



POWERSERAYA SUSTAINABILITY REPORT 2009



CSR Vision

To promote a positive and sustainable environment as well as to improve our social contribution to the community in which we operate.

Environmental Policy Statement

PowerSeraya is committed to environmental stewardship for a sustainable future and seeks to achieve this through the involvement of internal and external stakeholders in delivering the following:

- Educate our employees and the community in which we operate to be responsible agents for the environment.
- Work with our customers, business partners and government agencies on energy efficiency improvements.
- Voluntarily adopt sound business practices that are compatible with the environment.
- Measure, monitor and report on the environmental performance and practices of the company.

Community Policy Statement

PowerSeraya is committed to making meaningful contributions to the society we operate in as part of the company's corporate social responsibility vision with the aim of:

- Putting our competencies into good use for the benefit of the community.
- Being an active supporter and participant of social causes that are aligned with our company's core values.
- Encouraging and supporting our employees' engagement in corporate volunteering and community work.

Core Values

VENTURE

We encourage an entrepreneurial spirit to venture into new growth areas and relentlessly seek out opportunities, related to our core businesses, to enhance our shareholders' returns.

INNOVATION

We challenge the status quo and lead the industry by daring to be pioneers.

BEST PRACTICES

We strive to achieve the best practices in the areas of corporate governance, plant operation, safety management, environmental practices, human resource management and business processes.

RESPECT

We treat each other with respect and dignity. Similarly, we respect the environment we operate in and seek to make a positive impact on the community.

ACCOUNTABILITY

We value superior performance and are accountable for our actions and results.

NURTURE

We empower our employees to attain higher levels of growth and achievement.

TEAMWORK

We work as a cohesive team to accomplish common goals.

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Welcome to PowerSeraya's Online Sustainability Report

There should be no half measures when it comes to sustainability. As a choice for business as much as for the planet, it must be embraced wholeheartedly.

At PowerSeraya, we see that it goes beyond the immediate environment, and that is why this report shows our commitment to sustainability in all its forms. At one level, that is reflected in our efforts to reduce our own carbon footprint, improve the energy efficiency of our generating business and diversify our fuel sources. At another, it shows itself in our use of renewable resources, be it water for our power plants or paper for our photocopyers.

For us, the environment is not just a principle or an abstract idea. It is what surrounds us every day, in our immediate community, in the many and varied stakeholders in our businesses, and in the long-term growth of the country. It is about people, too: we intend for our employees to enjoy a good work-life balance and for our customers, adopt intelligent energy use.

Above all, sustainability is about tomorrow. We invest in the future in many ways, from teaching schoolchildren about the environment to supporting bright youths to go to university, and to developing our own staff to achieve all they can with their careers.

It all adds up to sustainability as a company. By diversifying our businesses to become an integrated energy company, by growing good relationships with customers and suppliers, and by building staff loyalty, we hope that PowerSeraya – and the environment we care for – will thrive for many more annual Sustainability Reports to come.

Reporting Standards

The sustainability report is based on the Sustainability Reporting Guidelines of the GRI (Global Reporting Initiative), the de facto global standard for reporting. It has undergone an independant third party assurance process and a GRI Application Level check. This is a G3: B+ report covering all six indicator categories (Economic, Environmental, Society, Labour, Human Rights & Product Responsibility).

Report Application Level		C	C+	B	B+	A	A+
Standard Disclosures	G3 Profile Disclosures OUTPUT	Report on: 1.1 2.1 - 2.10 3.1 - 3.8, 3.10 - 3.12 4.1 - 4.4, 4.14 - 4.15	Report Externally Assured	Report on all criteria listed for Level C plus: 1.2 3.9, 3.13 4.5 - 4.13, 4.16 - 4.17	Report Externally Assured	Same as requirement for Level B	Report Externally Assured
	G3 Management Approach Disclosures OUTPUT	Not Required		Management Approach Disclosures for each Indicator Category		Management Approach Disclosures for each Indicator Category	
	G3 Performance Indicators & Sector Supplement Performance Indicators OUTPUT	Report on a minimum of 10 Performance Indicators, including at least one from each of: Economic, Social and Environmental.		Report on a minimum of 20 Performance Indicators, at least one from each of Economic, Environmental, Human rights, Labor, Society, Product Responsibility.		Report on each core G3 and Sector Supplement* Indicator with due regard to the Materiality Principle by either: a) reporting on the Indicator or b) explaining the reason for its omission.	

*Sector supplement in final version



Managing Director's Message

It brings me great pleasure to present to you the company's inaugural sustainability report. This report marks a significant step in our organisation's path towards greater sustainability for the future. It not only provides an account of our corporate social responsibility performance, but also demonstrates our on-going commitment towards greater transparency in the disclosure of our company's activities.

PowerSeraya has in recent years faced challenges of fuel security in our resource-constrained world, and increased competition in the retail electricity market in Singapore. Coupled with the current global financial crisis, they add further pressure on economic returns for our shareholders. Amidst the economic challenges, the company recognises the need to continue its sustainable development path and balance its economic, social and environmental performance to ensure the company's success.

With power generation as our core business, we have a strong dependence on fossil fuels and an undeniable association with carbon. Over the years, we have embarked on a journey towards more energy-efficient technologies as well as switched to less carbon-intensive fuels. This has allowed the company to reduce its carbon dioxide emissions by about 30% over the past decade. Moving forward, our sustainable development plans include the construction of an 800MW Natural Gas-fired Combined Cycle Power Plant which has the potential to deliver a further 10% reduction in carbon dioxide emissions come 2010. Our newly constructed desalination plant also complements our integrated energy strategy to provide steam and cooling water to our customers in an economic and sustainable manner. We will persevere in our journey by continuously examining our business and its impact on the environment.

At PowerSeraya, our environmental approach covers the workplace and community at large. We monitor our resource consumption in our corporate headquarters and conduct regular internal initiatives to educate employees on environmental issues. It is my desire that through the organisation's actions, our employees will be inspired to do their part in adopting sustainable practices not only at work but also extending these to their homes. Beyond the workplace, we aim to raise environmental awareness among the general public through joint efforts with non-governmental organisations and schools.

Placing great emphasis on our social performance is also high on the corporate agenda. We believe that creating an inclusive and nurturing working environment for our employees is key for continued growth. Besides encouraging a healthy work-life balance, our on-going investment in training and development provide ample opportunities for employees to enhance their capabilities.

PowerSeraya's social contributions extend to our customers and the community. Over the years, our retail subsidiary Seraya Energy has been educating our customers to better manage their energy consumption as part of its efforts to help minimise their electricity costs and lower their carbon footprint. We owe it to our customers to engage them in such climate change mitigation efforts even if it seems counter intuitive to the goal of an energy company. To reach out to talented individuals of the younger generation, we have also established other initiatives such as the Nithiah Nandan Book Prize award and the PowerSeraya Scholarship Programme with Nanyang Technological University. Our investments in our future leaders and citizens represent opportunities for them to develop and nurture their talents and serve as good role models in society.

