enhancement of subsidiary's computer systems, \$0.209 million spent on the development of the gas market, and \$0.379 million for other purchases such as personal computers, furniture and fittings and office equipment.

### FINANCIAL HIGHLIGHTS

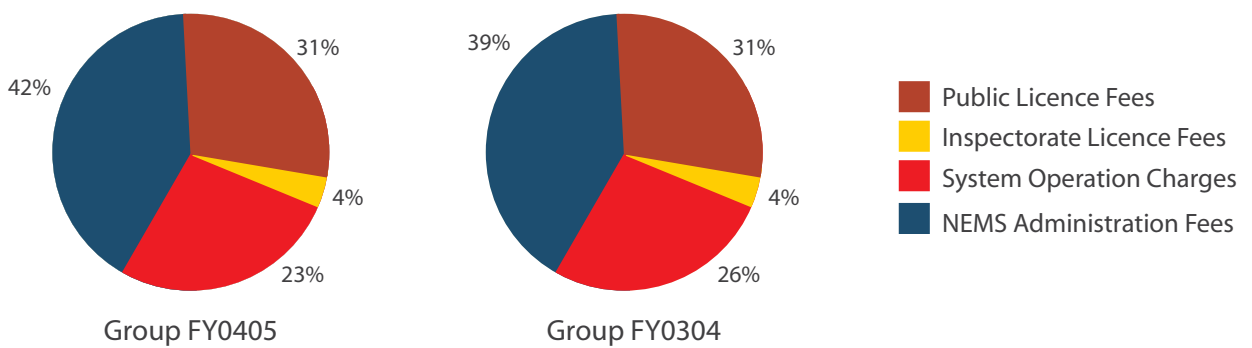
	<b>Group FY0405 S\$ m</b>	<b>Group FY0304 S\$ m</b>	<b>Authority FY0405 S\$ m</b>	<b>Authority FY0304 S\$ m</b>
Operating Income	68.142	65.718	41.876	42.178
Operating Expenses	55.737	55.519	34.091	34.448
Operating Surplus	12.405	10.199	7.785	7.730
Non-operating Income	1.442	0.907	2.548	0.901
Government grant	0.513	-	0.513	-
Surplus after Contribution to GCF and Income Tax	11.488	8.712	8.940	6.732
Minority Interests (MI)	1.892	0.970	-	-
Surplus after Contribution to GCF/ Income Tax and MI	9.596	7.742	8.940	6.732

### OPERATING INCOME

Operating Income for the year totalled \$68.142 million. The breakdown is shown below:-

	<b>Group FY0405 S\$ m</b>	<b>Group FY0304 S\$ m</b>	<b>Authority FY0405 S\$ m</b>	<b>Authority FY0304 S\$ m</b>
Public Licence Fees	20.990	20.200	23.190	22.370
Inspectorate Licence Fees	2.903	2.850	2.903	2.850
System Operation Charges	15.783	16.958	15.783	16.958
NEMS Administration Fees	28.466	25.710	-	-
<b>Operating Income</b>	<b><u>68.142</u></b>	<b><u>65.718</u></b>	<b><u>41.876</u></b>	<b><u>42.178</u></b>

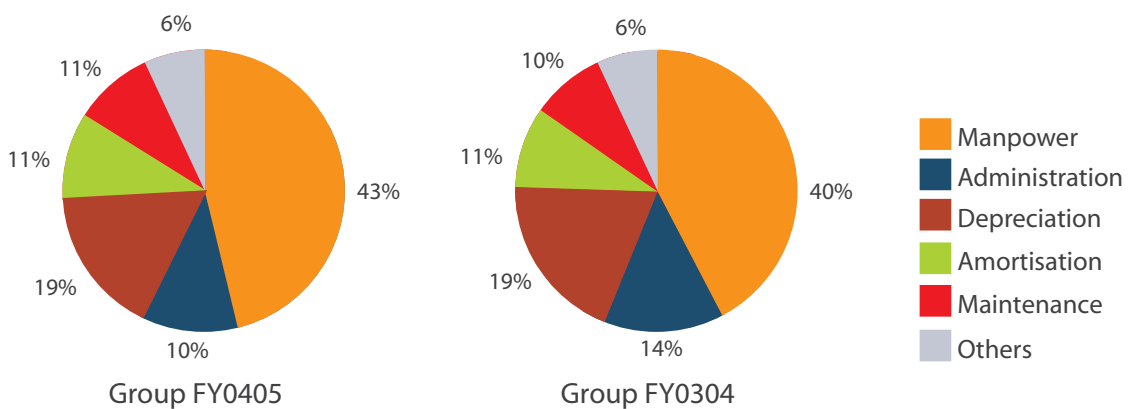
### OPERATING INCOME



### OPERATING EXPENSES

Operating Expenses for the year were \$55.737 million and \$34.091 million for the Group and Authority respectively.

	Group FY0405 S\$ m	Group FY0304 S\$ m	Authority FY0405 S\$ m	Authority FY0304 S\$m
Manpower	23.997	22.389	16.086	15.265
Administration	5.462	7.926	2.696	4.663
Depreciation	10.596	10.483	5.383	5.391
Amortisation	6.304	5.908	5.001	4.604
Maintenance	6.112	5.334	2.433	1.753
Others	3.266	3.479	2.492	2.772
<b>Total Operating Expenses</b>	<b>55.737</b>	<b>55.519</b>	<b>34.091</b>	<b>34.448</b>