I hope this report will give you a holistic understanding of the company and our progress towards sustainable development. The road to sustainability is a tough one but I am convinced that this is the right path to take so that our children would have a better world to live in and continue to enjoy the simple pleasures that nature provides and which pure economic success cannot buy.

A handwritten signature in black ink, appearing to read 'Neil Garry McGregor'.

Neil Garry McGregor
Managing Director
 PowerSeraya Ltd



Scope of Sustainability Report

“A company’s performance is governed not only by its economic achievements, but also its environmental and social activities to give a balanced view.”

This is PowerSeraya’s first report on sustainability and the report profile is as follows:

- The reporting period is FY06/07 (Apr 06 to Mar 07) and FY 07/08 (Apr 07 to Mar 08) unless otherwise indicated. We have chosen this period to provide a holistic picture of our sustainability activities, taking into account that our corporate social responsibility (CSR) initiatives with the community went into full force in early 2007. That said, we have also included report data that covers more than three years, if it is related to climate change and could be considered material to our business. For example, we have provided 3 years of data that report content related to human capital.
- There have been no previous sustainability reports.
- The reporting cycle is planned based on an annual basis.



How this Report was Compiled

In September 2008, a Sustainability Reporting Team (SRT) was formed with seven representatives from relevant business units to gather information for this report. The Environmental Department of the Corporate Services Group took the overall lead. Seven SRT meetings were held between September 2008 and February 2009 to compile this report, which underwent the following stages:

1. Determining report content (i.e. materiality)
2. Collation of Global Reporting Initiative (GRI) performance indicators, management approach and information on standard disclosures
3. Report drafting
4. Vetting of report draft
5. Assurance process by a third-party and GRI check

Report Form and Format

The online report is available 24/7 on our corporate web-site. Readers can select sections and make hardcopies of them, or download a PDF version of the entire report.

Report Boundary and Application Level

The entities covered are PowerSeraya Ltd, Seraya Energy Pte Ltd and PetroSeraya Pte Ltd (the latter two are wholly owned subsidiaries of the former – see diagram 2.1). Seraya Energy (SE), is the retail arm of PowerSeraya for the contestable electricity market and is one of the main players in the contestable market. It is material that SE be included in the reporting boundary. PetroSeraya, being the oil trading and oil bunkering arm of PowerSeraya's business, forms an important, future revenue stream in the company's overall integrated energy growth strategy. PetroSeraya is thus material to the report content.

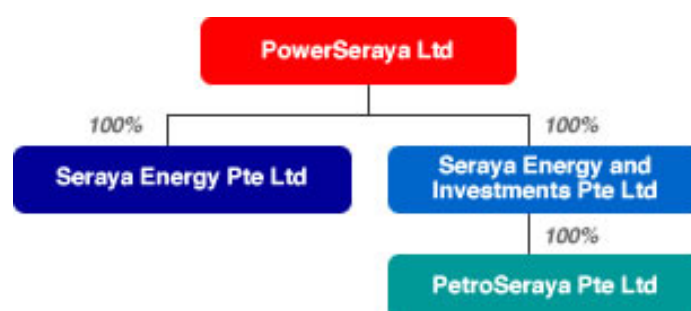


Diagram 2.1: Corporate structure of PowerSeraya showing all the report entities

Report Application Level

This report covers 24 Global Reporting Initiative (GRI) performance indicators with at least one from each of the six categories (3 Economic, 12 Environmental, 6 Labour, 1 Society, 1 Human Rights and 1 Product Responsibility). PowerSeraya appointed an independent third party, Ere-S Pte Ltd, to provide assurance on this report. This is a GRI Level B+ report.



Defining the Report Content

“We have dedicated a section to explaining our role in climate change stemming from the carbon intensive nature of our business and the importance of climate change.”

The Sustainability Reporting Team (SRT) took into account the following factors in determining the report content:

Materiality

The SRT felt that it was important to include the economic data reflected in our Annual Report as potential investors, customers and suppliers would be interested to know how well the company is performing in executing its growth plan through its integrated energy strategy.

The company is in the power generation business and thus depends on fuels which are linked to carbon emissions. As such, we have dedicated a section to explaining our role in climate change stemming from the carbon-intensive nature of our business and the importance of climate change at the national and global levels.

Power generation involves a complex chain of chemical processes which impact on the environment. We have included environmental information that is related to the local laws and regulations that control air emissions, trade effluent discharge, waste disposal and the handling of hazardous wastes, most of which is driven by the environmental management processes covered under ISO 14001.

We went further to disclose non-compliance environmental aspects that may pose health risks to the public or are related to climate change. Examples include reporting the company's sulphur dioxide emissions and carbon dioxide emissions, as well as other greenhouse gas emissions.

On the social aspects of our business, we have included the important role that the company has taken in the career development of its staff through its emphasis on training. We have highlighted the important role that the union, UPAGE, has in terms of promoting employee welfare as well as its collaborative relationship with management in delivering company goals. For this reason, we have chosen to feature UPAGE's role in collective bargaining under the Human Rights performance indicator category as this is more pertinent in our context compared to other human rights issues such as child labour, indigenous rights and forced labour, etc.

We have also included an overview of our risk-management framework, in particular how fraud risk is managed to protect the company and its stakeholders. We have chosen to report on our fraud risk management practices in relation to the topic on corruption under the Society performance indicator category for its relevance compared to other societal indicators such as anti-competitive behaviour, public policy, etc.

After determining what content goes into the report, the SRT agreed that climate change and the company's environmental performance were the top priority topics and performance indicators.

Stakeholder Inclusiveness

This sustainability report is meant for all our stakeholders, which includes parties with whom the company has interaction or over whom it has an influence. As such, our employees, customers, major shareholders, board of directors, potential investors and suppliers, as well as the community in which we operate, are all stakeholders. In this report, we have included our engagement activities and processes with these stakeholders, which are covered in [Section 5: 'Corporate Governance and Stakeholder Engagement'](#).



Sustainability Context

The company sees itself playing a role in climate change action, and this report aims to link the sustainable development approach we have taken in balancing economic and environmental imperatives to deliver long-term outcomes. The company also believes in nurturing its employees and the community through social contributions, which centre on supporting talented youths.

Completeness

The report has taken into account materiality, sustainability context and its stakeholders. All entities of PowerSeraya, including its subsidiaries, have been included. For further affirmation, reference is also made to the Global Reporting Initiative G3 Sustainability Reporting Guidelines and Electric Utility Sector Supplement (RG Version 3.0/EUSS Version Pilot) to ensure that the content is consistent with the sustainability indicators of the industry with which we are associated.