## Performance of Public Licensees (2004)

Service Dimension	Service Indicator	Responsibility of	Service Standard	Performance %	Target %
Availability of Supply	a) Minimum duration of notice of interruption of electricity or piped gas supply	SP PowerGrid Ltd	7 days	100.00	( 95)
	b) Time taken to restore gas supply following outage caused by network fault	PowerGas Ltd PowerGas Ltd	2 working days 24 hours	100.00 100.00	( 95) ( 95)
	c) Time taken to restore electricity supply following outage caused by network fault	SP PowerGrid Ltd SP PowerGrid Ltd	3 hours 24 hours	96.6* 100*	( 93) ( 98)
	d) Time taken to restore supply for each power failure due to failure of, damage to, or operation of equipment or cables rated at 22kV and below	SP PowerGrid Ltd SP PowerGrid Ltd	3 hours Exceeds 2 hours but does not exceed 3 hours	100** 3.7**	(=100) ( 10)
Quality of Supply	a) Time taken to rectify voltage complaint or limit violation	SP PowerGrid Ltd	2 days	100.00	( 95)
	b) Time taken to correct voltage complaint which requires network reinforcement	SP PowerGrid Ltd	6 months	No Complaint	( 99)
	c) Time taken to respond to reported piped gas leaks	PowerGas Ltd City Gas Pte Ltd	1 hour 1 hour	100.00 100.00	(=100) (=100)
Providing Supply	a) Time taken to process electricity supply application and to reply to applicant	SP Services Ltd	14 days	99.00	( 85)
	b) Time taken to implement electrification scheme requiring new substations after take-over of substation (up to 22kV)	SP PowerGrid Ltd	10 weeks	97.93	( 90)
	c) Time taken to implement service connection requiring cable installation work after premises to be supplied is ready to receive cable	SP PowerGrid Ltd	6 weeks	99.81	( 90)
	d) Lead time taken to inspect large electrical installation (supply capacity greater than 45kVA) and turn-on electricity supply upon request	SP Services Ltd	7 working days	100.00	( 90)
	e) Lead time taken to test small electrical installation (supply capacity less than or equal to 45kVA) and turn-on electricity supply upon request	SP Services Ltd	10 days	99.60	( 90)
	f) Time taken to inspect pre-tested electrical installation and turn-on electricity supply upon request after opening of account	SP Services Ltd	3 working days	100.00	( 98)
	g) Waiting time at site for appointment to turn-on or cut-off electricity or piped gas supply	SP Services Ltd City Gas Pte Ltd	1.5 hours 2 hours	100.00 99.20	( 90) ( 99)
	h) Time taken to process and approve submission of plans for application of supply of piped gas to new large commercial complexes, condominiums and developmental projects	City Gas Pte Ltd	3 weeks	100.00	( 99)
	i) Time taken to process and approve submission of plans for application of supply of piped gas to new restaurants, food courts, coffee houses in existing buildings, eating houses, hawker centres etc	City Gas Pte Ltd	2 weeks	100.00	( 99)
	j) Time taken to carry out piped gas service connection from the date when customer's premises is ready to receive connection and where the premises is within piped gas supply network	City Gas PteLtd	6 weeks	100.00	( 90)
Customer Contact	a) Time taken to reply to written enquiry or complaint	SP PowerGrid Ltd City Gas Pte Ltd SP Services Ltd <sup>1</sup> SP Services Ltd <sup>2</sup>	7 working days 7 working days 7 working days 7 working days	100.00 100.00 100.00 96.50	( 95) ( 95) ( 95) ( 95)
	b) Queuing time at customer service counter (enquiries and opening/closing of accounts)	SP Services Ltd	20 minutes	95.90	( 90)
	c) Time taken by customer service officer to pick up ringing telephone	SP Services Ltd	30 seconds	91.10	( 90)
Metering Services	a) Time taken to attend to meter problem upon notification	SP PowerGrid Ltd SP Services Ltd	8 days 8 days	100.00 99.70	( 95) ( 95)
	b) Time taken to respond (make appointment, visit or reply) to metering problem or dispute upon notification	City Gas Pte Ltd SP Services Ltd	5 working days 5 working days	100.00 100.00	( 95) ( 95)
	c) Time interval between successive reading of billing meter(s)	SP Services Ltd	2 monthly	100.00	( 95)

\* Figures reflective of performance from Jan to Jul 2004. These 2 performance standards were revoked on 31 Jul 2004

\*\* Figures reflective of performance from Aug to Dec 04. These 2 performance standards were introduced on 1 Aug 2004

<sup>1</sup> Performance indicator for supply of electricity.

<sup>2</sup> Performance indicator for utilities support services.

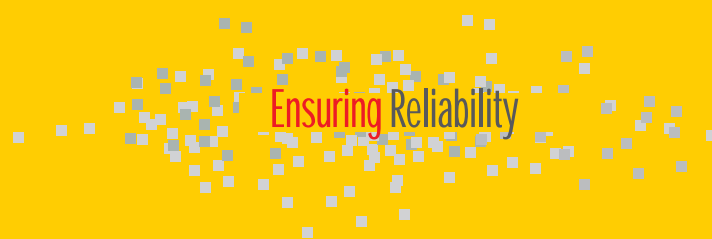
## TARIFFS AS AT 31 MARCH 2005

## Electricity Tariffs (SP Services Ltd)

	Tariff Category		
	Extra High Tension (66kV & above)	High Tension (22kV & 6.6kV)	Low Tension (including residential)
<b>Usage Charge (cents per kWh)</b>			
Peak Period (7.00am - 11.00pm)	12.64	13.54	16.73
Off-Peak Period (11.00pm - 7.00am)	7.77	7.87	16.73
<b>Reactive Power Charge</b> (cents per chargeable kVARh)	0.48	0.59	N.A
<b>Capacity Charge (per kW per month)</b>			
Contracted Capacity Charge	\$6.74	\$7.04	N.A
Uncontracted Capacity Charge	\$10.11	\$10.56	N.A

## Gas Tariffs (City Gas Pte Ltd)

Category	Units per month	cents per kWh
General Tariff	All units	15.70
Bulk Tariff A	All Units Minimum consumption: 1,000 units per month	14.70
Bulk Tariff B	All Units Minimum consumption: 50,000 units per month	14.20



Ensuring Reliability





Energy Market Authority

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Ensuring Reliability



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**ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
AUDITORS' REPORT TO THE MEMBERS OF ENERGY MARKET AUTHORITY OF SINGAPORE**

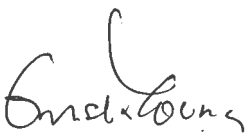
We have audited the accompanying accounts of Energy Market Authority of Singapore (the "Authority") and of the Authority and its subsidiary company (the "Group") as set out on pages 2 to 24 for the financial year ended 31 March 2005. These accounts are the responsibility of the Authority's management. Our responsibility is to express an opinion on these accounts based on our audit.

We conducted our audit in accordance with Singapore Standards on Auditing. Those Standards require that we plan and perform the audit to obtain reasonable assurance about whether the accounts are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the accounts. An audit also includes assessing the accounting principles used and significant estimates made by the Authority's management, as well as evaluating the overall accounts presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion,

- (a) the accounts are properly drawn up in accordance with the provisions of the Energy Market Authority of Singapore Act (the "Act") and Singapore Financial Reporting Standards as stipulated in the Finance Circular in relation to accounting standards for Statutory Boards issued by Ministry of Finance in February 2005 so as to present fairly in all material aspects the state of affairs of the Authority and of the Group as at 31 March 2005, and the results, changes in equity and cash flows of the Authority and of the Group for the financial year ended on that date; and
- (b) the accounting and other records required by the Act to be kept by the Authority have been properly kept in accordance with the provisions of the Act.

During the course of our audit, nothing came to our notice that caused us to believe that the receipt, expenditure and investments of monies and the acquisition and disposal of assets by the Authority during the financial year have not been in accordance with the provisions of the Act.