Quality

The report seeks to provide an unbiased picture by including performance indicators that cover all GRI indicator categories. We feel that a company's performance is governed not only by its economic achievements, but also its environmental and social performance which give readers a balanced view. Both positive and negative results are presented and for easy trend analysis, charts and graphs are used where appropriate.

Comparability

We have included two years-worth of content in the report (and in some areas 3 years data) so that there can be some basis of comparison of the company's economic, environmental and social performance. Where appropriate, we have compared our performance against industry or equivalent standards.

Accuracy

All content is backed by supporting documentary evidence provided by members of the Sustainability Report Team (SRT) which comprises employees representing every major business unit in PowerSeraya. Where possible, we included methodologies and assumptions explaining how the performance was calculated.

Timeliness

We aligned the environmental and social performance indicators with the economic indicators. The latter are in the company's Annual Report on a financial year basis, as the financial year ends in March and the report is released in August.

Clarity

The report is meant for all stakeholders, so conscious efforts have been made to present it in a clear, concise manner so that it caters to all readers. Information that is deemed too technical have been avoided, so that the report would be accessible to readers without technical knowledge.

We Value Your Feedback

If you have feedback to share with us on this report, or questions on the report or its contents, please contact:

The Environmental and Corporate Services Manager
TEL: +65 6213 8633 EMAIL: csr@pseraya.com.sg



Organisational Profile

“PowerSeraya Ltd’s strategic vision is to become an integrated energy company, to diversify into other commodities such as steam, cooling water, gas and oil trading.”

Name	PowerSeraya Ltd
Wholly-owned subsidiaries	Seraya Energy Pte Ltd, Seraya Energy and Investments Pte Ltd, PetroSeraya Pte Ltd
Primary services	Electricity generation, Electricity retailing, Oil trading and bunkering (since April 2007)
Headquarters	1 HarbourFront Place #17-01 HarbourFront Tower One Singapore 098633
Power Plant Stations	Pulau Seraya Power Station 3 Seraya Avenue Singapore 628209 Jurong Power Station 16 Jurong Pier Road Singapore 619175
Countries of operation	Singapore
Ownership	PowerSeraya Ltd is incorporated in Singapore and wholly-owned by Temasek Holdings Ltd until 6 March 2009 when the ownership of the company was transferred to YTL Power International Berhad.
Changes in organisational structure during reporting period	PetroSeraya Pte Ltd is a new subsidiary set up in April 2007 to provide oil trading and bunkering services. This is part of the organisation’s overall strategy of transforming into an integrated energy company. The diversification into the oil-trading business ensures greater fuel security and provides additional revenue streams. The Environmental Department (see Diagram 3.1) is a new unit set up in 2007 to provide greater focus in building the company into an environmentally responsible organisation through its corporate social responsibility (CSR) programmes. The Environmental Department has developed the CSR vision and policy statements for the company and driven many CSR initiatives including the development of this inaugural Sustainability Report.
Market served	Singapore
Employees (full-time)	403 (for year ending March 08). This is a 5% increase in the number of full-time employees in FY 07/08 compared to the previous FY.
Revenue	S\$2.8 billion (for year ending Mar 08)
Net profit after tax	S\$218 million (for year ending Mar 08)
Earnings per share	S\$0.25 (for year ending Mar 08)
Return on assets	11.0% (for year ending Mar 08)
Licensed generation capacity	3,100 MW



Diagram 3.1 : Organisational chart showing the placement of Environmental Department in the company.



Strategic Profile

“As a responsible company, we are incorporating more sustainable development initiatives in our forward plan.”

PowerSeraya Ltd's strategic vision is to become an integrated energy company. Our main business is in electricity generation with a power-generating plant on Jurong Island, one of the world's largest petrochemical hubs, in the south west of Singapore.

Our vision is to diversify into other commodities such as steam, cooling water, gas and oil trading as a means to broaden our revenue streams. In terms of electricity generation, we have a licensed capacity of 3,100MW. As of July 2008, the total registered capacity is 2,940MW.

The generation portfolio (by capacity) comprises about 68% oil-fired steam-turbine plants, 25% natural gas-fired combined-cycle plants and 7% diesel-fired open-cycle gas turbines. We are building two 379MW natural-gas-fired combined-cycle plants which are due for completion in the first half of 2010.

PowerSeraya sells all of its electrical output into Singapore's competitive, wholesale National Electricity Market. Through our wholly owned subsidiary, Seraya Energy Pte Ltd, we provide electricity retail services in the contestable market in Singapore comprising mainly of commercial and industrial customers.

As part of our vision to become an integrated energy company, the company entered into the fuel-trading and oil-bunkering business through our wholly owned subsidiary PetroSeraya Pte Ltd, further complementing PowerSeraya's power-generating business and Seraya Energy's electricity retail business.

Incorporating Sustainability

The growing focus on climate change places increasing pressure on governments to embark on a sustainable path towards reducing their carbon footprints. This in turn creates significant medium- to long-term climate change risks on organisations. PowerSeraya recognises these risks and has managed to turn them into opportunities where the company can transform itself into a more sustainable business model with the potential to reap economic rewards and deliver environmental as well as social benefits to the community in the long term.

For details on the sustainable energy message in relation to the integrated energy strategy, kindly refer to the **Annual Report 2007/2008** (Chairman's Message and Managing Director's Message) which can be found in our corporate website¹.

For details on our strategic efforts to reduce our own carbon footprint, please refer to **Chapter 6: 'Our Role in Climate Change'**.

http://www.powerseraya.com/images/stories/pdf/PS_Annual_Report_2007-8_wo_Financials.pdf



Operational Structure

“PowerSeraya Ltd’s strategic vision is to become an integrated energy company, to diversify into other commodities such as steam, cooling water, gas and oil trading.”

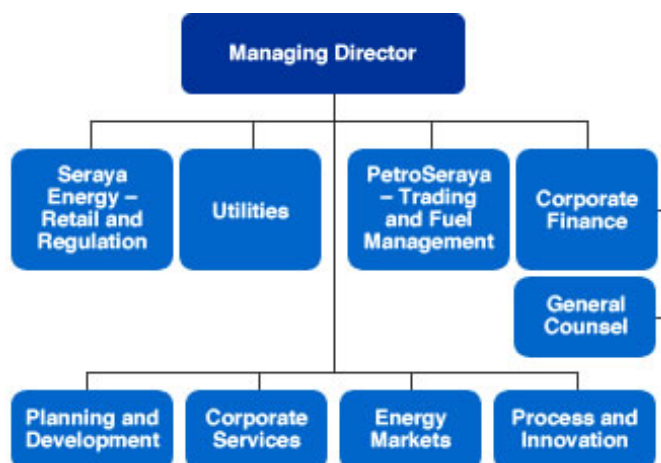


Diagram 3.2: Operational structure of the company

Managing Director’s Office

The MD leads a senior management team of eight which has been tasked with doubling the enterprise value of the PowerSeraya Group to S\$3 billion by the year 2010 and realising the vision to be the leading integrated energy company in Singapore.

Retail and Regulation - Seraya Energy Pte Ltd

The retail and marketing arm of the PowerSeraya Group handles key accounts servicing, marketing, billing operations and the contact centre. It also oversees the regulation portfolio which ensures that corporate directions of the PowerSeraya Group are within the parameters set by the Energy Market Authority and Singapore’s National Electricity Market.

Utilities

This group is responsible for the safe, reliable and efficient generation of power to supply 28% of Singapore’s energy requirements. The departments in the Utilities Group work together to strengthen our multi-utilities portfolio and capitalise on our core generation business to diversify and grow our integrated utilities component.



Corporate Finance

Finance, Legal and Risk Management fall under this group. Apart from overseeing timely financial and management reporting, integrity of internal controls and treasury functions, this group charts our corporate risk management framework.

Trading and Fuel Management - PetroSeraya

This group oversees the operations of the four departments: Business Development and Planning, Physical Oil Trading, System Operations and Terminal Operations. The Trading and Fuel Management Group focuses on operations related to fuel management and blending, terminal operations, sourcing and procurement of fuels and physical trading and bunkering.

Planning and Development

This group is responsible for strategising, preparing and implementing competitive business plans and goals. The team also works closely with other groups to identify and develop new businesses. Its scope extends to developing economic models, carrying out demand forecasts and conducting feasibility studies.

Corporate Services

Covering a diverse range of support services that extends to Human Resource, Purchasing and Contracts, Corporate Communications and Environmental, this group is tasked with building a vibrant workforce and an innovative and commercial culture. It aims to make PowerSeraya the employer of choice.

Energy Markets

This group handles electricity market operations, proprietary trading and a new portfolio relating to gas market operations. The three departments under this group are the Electricity Market, the Gas Market and the Derivatives Market. With the seamless integration of the three departments, this group seeks to transform the energy market in Singapore.

Process and Innovation

The P&I Group is a dedicated team comprising IT Infrastructure, Enterprise Solutions and Business Solutions. It seeks to develop and manage the IT assets and systems of the company and align it to key business processes and objectives. It also seeks to creatively use IT to automate business processes and deliver innovative solutions.

General Counsel

This department, which falls under the Corporate Finance Group, is responsible for managing legal advisories, dispute management, compliance and corporate secretarial matters for PowerSeraya. The internal audit function also falls under this department.



Corporate Achievements

2008

- ISO 14001 Certification
- OHSAS 18001 Certification
- Community Chest SHARE Award (Bronze)
- Global Water Awards (our desalination plant was named 'Desalination Plant of the Year')
- CIO Honouree 2008
- Home Team National Service Award – Meritorious Home Team Partner Award
- Meritorious Defence Partner Award (by MINDEF Singapore)

2007

- ISO 14001 Certification
- OHSAS 18001 Certification
- Community Chest SHARE Award (Bronze)
- FG50 (Fastest Growing 50) by DP Information Network (22nd place)
- Singapore 1000 by DP Information Network Pte Ltd

2006

- ISO 14001 Certification
- Singapore Health Awards (Gold)
- Excellent Service Award, SPRING Singapore (1 Gold, 5 Silver)
- 6th Singapore Call Centre Awards and
- 3rd Regional Call Centre Awards 2006
 - Best Contact Centre Manager, Singapore - Silver
 - Best Team Leader, Singapore - Bronze
 - Best Team Leader, Regional - Bronze
- 5th Singapore Call Centre Awards and 2nd Regional Call Centre Awards 2006
 - New Call Centre of the Year, Regional - Gold
 - New Call Centre of the Year, Singapore - Silver
 - Call Centre Champion of the Year - Gold and Silver
- Business Innovation Award – Winner



Overview of Business and Economic Performance

“The company’s vision is to be a leading integrated energy company with a mission to create an enterprise value of S\$3 billion by 2010.”

This vision stems from the corporate strategy to increase the scale and reach of the company in order to enhance fuel security and economy. The diversification of the business up and across the value chain would allow the company to achieve the scale. This requires the transformation of PowerSeraya from a single commodity power company to a multi-commodity and multi-faceted energy company offering steam, cooling water and other utilities in the future. The process of disintermediation (transition from supplier to producer) and upstream investments would allow PowerSeraya to achieve fuel security and thus extend its reach.

The continued economic success of the company is vital not only for the survival of the company. It also translates to job creation for employees that can in turn deliver positive impact to people’s livelihoods and society. It enables us to continue investing in sustainable development initiatives that would deliver environmental and social benefits for the community now and into the future.



Revenue Streams

Currently, the main revenue stream comes from the electricity generation services offered by PowerSeraya Ltd and Seraya Energy in the provision of energy, reserves and regulation markets, the electricity retail market and the vesting contracts with the Market Support Services License (MSSL). Other revenue comes from oil trading and oil bunkering services offered by PetroSeraya.

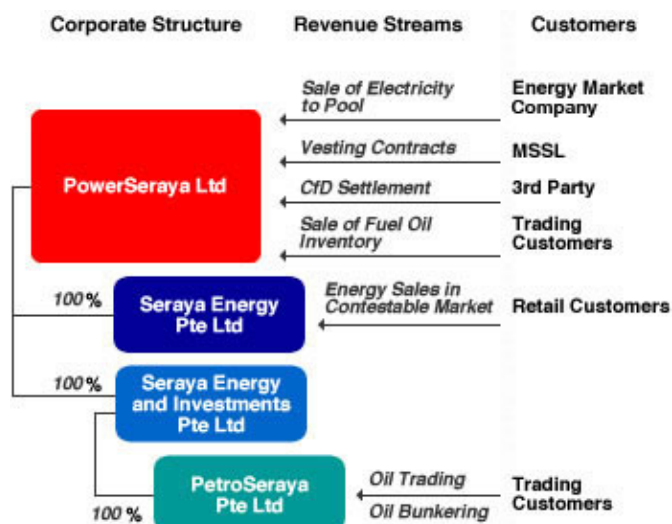


Diagram 4.1: Relationship between revenue streams and corporate structure



Financial Performance

Overall, the company's market share of Singapore's electricity generation of about 27% in FY07/08 is about the same levels at the previous FY. For the retail business, we stayed the market leader in the contestable market with FY07/08 registering close to 29% market share.