ERNST & YOUNG  
Certified Public Accountants

Singapore  
8 July 2005

ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
**STATEMENTS OF INCOME AND EXPEDITURE**  
FOR THE YEAR ENDED 31 MARCH 2005

	Note	Group		Authority	
		2004/05 S\$'000	2003/04 S\$'000	2004/05 S\$'000	2003/04 S\$'000
<b>Operating Income</b>	3	68,142	65,718	41,876	42,178
Less:					
<b>Operating Expenses</b>	3	(55,737)	(55,519)	(34,091)	(34,448)
<b>Operating Surplus</b>		12,405	10,199	7,785	7,730
<b>Non-Operating Income</b>	4	1,442	907	2,548	901
<b>Surplus before Government Grant</b>		13,847	11,106	10,333	8,631
Add:					
<b>Government Grant</b>	3.2	513	-	513	-
<b>Surplus before Contribution to Government Consolidated Fund (GCF) and Income Tax</b>		14,360	11,106	10,846	8,631
Less:					
<b>Contribution to GCF</b>	5	(1,906)	(1,899)	(1,906)	(1,899)
<b>Income Tax</b>	6	(966)	(495)	-	-
		(2,872)	(2,394)	(1,906)	(1,899)
<b>Surplus after Contribution to GCF and Income Tax</b>		11,488	8,712	8,940	6,732
Less:					
<b>Minority Interests</b>		(1,892)	(970)	-	-
<b>Net Surplus after GCF, Income Tax and Minority Interests</b>		9,596	7,742	8,940	6,732



Chiang Chie Foo  
Chairman



Khoo Chin Hean  
Chief Executive

8 July 2005

The accounting policies and explanatory notes on pages 6 to 24 form an integral part of these accounts.

ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
**BALANCE SHEETS**

AS AT 31 MARCH 2005

	Note	Group		Authority	
		2004/05	2003/04	2004/05	2003/04
<b>Capital Account</b>	7	105,541	105,541	105,541	105,541
<b>Accumulated Surplus</b>		31,069	21,473	28,746	19,806
		<u>136,610</u>	<u>127,014</u>	<u>134,287</u>	<u>125,347</u>
<b>Minority Interests</b>		7,083	6,453	-	-
		<u>143,693</u>	<u>133,467</u>	<u>134,287</u>	<u>125,347</u>
<b>Represented by:</b>					
<b>Non-Current Assets</b>					
Fixed assets	8	13,808	19,833	6,434	11,526
Intangible assets	9	22,874	29,184	12,771	17,778
Investment in subsidiary company	10	-	-	5,100	5,100
Other non-current assets	11	506	458	254	456
		<u>37,188</u>	<u>49,475</u>	<u>24,559</u>	<u>34,860</u>
<b>Current Assets</b>					
Other receivables	12	5,612	3,938	2,444	2,236
Cash and receivables under NEMS	20	158,734	142,762	-	-
Cash and cash equivalents	13	119,555	106,875	113,826	97,796
		<u>283,901</u>	<u>253,575</u>	<u>116,270</u>	<u>100,032</u>
Less:					
<b>Current Liabilities</b>					
Other payables	14	(14,897)	(20,430)	(4,635)	(7,646)
Payables under NEMS	20	(158,734)	(142,762)	-	-
Provision for contribution to Government Consolidated Fund	5	(1,907)	(1,899)	(1,907)	(1,899)
		<u>(175,538)</u>	<u>(165,091)</u>	<u>(6,542)</u>	<u>(9,545)</u>
<b>Net Current Assets</b>		108,363	88,484	109,728	90,487
<b>Non-Current Liabilities</b>					
Bank loan	15	-	(3,600)	-	-
Deferred tax liabilities	16	(1,858)	(892)	-	-
		<u>143,693</u>	<u>133,467</u>	<u>134,287</u>	<u>125,347</u>

The accounting policies and explanatory notes on pages 6 to 24 form an integral part of these accounts.

ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
**STATEMENTS OF CHANGES IN EQUITY**  
FOR THE YEAR ENDED 31 MARCH 2005

	Capital Account S\$'000	Accumulated Surplus S\$'000	Total S\$'000
<b>GROUP</b>			
Balance as at 31 March 2003	105,541	13,731	119,272
Net Surplus for the year	-	7,742	7,742
Balance as at 31 March 2004	<u>105,541</u>	<u>21,473</u>	<u>127,014</u>
Net Surplus for the year	-	9,596	9,596
Balance as at 31 March 2005	<u>105,541</u>	<u>31,069</u>	<u>136,610</u>
<b>AUTHORITY</b>			
Balance as at 31 March 2003	105,541	13,074	118,615
Net Surplus for the year	-	6,732	6,732
Balance as at 31 March 2004	<u>105,541</u>	<u>19,806</u>	<u>125,347</u>
Net Surplus for the year	-	8,940	8,940
Balance as at 31 March 2005	<u>105,541</u>	<u>28,746</u>	<u>134,287</u>

The accounting policies and explanatory notes on pages 6 to 24 form an integral part of these accounts.

ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
**CONSOLIDATED STATEMENT OF CASHFLOWS**  
FOR THE YEAR ENDED 31 MARCH 2005

	2004/05 S\$'000	2003/04 S\$'000
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
Surplus before Grant and Contribution to Government Consolidated Fund and Income Tax	13,847	11,106
<b>Adjustments for Non-Cash and Non-Operating Items:</b>		
- Depreciation of fixed assets	10,596	10,483
- Amortisation of intangible assets	6,304	5,908
- Profit on sale of fixed assets	(1)	(5)
- Intangible assets written off	215	-
- Interest income	(1,205)	(790)
- Interest expense	118	239
<b>Operating Cash Flows before Working Capital Changes</b>	<u>29,874</u>	<u>26,941</u>
- (Increase)/Decrease in other receivables	(1,044)	1,436
- Decrease in NEMS receivables	(15,972)	27,227
- Decrease in NEMS payables	15,972	(27,227)
- Decrease in other payables	(4,281)	(173)
- Decrease in payables to SEP market participants	-	(2,880)
- Increase/ (Decrease) in payable to related parties	53	(45)
<b>Cash Generated from Operations</b>	<u>24,602</u>	<u>25,279</u>
- Payment to Government Consolidated Fund	(1,899)	(1,592)
<b>Net Cash Flows from Operating Activities</b>	<u><b>22,703</b></u>	<u><b>23,687</b></u>
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
- Purchase of fixed assets	(4,571)	(2,441)
- Expenditure on intangible assets	(209)	(1,114)
- Proceeds from sale of fixed assets	1	5
- Interest income received	1,048	865
<b>Net Cash Flows used in Investing Activities</b>	<u><b>(3,731)</b></u>	<u><b>(2,685)</b></u>
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
- Dividends paid by subsidiary company to minority shareholder	(874)	-
- Interest paid	(118)	(239)
- Repayment of bank borrowings	(4,800)	(3,600)
- Repayment of loan from minority shareholder	(500)	(500)
<b>Net Cash Flows used in Financing Activities</b>	<u><b>(6,292)</b></u>	<u><b>(4,339)</b></u>
<b>Net Increase In Cash And Cash Equivalents</b>	12,680	16,663
Cash and Cash Equivalents as at 1 April	106,875	90,212
<b>Cash and Cash Equivalents as at 31 March</b>	<u><b>119,555</b></u>	<u><b>106,875</b></u>

The accounting policies and explanatory notes on pages 6 to 24 form an integral part of these accounts.

**ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
NOTES TO THE ACCOUNTS**

AS AT 31 MARCH 2005

**1 GENERAL**

Energy Market Authority of Singapore ("EMA" or "the Authority") is a statutory board established in the Republic of Singapore under the Energy Market Authority of Singapore Act (Chapter 92B). EMA's registered office and principal place of operation is at 111 Somerset Road #15-05, Singapore 238164.

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.

The principal activity of the subsidiary company, Energy Market Company Pte Ltd ("EMC") is that of administration and operation of the National Electricity Market of Singapore ("NEMS"), previously known as the Singapore Wholesale Electricity Market.

EMC was issued with a Market Operator's licence (Licence No. EMA/MC/001) by the Energy Market Authority of Singapore on 16 September 2002 to administer and operate, for an initial period of 10 years from 1 January 2003, the launch date of NEMS. The NEMS is governed by the Singapore Electricity Market Rules.

As at 31 March 2005, there were 219 and 165 (2004: 219 and 167) employees in the Group and Authority respectively.

**2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

The Authority is required under Section 13 of the Energy Market Authority of Singapore Act (Chapter 92B) to exercise its powers and perform its functions to ensure that the total revenues of the Authority are sufficient, taking one financial year with another, to meet its total outgoings properly chargeable to the revenue account, including depreciation and interest on capital and to meet a reasonable proportion of the cost of the development of the services of the Authority.

The Authority is also required under the Third Schedule of the Energy Market Authority of Singapore Act (Chapter 92B) to keep separate accounts for the regulatory functions from its other undertakings. In determining the significant accounting policies and the format of the accounts to be adopted, the Authority has taken into consideration the special nature of its objectives and activities.

A summary of the significant policies, which have been adopted in the preparation of these accounts, are detailed below :-

**ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY**

**NOTES TO THE ACCOUNTS**

AS AT 31 MARCH 2005

**2.1 Basis of Accounting**

The accounts of the Authority have been prepared on a historical cost basis and in accordance with the EMA Act and Singapore Financial Reporting Standards as stipulated in the Finance Circular in relation to accounting standards for Statutory Boards issued by Ministry of Finance in February 2005.

The accounting policies applied by the Authority and its subsidiary company are consistent with those used in the previous financial year.

The accounts are presented in Singapore Dollars (S\$).

**2.2 Basis of Consolidation**

The consolidated accounts include the accounts of the Authority and its subsidiary company, after elimination of material transactions and balances between the Authority and its subsidiary company. The equity and net surplus attributable to the minority shareholders' interest are shown separately in the consolidated balance sheet and consolidated statement of income and expenditure. Details of the Authority's subsidiary company are shown in Note 10.

The accounts of the subsidiary company are prepared for the same reporting period as the Authority, which ends on 31 March using uniform accounting policies for like transactions and other events in similar circumstances.

**2.3 Minority Interests**

Minority Interests shown in the balance sheet represents the minority shareholder's share of the net equity in the subsidiary company.

**2.4 Foreign Currency Translation**

Transactions in foreign currencies during the year are measured in S\$ and recorded at exchange rates closely approximating to those ruling at transaction dates. Monetary assets and liabilities denominated in non-S\$ currencies are translated into S\$ equivalents using year-end spot foreign exchange rates. Non-monetary assets and liabilities are translated using exchange rates that existed when the values were determined. Exchange differences on foreign currency transactions are included in the statements of income and expenditure.

**ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
NOTES TO THE ACCOUNTS**

AS AT 31 MARCH 2005

**2.5 Fixed Assets and Depreciation**

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 book values.

Fixed assets are stated at cost less accumulated depreciation and any impairment in value. All items of fixed assets are initially recorded at cost.

The initial cost of fixed assets comprises its purchase price, and any directly attributable costs of bringing the asset to its working condition and location for its intended use. Expenditure incurred after the fixed assets have been put into operation, such as repairs and maintenance and overhaul costs, is normally charged to the statement of income and expenditure in the period in which the costs are incurred. Where the expenditure results in an increase in the future economic benefits, it is capitalised as an additional cost of fixed assets.

Depreciation is computed on a straight-line basis over the estimated useful life of the asset as follows:

	Years
Computer system	3 - 5
Microcomputer & Software	3
Furniture & fittings	3
Office / Works equipment	3
Vehicle	6/ 10

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

The useful life and depreciation method are reviewed periodically to ensure that the method and period of depreciation are consistent with the expected pattern of economic benefits from items of fixed assets.

**2.6 Intangible Assets**

Development costs incurred by the Authority which relate to the restructuring of the utilities industry in Singapore and development costs incurred by the subsidiary company which relate to the design and testing of the settlement system for the NEMS are recognised as an asset to the extent that it is expected that such assets will generate future economic benefits.

The Authority amortises the deferred development costs upon completion of the consultancy work and implementation of the regulatory framework in the utilities industry on a straight-line basis over their estimated economic useful lives.

The subsidiary company amortises the deferred development costs from the date of the launch of the NEMS on a straight-line basis over the market licence period of 10 years.

**ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
NOTES TO THE ACCOUNTS**

AS AT 31 MARCH 2005

**2.7 Investment In Subsidiary Company**

A subsidiary company is a company in which the Authority, directly or indirectly, holds more than 50% of the issued share capital, or controls more than half of the voting power, or controls the composition of the board of directors.

The investment cost in the subsidiary company is stated in the Authority's balance sheet at cost less any impairment loss.

**2.8 Other Receivables**

Other receivables are recognised and carried at original invoice amount less an allowance for any uncollectible amounts. An estimate for doubtful debts is made when collection of the full amount is no longer probable. Bad debts are written off as incurred.

**2.9 Cash and Cash Equivalents**

Cash and cash equivalents consist of cash in hand and short-term deposits with banks. Cash in hand and short-term deposits which are held to maturity are carried at cost.

For the purposes of the Consolidated Statement of Cash Flows, cash and cash equivalents consist of cash in hand and deposits in banks.

**2.10 Other Payables**

Liabilities for other payables are carried at cost which is the fair value of consideration to be paid in the future for goods and services received.

**2.11 Accruals**

Accruals are made when the Group has a present obligation (legal or constructive) as a result of a past event, and it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. Accruals are reviewed at each balance sheet date and adjusted to reflect the current best estimates.

**2.12 Deferred Taxation**

Deferred income tax is provided by the subsidiary company, using the liability method, on all temporary differences at the balance sheet date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes.