Financial Performance

The information provided below is a direct extract from the Annual Report 2007/2008:

Operating revenue/earnings

The Group's operating revenue grew by S\$169 million, a 6% increase over FY06/07 to S\$2.8 billion, contributed mainly by its new PetroSeraya Pte Ltd's business which started physical trading operations in November 2007. Amid strong competition in the market, PowerSeraya's generation business maintained its market position and sold 10,186 GWh of electricity in FY07/08. The retail business sold 6,903 GWh of electricity in FY07/08, a growth of 4% over the previous year. This was achieved through gaining a stronger market position with growth in its market share and customer base.

Profitability

For the year in review, NPAT for the Group grew by 30% to S\$218 million - a result brought about through better yield management, leading to lower fuel consumption costs gained from better plant mix efficiencies and improved utilisation of the asset portfolio. At the same time, the company is able to effectively execute its trading strategy to reduce the cost of meeting its electricity contract commitments.

Earnings per share

Basic earnings per share* rose 30% to 24.7 cents in FY07/08 as compared to 19.0 cents in FY06/07. This increase is in line with the higher profit after tax for the Group.

(Earnings per share is computed by dividing net profit after tax attributable to shareholder for the financial year by the number of ordinary shares outstanding for the financial year)*

Return on equity

The Return on Equity** (ROE) grew to 19.1% in FY07/08. This represented an increase of 19% over the previous FY's 16.1% ROE. The strong performance was driven mainly from a strong net profit after tax for the year and the efficient capital structure.

*(** ROE computed based on average opening and closing total shareholder's equity)*

Details of the financial performance of the company are covered comprehensively in the Annual Report 2007/2008.



Financial Assistance from Government and Community Investments

We did not receive any financial assistance from the Government in FY06/07. However, in FY07/08 we received a total funding of S\$34,000 from the National Environment Agency under the EASe (Energy Efficiency Improvement Assistance Scheme) to conduct an energy audit on Stage 1 – Unit 3 of the power plant to identify efficiency improvements to the water heaters and air leaking devices.

Our community investments increased from S\$47,000 in FY06/07 to S\$171,000 in FY07/08. This 270% increase is due mainly to the rise in the amount invested in environmental activities and events (for details, please refer to [Section 8: 'The Environment and the Community'](#)).



Corporate Governance and Stakeholder Engagement

“Having a robust corporate governance system protects the interests of stakeholders by ensuring that the company’s business practices are carried out in a responsible and ethical manner.”

PowerSeraya is committed to maintaining high standards of corporate governance, professionalism and accountability to safeguard and create long-term value and returns to its stakeholders through the application of sound policies, practices and internal controls.

The following sections, covering our corporate governance structures, is for the reporting period April 2006 to March 2008 which is prior to the company’s ownership transfer to YTL Power International Berhad on 6 March 2009.



Corporate Governance Q&A

“The recent establishment of the Environmental Department shows our emphasis on corporate social responsibility with a focus on the environment.”

1) What is the governance structure of PowerSeraya, such as the committees for specific tasks like setting strategy or organisational oversight?

The highest governance body in PowerSeraya Ltd is the Board of Directors (BOD) which provides organisational oversight on areas such as business strategy, risk management, employee compensation and company policies. The BOD has three committees to assist in the execution of its responsibilities:

1. Executive Committee - responsible for the company's performance and business strategy
2. Audit Committee - responsible for the financial reporting, internal controls and compliance issue (operations and finance)
3. HR and Remuneration Committee - responsible for human resources policies and compensation matters

The mandate and composition of the BOD as well as details of our BOD members can be found under the 'Corporate Governance' section of the Annual Report 2007/2008.

2) Is the chair of the BOD also an executive officer in PowerSeraya and, if so, what is his function within the management?

No, the chairperson of the BOD is not an executive officer of the company.

3) How many people in the BOD are independent and/or non-executive members?

The BOD consists of seven members, six of whom are independent and non-executive members. The only executive member of the BOD is the Managing Director of PowerSeraya. A non-executive director is generally considered a director who has no involvement in the day-to-day running of the company and is not employed by the company. As such, a non-executive director will usually devote part of his time to the affairs of the company as an independent adviser on matters of policy and strategy.

4) What mechanisms do you have for shareholders and employees to provide recommendations or direction to the BOD?

PowerSeraya was a wholly owned subsidiary of Temasek Holdings Ltd during the reporting period. There are no minority shareholders, and PowerSeraya's sole shareholder appoints the directors on the BOD.

Employees have the right to raise concerns anonymously through a whistle-blowing policy which is covered under the company's Code of Ethics.

UPAGE (Union of Power and Gas Employees) represents our union members which make up more than half of the company's staff. UPAGE and the management of the company meet on a regular basis to discuss topics relating to the welfare of the union members as well as areas of collaboration where the union and the management can work together to achieve company goals, among other issues.



5) Is there any link between compensation for BOD members, senior managers, and executives and PowerSeraya's performance, including social and environmental performance?

The members of the Board of Directors are paid director's fees on an annual basis for the roles and responsibilities they carry out. Papers covering financial, environmental and social subjects are tabled regularly at the BOD level. For dedicated attention, three committees (Executive Committee, Audit Committee and the HR and Remuneration Committee) are set up to scrutinise issues in greater detail, such as business planning and strategies; corporate governance and risk management; and human resource matters including industrial relations.

The BOD appoints directors to head and be members of the three committees. The directors are paid a fee for their role in heading and being a member of the three committees, which is over and above what they get as members of the BOD. The directors are also paid an attendance fee for attending each meeting.

All of our employees are covered in an established and structured performance management system where bonus and salary remuneration are tied to group and individual performance targets aligned to our overall performance goals – which include social and environmental performance. This is reflected in the environmental performance of the power plant operations as well as the environmental initiatives organised or supported by the organisation for employees and the community. The recent establishment of the Environmental Department in late FY06/07 shows our emphasis on corporate social responsibility with a focus on the environment. The bonus and increment of Environmental Department employees and the group heads concerned are tied to the performance of the corporate social responsibility goals which includes targets for environmental and social items. Our social performance includes the various community programmes covered under the corporate social responsibility goals. These goals form part of the corporate performance targets which are tracked by the BOD on a quarterly basis.

6) What processes are in place for the BOD to ensure conflicts of interest are avoided?

There is clear division of responsibilities between the Chairman of the BOD and the Executive Officer to ensure that there is balance of power and authority so that no one individual holds a disproportionate amount of power. The Chairman bears responsibility for the conduct of the Board and the Executive Officer bears responsibility for the Group's business.

Our annual report includes annual financial statements which require directors to declare whether they have any interest in the shares or debentures of the company or its related corporations in accordance with the Singapore Financial Reporting Standards.

Our tender process for the procurement of products or services include procedures that require members of the Board of Directors to declare whether they have an interest in the suppliers or service providers bidding for the tenders.



7) Is there a process for determining the qualifications and expertise of the BOD members guiding PowerSeraya's strategy on economic, environmental and social topics?