Deferred tax assets are recognised for all deductible temporary differences, carry-forward of unused tax assets and unused tax losses, to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, carry-forward of unused tax assets and unused tax losses can be utilised.

**ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
NOTES TO THE ACCOUNTS**

AS AT 31 MARCH 2005

Deferred tax assets and liabilities are measured using the tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled based on tax rates enacted or substantively enacted at the balance sheet date.

At each balance sheet date, the subsidiary company re-assesses unrecognised deferred tax assets and the carrying amount of deferred tax assets. It recognises a previously unrecognised deferred tax asset to the extent that it has become probable that future taxable profit will allow the deferred tax asset to be recovered. The subsidiary company conversely reduces the carrying amount of a deferred tax asset to the extent that it is no longer probable that sufficient taxable profit will be available to allow the benefit of part or all of the deferred tax asset to be utilised.

**2.13 Income Recognition**

Revenue is recognised to the extent that it is probable that the economic benefits will flow to the Group and the revenue can be reliably measured. The following specific recognition criteria must also be met before revenue is recognised:

- (a) Licence fees from public licensees are recognised as income on an accrual basis.
- (b) Interest income is recognised on an accrual basis.
- (c) Profit and loss on disposal of fixed assets is recognised on receipt of sale proceeds.
- (d) Subsidiary company's NEMS administration fees is recognised when service is rendered.

**2.14 Government Grant**

Government grant is recognised at its fair value where there is reasonable assurance that the grant will be received and all attaching conditions will be complied with. When the grant relates to an expense item, it is recognised in the statements of income and expenditure over the periods necessary to match it on a systematic basis, to the costs, which it is intended to compensate. Where the grant relates to an asset, the fair value is credited to a deferred income account and is released to the statements of income and expenditure over the expected useful life of the relevant asset by equal annual instalments.

**2.15 Employee Benefits**

**(i) Defined contribution plans**

Contributions to the Central Provident Fund ("CPF") scheme in Singapore, a defined contribution pension scheme, are recognised as an expense in the period in which the related service is performed.

**(ii) Employee leave entitlement**

Employees' entitlement to annual leave is recognised when it accrues to the employees. A provision is made for the estimated liability for unconsumed leave as a result of services rendered by employees up to the balance sheet date.

**ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
NOTES TO THE ACCOUNTS**

AS AT 31 MARCH 2005

**2.16 Leases**

Leases where the lessor effectively retains substantially all the risks and benefits of ownership of the leased term, are classified as operating leases. Operating lease payments are recognised as an expense in the statements of income and expenditure on a straight-line basis over the lease term.

**2.17 Related Parties**

Parties are considered to be related if one party has the ability, directly or indirectly, to control the other party or exercise significant influence over the other party in making financial and operating decisions. Parties are also considered to be related if they are subject to common control or common significant influence. Related parties may be individuals or corporate entities.

**2.18 Impairment Of Assets**

Assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Whenever the carrying amount of an asset exceeds its recoverable amount, an impairment loss is recognised in the statements of income and expenditure or treated as a revaluation decrease for assets carried at revalued amount to the extent that the impairment loss does not exceed the amount held in the revaluation surplus for that same asset.

Reversal of impairment losses recognised in prior years is recorded when there is an indication that the impairment losses recognised for the asset no longer exist or have decreased. The reversal is recorded in income or as a revaluation increase. However, the increased carrying amount of an asset due to a reversal of an impairment loss is recognised to the extent it does not exceed the carrying amount that would have been determined (net of amortisation or depreciation) had no impairment loss been recognised for that asset in prior years.

**2.19 Borrowing Costs**

Borrowing costs of subsidiary company are expensed as incurred.



**ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
NOTES TO THE ACCOUNTS**

AS AT 31 MARCH 2005

**3 SURPLUS BEFORE CONTRIBUTION TO GOVERNMENT CONSOLIDATED FUND  
(GCF) AND INCOME TAX (cont'd)**

**3.3 Manpower expenses include the following:**

	Group		Authority	
	2004/05	2003/04	2004/05	2003/04
	S\$'000	S\$'000	S\$'000	S\$'000
Authority members' allowance	72	70	72	70
Directors' fees of subsidiary company	265	265	-	-
Salaries and related expenses	19,408	17,425	13,879	12,917
CPF contributions	<u>1,623</u>	<u>1,759</u>	<u>1,192</u>	<u>1,298</u>

**3.4 Administration expenses include the following:**

	Group		Authority	
	2004/05	2003/04	2004/05	2003/04
	S\$'000	S\$'000	S\$'000	S\$'000
Interest expense on short term loan taken by subsidiary company	<u>118</u>	<u>239</u>	<u>-</u>	<u>-</u>

**4 NON-OPERATING INCOME**

	Group		Authority	
	2004/05	2003/04	2004/05	2003/04
	S\$'000	S\$'000	S\$'000	S\$'000
Interest earned on employee loans	18	31	18	31
Interest earned on bank deposits	1,187	759	1,124	732
Interest earned on loan to subsidiary company	-	-	6	42
Dividend income from subsidiary company	-	-	1,314	-
Profit on disposal of fixed assets	1	-	1	-
Penalty charges paid by market participants	-	14	-	-
Others	<u>236</u>	<u>103</u>	<u>85</u>	<u>96</u>
	<u>1,442</u>	<u>907</u>	<u>2,548</u>	<u>901</u>

**5 CONTRIBUTION TO GOVERNMENT CONSOLIDATED FUND**

In lieu of income tax, the Authority is required to make contribution to the Government Consolidated Fund in accordance with the Statutory Corporations (Contributions to Consolidated Fund) Act. This contribution is based on the net surplus of the Authority for the year ended 31 March 2005, at the prevailing Singapore corporate income tax rate of 20% for Year of Assessment 2005 (2004: 22%).

**ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
NOTES TO THE ACCOUNTS**

AS AT 31 MARCH 2005

**6 INCOME TAX**

The income tax relates solely to the subsidiary company which is a private limited company incorporated in Singapore and is liable to pay income tax under the Singapore Income Tax Act.

The component of income tax expense for the year ended 31 March is :

	<b>GROUP</b>	
	<b>2004/05</b>	<b>2003/04</b>
	S\$'000	S\$'000
Deferred (Note 16)	<u>966</u>	<u>495</u>

A reconciliation of the statutory rate to the subsidiary company's effective tax rate applicable to profit before income tax for the financial years ended 31 March was as follows :

	<b>GROUP</b>	
	<b>2004/05</b>	<b>2003/04</b>
Singapore statutory corporate tax rate	20.0%	20.0%
Effect of change in tax rate	-	-1.5%
Non-deductible expenses	1.0%	3.7%
Others	-1.0%	-2.2%
Effective tax rate	<u>20.0%</u>	<u>20.0%</u>

**7 CAPITAL ACCOUNT**

The Capital Account comprises the reserves transferred from the Public Utilities Board to the Authority for its establishment and for the financing of fixed and development assets acquisitions.

**ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
NOTES TO THE ACCOUNTS**

AS AT 31 MARCH 2005

**8 FIXED ASSETS**

8.1 Fixed assets comprise:

	As at 1 April 2004 S\$'000	Additions S\$'000	Disposals S\$'000	As at 31 March 2005 S\$'000
<b>GROUP</b>				
<b>At Cost</b>				
Computer Systems	39,288	4,235	(10)	43,513
Microcomputer & Software	666	120	-	786
Vehicles	320	-	-	320
Furniture & Fittings	1,400	91	-	1,491
Office / Works Equipment	465	125	(1)	589
	<u>42,139</u>	<u>4,571</u>	<u>(11)</u>	<u>46,699</u>
<b>Accumulated Depreciation</b>				
Computer Systems	20,176	9,978	(10)	30,144
Microcomputer & Software	423	182	-	605
Vehicles	305	9	-	314
Furniture & Fittings	1,067	232	-	1,299
Office / Works Equipment	335	195	(1)	529
	<u>22,306</u>	<u>10,596</u>	<u>(11)</u>	<u>32,891</u>
<b>AUTHORITY</b>				
<b>At Cost</b>				
Computer Systems	25,214	44	(10)	25,248
Microcomputer & Software	666	120	-	786
Vehicles	320	-	-	320
Furniture & Fittings	391	45	-	436
Office / Works Equipment	176	82	(1)	257
	<u>26,767</u>	<u>291</u>	<u>(11)</u>	<u>27,047</u>
<b>Accumulated Depreciation</b>				
Computer Systems	14,041	5,108	(10)	19,139
Microcomputer & Software	423	182	-	605
Vehicles	305	9	-	314
Furniture & Fittings	350	46	-	396
Office / Works Equipment	122	38	(1)	159
	<u>15,241</u>	<u>5,383</u>	<u>(11)</u>	<u>20,613</u>
	<b>GROUP</b>		<b>AUTHORITY</b>	
	<b>2004/05</b>	<b>2003/04</b>	<b>2004/05</b>	<b>2003/04</b>
<b>Net Book Value</b>	<b>S\$'000</b>	<b>S\$'000</b>	<b>S\$'000</b>	<b>S\$'000</b>
Computer Systems	13,369	19,112	6,109	11,173
Microcomputer & Software	181	243	181	243
Vehicles	6	15	6	15
Furniture & Fittings	192	333	40	41
Office / Works Equipment	60	130	98	54
	<u>13,808</u>	<u>19,833</u>	<u>6,434</u>	<u>11,526</u>
8.2 <b>Depreciation</b>				
Charged to Operating Expenses	<u>10,596</u>	<u>10,483</u>	<u>5,383</u>	<u>5,391</u>

ENERGY MARKET AUTHORITY OF SINGAPORE  
AND ITS SUBSIDIARY COMPANY  
NOTES TO THE ACCOUNTS

AS AT 31 MARCH 2005

9 INTANGIBLE ASSETS

9.1 Intangible assets comprise:

	As at 1 April 2004 S\$'000	Additions S\$'000	Write-off S\$'000	Reclassifications S\$'000	As at 31 March 2005 S\$'000
<b>GROUP</b>					
<b>At Cost</b>					
Development of the electricity market	31,029	-	-	154	31,183
Development of the gas market	6,382	-	-	209	6,591
District Cooling Project	480	-	-	-	480
Project-in-Progress					
Development of the electricity market	369	-	(215)	(154)	-
Development of the gas market	-	209	-	(209)	-
	<u>38,260</u>	<u>209</u>	<u>(215)</u>	<u>-</u>	<u>38,254</u>
<b>Accumulated Amortisation</b>					
Development of the electricity market	7,130	4,928	-	-	12,058
Development of the gas market	1,861	1,280	-	-	3,141
District Cooling Project	85	96	-	-	181
	<u>9,076</u>	<u>6,304</u>	<u>-</u>	<u>-</u>	<u>15,380</u>
<b>AUTHORITY</b>					
<b>At Cost</b>					
Development of the electricity market	17,993	-	-	154	18,147
Development of the gas market	6,382	-	-	209	6,591
District Cooling Project	480	-	-	-	480
Project-in-Progress					
Development of the electricity market	369	-	(215)	(154)	-
Development of the gas market	-	209	-	(209)	-
	<u>25,224</u>	<u>209</u>	<u>(215)</u>	<u>-</u>	<u>25,218</u>
<b>Accumulated Amortisation</b>					
Development of the electricity market	5,500	3,625	-	-	9,125
Development of the gas market	1,861	1,280	-	-	3,141
District Cooling Project	85	96	-	-	181
	<u>7,446</u>	<u>5,001</u>	<u>-</u>	<u>-</u>	<u>12,447</u>
		<b>GROUP</b>		<b>AUTHORITY</b>	
		<b>2004/05</b>	<b>2003/04</b>	<b>2004/05</b>	<b>2003/04</b>
<b>Net Book Value</b>		S\$'000	S\$'000	S\$'000	S\$'000
Development of the electricity market		19,125	23,899	9,022	12,493
Development of the gas market		3,450	4,521	3,450	4,521
District Cooling Project		299	395	299	395
Project-in-Progress					
Development of the electricity market		-	369	-	369
		<u>22,874</u>	<u>29,184</u>	<u>12,771</u>	<u>17,778</u>
9.2 <b>Amortisation</b>					
Charged to Operating Expenses		<u>6,304</u>	<u>5,908</u>	<u>5,001</u>	<u>4,604</u>

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AS AT 31 MARCH 2005

**10 INVESTMENT IN SUBSIDIARY COMPANY**

The details of the Authority's subsidiary company are as follows:

Name and Principal Activities	Cost		Equity Interest	
	2004/05	2003/04	2004/05	2003/04
	S\$'000	S\$'000	%	%
Energy Market Company Pte Ltd *	5,100 (a)	5,100 (a)	51	51
Operates the National Electricity Market of Singapore with effect from 1 Jan 03				
(a) Comprising 5,100,000 Ordinary Group A Shares of S\$1 each.				
* Audited by Ernst & Young Singapore				

**11 OTHER NON-CURRENT ASSETS**

	GROUP		AUTHORITY	
	2004/05	2003/04	2004/05	2003/04
	S\$'000	S\$'000	S\$'000	S\$'000
Loans/advances to employees - receivable after 12 months	254	456	254	456
Prepayment for maintenance of computer system after 12 months	252	2	-	-
	<u>506</u>	<u>458</u>	<u>254</u>	<u>456</u>