PowerSeraya prescribes to the standards set by the Accounting Standards Council, which took over the task from the Council on Corporate Disclosure and Governance with the enactment of the Accounting Standards Act on 1 Nov 2007.

Our Board members are appointed on a yearly basis subject to a one-third rotation rule*, which allows for the Board to be refreshed on a regular basis. In sourcing and considering the candidates for appointment as directors to the Board, his qualifications and experience will be scrutinised by our Shareholder in relation to the prevailing composition of the Board expertise and the desired profile.

As is evidenced by the BOD profile of qualifications and expertise, the BOD comprises members who hold important positions in committees and councils at the national level and have working experience in both the private and public sectors, spanning areas of expertise in the oil and gas business, legal, corporate governance, tripartite (labour, employer, government) issues including employment practices, safety and the environment.

**At the company's Annual General Meeting (AGM) held every year, one-third of the directors will retire from office. The directors to retire every year are those who have been longest in office since their last election. The election of new directors and the re-election of retiring directors are subject to The Companies Act.*

8) What internally developed statements of mission or values, codes of conduct, and principles do you have that are relevant to economic, environmental, and social performance, and what is the status of their implementation?

Our vision is to be the leading integrated energy company in Singapore.

Our mission statement is: "At PowerSeraya, our relentless pursuit is to maximise value for our shareholders, customers employees and the community. We aim to create an enterprise value of S\$3 billion by 2010."

Our guiding business principles include:

- Optimal development and utilisation of resources
- Sound environmental practices
- Product/service differentiation
- Creative and vibrant workforce

Our core values are "Venture, Innovative, Best Practices, Respect, Accountability, Nurture and Teamwork" (VIBRANT for short)

Our Code of Conduct covers areas such as health and safety and fraud, which are relevant to environmental and social performance. Our Code of Ethics covers areas such as safe workplace and environment and whistle-blowing.

Each employee is given a copy of the Employee Handbook which covers the above statements of mission, vision and values. The corporate website and the intranet also communicate these corporate messages. We also have posters about them throughout the workplace.



9) How does the BOD oversee PowerSeraya's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct and principles?

The BOD meets quarterly to be updated on the progress of the company's performance which includes economic, environmental as well as social aspects. They also provide advice and direction on issues facing PowerSeraya and how to move the company forward. From time to time, the BOD appoints external consultants and auditors to augment expertise and provide advice on specific company matters. The BOD is supported by three main committees: the Executive Committee looks into the performance and business strategy which will cover economic, environmental as well as social performance; the Audit Committee looks into the risk management aspects of the organisation with the Risk Management Committee which provides quarterly reports; and the Human Resources and Remuneration Committee looks into HR policies as well as the Code of Conduct.

10) How do you evaluate the BOD's performance, particularly with respect to economic, environmental and social performance?

There are no formal processes to evaluate the performance of the BOD. However, there is the practice of re-electing and rotating BOD members for a second consecutive term which is an indirect means to evaluate members who wish to be considered for a new term. In addition, should a BOD member fail to attend meetings or conference calls, nor send their proxy vote, etc, the Chairman of the BOD, would in his/her best judgment, take action in line with the relevant rules and procedures.



Risk Management

Precautionary Principle - Risk Management

We have a corporate risk management framework that covers the different types of enterprise risk. Under this framework, enterprise risks are identified by the respective business units and significant risks are documented in the Corporate Risk Register and monitored. The business risks are expected to identify mitigation measures to address the enterprise risks and implement them accordingly in efforts to reduce the risk exposure. We employ risk monitoring and reporting systems to enable early detection and escalation of risks to the various levels for review to take appropriate actions. Diagram 5.1 shows the risk-management cycle practiced in the company.



Diagram 5.1: Risk management cycle

PowerSeraya has put in place a structure to manage the risks of the entire company. The committees and their respective roles in risk management are shown in Diagram 5.2. We have the Risk Management Committee (RMC) which is responsible for the development and implementation of processes that identify measure, monitor and control risks within the company. The RMC is headed by a Chief Risk Officer (CRO) appointed by the Board.

Reporting to the RMC are the various risk owners who are responsible for managing and monitoring risks of their business units. The Enterprise Risk Management (ERM) Dept collates all reports from the risk owners on a quarterly basis. The ERM Dept primarily manages the overall market risk of the company and works with the different risk owners to manage other types of enterprise risks that include (but are not limited to) the following:

- Market Risk
- Credit Risk
- Liquidity Risk
- Regulatory and Legal Risk
- Project Risk
- Health and Safety Risk
- Operational Risk
- Integrity Risk
- Human Capital Risk
- Business Continuity Risk



Diagram 5.2: Organisational structure for risk management



Managing Emergencies and Crisis

As a responsible company, we are committed to safeguarding the well-being of our employees, contractors, customers, the public and the environment. PowerSeraya adopts a three-level response framework for handling emergencies.

- Level 1 – The Site Incident Response Team responds and controls minor incidents
- Level 2 – The Emergency Management Team handles more serious operational incidents with wider potential implications
- Level 3 – The Crisis Management Team, which is responsible for the protection of the company's value and image, deals with strategic issues and high-level shareholder communications during an escalated incident.

Ten major operational incidents and response plans have been identified in the organisation (below). The response/contingency plans are reviewed regularly to ensure they are updated against changes in business operations and regulations.

Major Incidents	Response/Contingency Plans
Generation Failure	Major System Failure
Transmission Switching Failure	Major System Failure
Fire and Explosion - Plant	On-Site Emergency Response Plan
Safety Hazards	On-Site Emergency Response Plan
Environment Incidents (Oil Spill)	Oil Spill Plan
Fire - HarbourFront Office	Fire Emergency Plan for HarbourFront Towers
System/IT/Communications issues	IT Disaster Recovery Plan
Infringement of Port Security	Port Facilities Security Plan
Contagious Disease	SARS/Avian Flu Contingency Plan
Fuel Supply Disruption	Natural Gas Disruption - SOP

Table 5.3: Ten major operational incidents and response/contingency plans



Managing Fraud Risk

The management of PowerSeraya recognises the significance and impact of fraud risks if these are not well managed. The company has a Fraud Risk Management (FRM) framework which it views as important in protecting the interests of shareholders, employees as well as other stakeholders who have dealings with the company. The overall responsibility of implementing and overseeing the FRM framework lies with the Fraud Control Officer (FCO), supported by the Fraud Risk Assessment Committee. Diagram 5.4 shows the organisational structure for FRM.