**12 OTHER RECEIVABLES**

	GROUP		AUTHORITY	
	2004/05	2003/04	2004/05	2003/04
	S\$'000	S\$'000	S\$'000	S\$'000
Amount due from the Government (Note 3.2)	513	-	513	-
Accrued interest income	294	137	294	137
Net goods & services tax receivable	172	90	-	-
Prepayments & deposits	1,309	733	135	25
Loans/advances to employees - receivable within 12 months	147	76	147	76
Amount due from subsidiary company	-	-	-	472
Dividend receivable from subsidiary company (Note 12.1)	-	-	404	-
Loan to subsidiary company (Note 12.2)	-	-	-	500
Amount due from NEMS market participants	3,154	2,881	936	1,005
Amount due from a related party	8	-	-	-
Other debtors	15	21	15	21
	<u>5,612</u>	<u>3,938</u>	<u>2,444</u>	<u>2,236</u>

12.1 The dividend was declared by the subsidiary company on 31 March 2005 and paid in April 2005.

12.2 The outstanding loan owing by the subsidiary company as at 31 March 2004 was fully repaid on 30 June 2004.

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**13 CASH AND CASH EQUIVALENTS**

Cash and cash equivalents included in the Consolidated Statement of Cash Flows comprise the following balance sheet amounts:

	<b>GROUP</b>	
	<b>2004/05</b>	<b>2003/04</b>
	S\$'000	S\$'000
Fixed deposits	117,900	102,200
Cash and bank balances	<u>1,655</u>	<u>4,675</u>
	<u>119,555</u>	<u>106,875</u>

The fixed deposits are made for varying periods depending on the immediate cash requirements of the Group and earn interest at varying rates as determined by the banks from time to time.

**14 OTHER PAYABLES**

	<b>GROUP</b>		<b>AUTHORITY</b>	
	<b>2004/05</b>	<b>2003/04</b>	<b>2004/05</b>	<b>2003/04</b>
	S\$'000	S\$'000	S\$'000	S\$'000
Other creditors and accruals	6,863	8,584	3,687	6,653
Net goods & services tax payable	147	168	147	168
Accrued employee benefits	2,034	1,710	801	825
Dividend payable to Minority Shareholder(Note 12.1)	388	-	-	-
Payable to related parties (Note 14.1)	153	92	-	-
Interest payable	11	27	-	-
Amount due to NEMS market participants (Note 14.2)	1,701	4,549	-	-
Loan from Minority Shareholder (Note 14.3)	-	500	-	-
Bank loan (Note 15)	<u>3,600</u>	<u>4,800</u>	<u>-</u>	<u>-</u>
	<u>14,897</u>	<u>20,430</u>	<u>4,635</u>	<u>7,646</u>

- 14.1 The amounts payable to related parties are trade-related, unsecured, interest-free and repayable within the next 12 months.
- 14.2 The amounts payable to NEMS market participants were related to over-recovery of NEMS administration charges, which will be fully refunded to the NEMS market participants in the next financial year.
- 14.3 The outstanding loan from minority shareholder of the subsidiary company as at 31 Mar 2004 was fully repaid on 30 June 2004.

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**15 BANK LOAN**

	<b>GROUP</b>	
	<b>2004/05</b>	<b>2003/04</b>
	S\$'000	S\$'000
Repayable within one year	3,600	4,800
Repayable after one year	-	3,600
	<u>3,600</u>	<u>8,400</u>

The loan is a three-year term loan facility offered by a bank, which was drawn down on 30 January 2003.

The loan is unsecured and repayable every three months in 10 equal instalments with the first instalment paid on 30 July 2003.

The loan interest is based on 0.6% (2004 : 0.6%) plus three months Swap Offer Rate. The subsidiary company has swapped the variable three months Swap Offer Rate with a fixed interest rate under an Interest Rate Swap Agreement with a bank whereby it receives interest at variable three months Swap Offer Rate and pays interest at a fixed rate of 1.33% (2004 : 1.33%) per annum quarterly on every 30 July, 30 October, 30 January and 30 April. The interest rate swap has the same notional amount and maturity period as the bank term loan. Consequently, the effective loan interest rate from 1 May 2003 to maturity of the term loan is 1.93% per annum.

**16 DEFERRED TAX LIABILITIES**

The deferred tax liabilities relate solely to the subsidiary company which is a private limited company incorporated in Singapore and is liable to pay income tax under the Singapore Income Tax Act as detailed below:-

	<b>GROUP</b>	
	<b>2004/05</b>	<b>2003/04</b>
	S\$'000	S\$'000
Balance at beginning of year	892	397
Provided during the year (Note 6)	966	495
Balance at end of year	<u>1,858</u>	<u>892</u>

Deferred tax liabilities at end of year relate to the following :

	<b>2004/05</b>	<b>2003/04</b>
	S\$'000	S\$'000
<u>Deferred tax liabilities</u>		
Difference in depreciation and amortisation	2,527	1,305
Others	-	34
Gross deferred tax liabilities	<u>2,527</u>	<u>1,339</u>
<u>Deferred tax assets</u>		
Provisions	(52)	(24)
Unutilised tax losses	(423)	(423)
Unabsorbed capital allowances	(176)	-
Others	(18)	-
Gross deferred tax assets	<u>(669)</u>	<u>(447)</u>
Net deferred tax liabilities	<u>1,858</u>	<u>892</u>

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**16 DEFERRED TAX LIABILITIES (cont'd)**

As at the balance sheet date, the subsidiary company has unutilised tax losses and unabsorbed capital allowances of approximately S\$2.1 million (2004 : S\$2.1 million) and S\$0.9 million (2004 : Nil) respectively that are available for offset against future taxable profits of the subsidiary company. The use of these tax losses and capital allowances is subject to the agreement of the Inland Revenue Authority of Singapore and compliance with certain provisions of the Singapore Income Tax Act.

**17 OUTSTANDING CAPITAL COMMITMENTS**

The outstanding capital commitments as at 31 March 2005 amounted to S\$1.568 million (2004 : S\$1.735 million) for the Group and S\$0.811 million (2004 : S\$1.266 million) for the Authority.

**18 OPERATING LEASE COMMITMENTS**

The Group and Authority has entered into commercial leases for its offices, employee's accommodation and office equipment. These leases have remaining non-cancellable terms of between one and five years.