In 2007, the Fraud Risk Management (FRM) Policy was formalised and approved by senior management and the Audit Committee. It aims to draw together all the preventive, detective and resolution, and reporting initiatives adopted by PowerSeraya in one document and to:

- promote awareness of potential high fraud risk areas
- develop appropriate strategies and controls to minimise the risks of fraud and consequent losses

At PowerSeraya, all business units are periodically analysed for fraud risks (including corruption which is a subset of fraud). Since the formulation of the FRM Policy in 2007, there have been no confirmed incidents of fraud arising from allegations received and investigated. Fraud risk assessments are conducted on business processes (e.g. procurement, treasury) which cut across multiple departments and functions in the organisation.

Complementing the FRM Policy are the Code of Ethics and the Code of Conduct. The former serves to guide employees in making sound and ethical decisions. The latter aims to uphold the integrity and image of the company through employee's diligence and due care in the discharge of their duties.

Fraud risk awareness talks are also conducted periodically to help employees identify potential red flags. Employees are encouraged to report known or suspected incidences of malpractice in accordance with the Employee Handbook.



Diagram 5.4: Organisation structure for fraud risk management



Stakeholder Engagement and External Commitments

“PowerSeraya sees itself being part of the climate change solution and regularly engages the community through environmental events and initiatives.”

Our stakeholders include potential groups that we can work with to further our economic, environmental or social performance.

To identify the stakeholders with whom we should engage, PowerSeraya takes its direction from our Corporate Social Responsibility (CSR) Strategic Thrusts which was developed in consideration of the challenges and opportunities facing the company as well as our integrated energy strategy. These cover five areas, leading to the following stakeholders’ involvement as shown in the table below.

CSR Strategic Thrusts	Stakeholders
a) Investing in Green Capabilities	Shareholders, Customers, Business & Technology Partners
b) Incorporate Greenhouse Gas in Management Practice	Shareholders, Customers
c) Build Strategic Relationships	Customers, NGOs, Government Agencies
d) Grow with the Community	Schools, Wider Community
e) Nurture Human Capital	UPAGE*, Employees (Current & Future), Youths

**UPAGE stands for Union of Power and Gas Employees*

Our economic performance is also driven by our vision and mission statement which will involve the engagement of stakeholders such as business partners and service providers for the various economic related activities/initiatives.

Our engagement with the government agencies for environmental performance is in relation to compliance with environmental laws and regulations. For raising environmental awareness and social work among employees and the community, we work closely with the government agencies, NGOs and schools for our CSR initiatives.



Stakeholder Engagement

PowerSeraya believes in continuous engagement with its many stakeholders to keep abreast of the latest developments and to communicate our views to all parties with whom we interact. These are just some of the more specific ways in which PowerSeraya engages its main stakeholders. Our stakeholder engagement allows us to gain input and feedback on our business, clarify perceptions of our company and foster constructive relationships for the benefit of our business as well as the community. We engage our stakeholders in various ways ranging from formal meetings, dialogue sessions, customer events and initiatives with the community.

Communities

PowerSeraya sees itself as part of the climate change solution and regularly engages the community through the environmental events it has organised, supported or participated in. Our engagement with the community also extends to meaningful causes that benefit society.

Every year Greenridge Secondary School, an adopted school of PowerSeraya Ltd, organises its annual outreach programme based on an environmental theme. This is one of the means through which we educate the Zhenghua community about the environment so they hopefully also become 'green' advocates. For details, refer to **Section 8: 'The Environment and the Community'**.

Further, we held a stakeholders' consultative session to gather feedback from the general public on the Clean Development Mechanism Project (800MW Natural Gas Combined Cycle Plant) which we are in the process of registering as a CDM project. The topics raised and answered during this session may be found in our corporate website¹.

1. http://www.powerseraya.com/images/stories/pdf/PS_Annual_Report_2007-8_wo_Financials.pdf

Government Agencies and Non-Governmental Organisations (NGOs)

Our main engagement with NGOs and government bodies is our contact with the National Environment Agency (NEA), JTC, the Energy Market Company and the Energy Market Authority. We are in discussions with NEA on a proposed Responsible Environmental Agents Programme, which will launch in FY09/10. We also work with the Singapore Institute of International Affairs, Waterways Watch Society, and the Singapore Environmental Council.

Customers

We run energy efficiency and educational events to carry out our product responsibility beyond the provision of safe and reliable electricity. At these events, customers gain an insight into electricity generation and learn about energy conservation solutions. It is through these events that we also gain customer feedback, learn about their concerns and even get updates on the latest market news. Please refer to **Section 10: 'Product Responsibility'**.

From April 2007 to December 2007, a customer satisfaction survey was conducted by Seraya Energy to gather feedback. Details of the customer survey are also in **Section 10: 'Product Responsibility'**.



Shareholders, Management and Staff

The Board of Directors holds quarterly meetings with the senior management team to get updates on the progress of the company's performance, discuss and develop the business strategy, develop medium- to long-term plans and provide advice on problems and challenges.

Our staff management dialogues are a means for the management to update the staff every quarter on the company's performance, understand the concerns of staff and elicit feedback.

The Business Group Retreat is an annual event held by each group to discuss plans and goals for the coming financial year. The outcomes of the retreats are used as inputs for the Management Retreat where corporate-wide business plans and goals are discussed by the senior management team. The outcomes of these discussions are then shared with the business groups so that amendments to plans are updated.

Finally, to tie these activities in with our sustainability as a business and for the environment, the Sustainability Reporting Team (SRT) met seven times over the report preparation period (Sep 08 to Feb 09). For details of the process undergone by the SRT, please refer to [Section 2: 'Scope of Sustainability Report'](#).

Suppliers

PowerSeraya participates in the annual V94.3A/84.3A Asia Pacific User Group Meeting where users of the Siemens V94.A/83.A machinery share their experiences and knowledge on the operations and maintenance of this machine used in power plants.

Further, we procure our supplies from renewable or environmentally responsible sources. As an indicator of our commitment to green energy, we are consciously working with business and technological partners to explore low carbon projects as part of our forward plans.



Employees and their trade unions

At PowerSeraya, all employees have the freedom to join the UPAGE (Union of Power and Gas Employees). There is also freedom for collective bargaining by the UPAGE on matters concerning employees. Since FY07, 54% of the workforce is covered by the collective agreement and 75% of PowerSeraya's workforce are UPAGE members. We maintain a close and productive working relationship with UPAGE. Both the management and UPAGE are committed to working together in a strategic alliance to meet challenges, resolve issues and seize opportunities with a view to enhancing business competitiveness and the well-being of the employees. PowerSeraya takes a highly consultative approach and seeks to achieve win-win solutions by engaging UPAGE to share information, discuss business strategies and plans, while also taking into consideration each other's constraints, concerns and interests.

On average, UPAGE and the management meet four times a year. Two of these meetings discuss bonus payout and salary increment for employees. In addition to these, at the start of the financial year, the Management will share with UPAGE the business plans and goals for the year so that both parties are aligned.