Future minimum rentals under non-cancellable leases are as follows as at 31 March:

	GROUP		AUTHORITY	
	2004/05	2003/04	2004/05	2003/04
Payable:	S\$'000	S\$'000	S\$'000	S\$'000
Within one year	2,965	2,915	2,038	2,023
After one year but not more than five years	4,011	4,045	2,051	4,045
	<u>6,976</u>	<u>6,960</u>	<u>4,089</u>	<u>6,068</u>

Future payments under non-cancellable agreements for professional and technical support services of the subsidiary company are as follows as at 31 March :

	GROUP		AUTHORITY	
	2004/05	2003/04	2004/05	2003/04
Payable:	S\$'000	S\$'000	S\$'000	S\$'000
Within one year	2,217	565	-	-
After one year but not more than five years	1,220	269	-	-
	<u>3,437</u>	<u>834</u>	<u>-</u>	<u>-</u>

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**19 RELATED PARTY TRANSACTIONS**

During the year, the subsidiary company entered into transactions with related parties at terms and conditions agreed between the parties, which are presented in the following tables :

	<b>GROUP</b>	
	<b>2004/05</b>	<b>2003/04</b>
	S\$'000	S\$'000
Minority shareholder		
Management fees paid	90	396
Interest paid	6	42
Staff secondment fees paid	578	868
Rental and service fees received	(67)	-
Others	68	12
Related party		
Seconded fees paid	5	-
Services fees paid	8	8
Others	72	3
	<u>72</u>	<u>3</u>

**20 THE NATIONAL ELECTRICITY MARKET OF SINGAPORE ("NEMS")**

At 31 March 2005, the subsidiary company (EMC) has outstanding receivables and payables in respect of sale of electricity to market participants and purchase of electricity and ancillary services from market participants in the NEMS.

**20.1 Cash and Receivables under NEMS**

	<b>GROUP</b>	
	<b>2004/05</b>	<b>2003/04</b>
	S\$'000	S\$'000
Cash at bank	9,630	9,814
Receivables from market participants (retailers)	147,403	128,400
Amount due from EMC for over-recovery of administration charges	1,313	4,548
Total assets	<u>158,346</u>	<u>142,762</u>

**20.2 Payables under NEMS**

	<b>GROUP</b>	
	<b>2004/05</b>	<b>2003/04</b>
	S\$'000	S\$'000
Payables to market participants (generators)	(153,546)	(133,589)
Net Goods and Services Tax payable	(268)	(329)
Amounts due to ancillary service providers	(942)	(1,031)
Other creditors	(129)	(45)
Amount due to market participants for :		
- Over-recovery of administration charges	(677)	(4,548)
- Over-recovery of ancillary service charges	(540)	(1,344)
Amount due to EMC for administration charges	(2,244)	(1,876)
Total liabilities	<u>(158,346)</u>	<u>(142,762)</u>

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**20 THE NATIONAL ELECTRICITY MARKET OF SINGAPORE ("NEMS") (cont'd)**

The cash at bank under the NEMS represents cash balances held in various bank accounts opened by EMC solely for the operation of the NEMS. The manner in which these bank accounts can be operated are defined in the Market Rules. The bank balances are not available to EMC for payments of its administration and operating costs.

Each of the wholesale retailers is required under the Market Rules to provide adequate credit support to EMC to protect EMC and other Market Participants from payment defaults.

The Market Rules stipulate that the credit support to be given by each market participant must not be less than 30 times the estimated average daily exposure of each market participant. The Market Rules specify the type of credit support to be provided and assigned to EMC. These include bankers' guarantees or irrevocable commercial letters of credit from reputable financial institutions, cash deposits and Singapore Government Treasury bills. The credit support given as at 31 March 2005 were wholly in the form of bankers' guarantees and have an aggregate value of S\$262.800 million (2004 : S\$288.600 million).

In addition, EMC is entitled to recover any default receivables from all market participants under the Market Rules and therefore the credit risks are significantly mitigated.

Adjustments to balances arising from post-transaction changes in metering data

EMC acts as a principal in the NEMS. In the NEMS, the Market Support Services Licensee ("MSSL") is responsible for the provision and accuracy of the metering data, which is used in calculation of settlements.

From time to time, EMC may be advised by the MSSL of the post-fact changes to the metering data and the quantities of electricity traded. This may result in the adjustments to the settlement amounts due to or due from the market participants.

Under the Market Rules, EMC shall not recalculate the settlement amounts in the final settlement statements. Any such adjustments made after the issue of a final settlement statement shall be made in the preliminary settlement statements issued immediately following the resolution of disputes. No adjustment is made to the trade receivable or trade payable balances at the balance sheet date for changes arising from changes in the metering data relating to transactions made during the financial year.

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**21 FINANCIAL RISK MANAGEMENT OBJECTIVES AND POLICIES**

The main risks arising from the Group's financial instruments are interest rate risk, credit risk and liquidity risk. The Group has established processes to monitor and manage these risks in a timely manner.

**Interest rate risk**

The Group's exposure to market risk for changes in interest rates relates primarily to its investment in fixed deposits and debt obligations.

The Group's excess funds are invested in bank deposits. The Group manages its interest rate risks by placing such balances on varying maturities to match its cash flow needs. The Group does not use derivative financial instruments to hedge investment in fixed deposits.

The subsidiary company's policy on its debt obligations is to manage its interest rate cost using variable and fixed rate debts. The subsidiary company enters into interest rate swaps, in which it agrees to exchange, at specified intervals, the difference between fixed and variable interest amounts calculated by reference to an agreed-upon notional principal amount. These swaps are designated to hedge underlying debt obligations.

**Credit risk**

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

There is no significant concentration of credit risk in the Group.

In discharging its obligations under the NEMS Market Rules, the subsidiary company is required to ensure that market participants maintain certain levels of prudential security. The prudential security is usually satisfied by way of a bankers' guarantee. Occasionally, a market participant may deposit cash with the subsidiary company to satisfy the prudential security requirements.

The total value of the bankers' guarantee as at 31 March 2005 is \$262.800 million (2004 : S\$288.600 million).

Cash and bank balances are placed with reputable financial institutions. Management believes that minimal credit risks exists with respect to these financial instruments.

**Liquidity risk**

The Group relies on its internal working capital and bank borrowings to fund most of its operating activities. There are sufficient revolving credit facilities available that meet short term funding requirements.

**ENERGY MARKET AUTHORITY OF SINGAPORE  
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**21 FINANCIAL RISK MANAGEMENT OBJECTIVES AND POLICIES (cont'd)**

**Fair values**

**(i) Financial assets and liabilities**

Other than the bank term loan, the carrying amounts of financial assets and liabilities included in current assets and current liabilities approximate their fair value due to their short-term nature.

The carrying amounts of bank term loan approximate their fair values as the interest rates charged are periodically adjusted to reflect the overall market interest rates and there has been no significant change in the subsidiary company's credit standing since the drawn down of the loans.

**(ii) Derivative financial instrument**

As at 31 March 2005, the fair value of an interest rate swap entered into by the subsidiary company, which has a contract notional amount of S\$3.6 million (2004 : S\$8.4 million), is a receivable of S\$12,136 (2004 : payable of S\$33,188). The fair value is calculated using rates quoted by the subsidiary company's banker based on mid-market levels as at balance sheet date. The fair value is not recognised in the accounts as at 31 March 2005.

**22 AUTHORISATION OF ACCOUNTS**

The accounts of Energy Market Authority of Singapore for the year ended 31 March 2005 were authorised for issue by its Chairman on 8 July 2005.





Energy Market Authority

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