On an informal basis, these two parties also hold meetings to discuss and resolve issues that may arise. There were altogether eight Union-Management meetings in FY06/07 to FY07/08. A significant milestone achieved during the reporting period was the signing of the Collective Agreement (2007-2010) between PowerSeraya and UPAGE on 30 August 2007.

The Collective Agreement, which came into effect on 1 July 2007, reiterated both the company and the union's commitment to protect employees through a status quo arrangement, given the impending divestment of the company.

Subsequent to the signing of the agreement, following strong support from UPAGE, variations were made to the Collective Agreement in March 2008. These included restructuring the multiple leave schemes into one single scheme for internal equity and higher productivity; upward adjustments to the minimum and maximum points of the non-executive salary grade structure; and changes to the annual variable bonus matrix to reflect higher bonus quantum for higher company performance in ROE. The key concern with the Union was how to ensure that the employees get a fair amount of compensation in exchange for reducing their leave entitlement. The Management took into consideration this key concern and did its best to accede to the Union's proposed quantum, including acceding to the unions' proposal to introduce a 20-year and 40-year Long Service Award in addition to the existing ones. The UPAGE similarly sought to understand the management issues related to the existing leave structure and communicated the merits of the proposed leave scheme to its union members to establish buy-in. The efforts of both parties paid off with the amendment of the leave scheme approved in March 08. The company also proposed changes to the overtime scheme but was prepared to postpone the discussion of this scheme upon the union's concern that they were not ready to consider such a scheme. On medical benefits, the company proposed streamlining the current two medical schemes into one scheme for internal equity and external competitiveness but decided to review the proposal given several concerns expressed by the union.

Since the announcement by our owners to divest the three power generating companies (including PowerSeraya) in June 2007, we had made conscious efforts to feature the Union in our quarterly Staff Management Dialogues to inform staff of the union-led initiatives and to also gather any concerns or issues raised by the staff on divestment.



External Commitments

What externally developed economic, environmental, and social charters, principles or other initiatives does PowerSeraya subscribe to or endorse?

PowerSeraya is a member of the Singapore Compact, which is a participant of the UN Global Compact.

What associations (such as industry associations) and/or national/international advocacy organisations is PowerSeraya involved in, is on any governing bodies of committees, and funds or views membership as strategic?

PowerSeraya's external commitments include the following:

- Singapore Compact (Member)
- Sustainable Energy Association of Singapore (Member)
- National Environment Agency - Corporate and Schools Partnership Programme
- Singapore Institute of Directors - our Managing Director is a Fellow
- Energy Studies Institute - our Managing Director sits on the Management Board



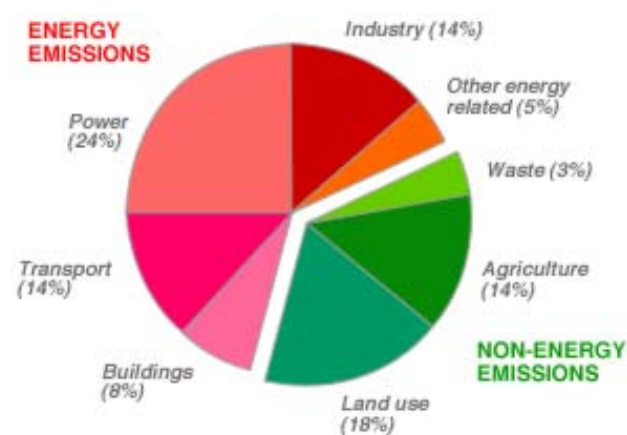
Our Role in Climate Change

“PowerSeraya has embarked on a path in response to climate change by enhancing the efficiencies of our power plant operations as well as our shift to cleaner fuels such as natural gas.”

Climate change which was once a possibility is now a reality. According to the Stern Review published in October 2006, the power industry creates about 25% of the world’s greenhouse gas emissions. It also points out that if mankind follows the business-as-usual path, there is an increasing risk of serious, irreversible impact.

PowerSeraya recognises climate change as an important issue that cannot be ignored. The Stern Review also estimates that deep cuts in greenhouse emissions will come with a cost and it estimates that the annual costs of stabilising emissions at 500-550ppm (parts per million) would be around 1% of world GDP by 2050. (When the Stern Review was published, the level of greenhouse gas in the atmosphere was around 430ppm CO₂ equivalent, compared to only 280 ppm before the Industrial Revolution.)

PowerSeraya is prepared to face up to the challenge of balancing economic, environmental and social factors in building a sustainable outcome for the company, the community and the environment.



Total emissions in 2000: 42 GtCO₂e
 Energy emissions are mostly CO₂ (some non-CO₂ in the industry and other energy related).
 Non-energy emissions are CO₂ (land use) and non-CO₂ (agriculture and waste).
 Source: Prepared by Stern Review, from data drawn from World Resources Institute Climate Analysis Indicators Tool (CAIT) on-line database version 3.0.

Diagram 6.1: Proportion of GHG emissions by source



According to studies by the International Energy Agency, energy efficiency has the potential to be the biggest single source of emissions savings in the energy sector. Improvements in energy-supply efficiency and switching to less carbon-intensive fuel have been identified as key mitigation technologies that can be deployed in the shorter term.

Consistent with these reports, PowerSeraya focuses on enhancing the efficiencies of our power-plant operations as well as making a shift to cleaner fuels such as natural gas. Between 2002 and 2007, our overall power-plant efficiency increased from 38.43% to 42.45%, and the composition of power generated from natural gas increased by over 30%. This combination of fuel switching and greater energy efficiency has led to a reduction in carbon dioxide intensity (CO₂ metric tons per MWh) of over 15%.

In addition, PowerSeraya's holistic approach towards climate change takes us beyond our current plant operations to include raising environmental awareness at the workplace and the community (please refer to [Section 7: 'Environmental Performance'](#)).

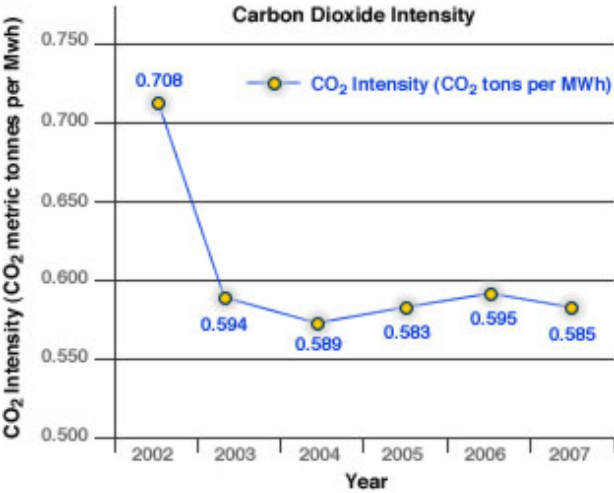


Diagram 6.2: PowerSeraya's carbon dioxide intensity improvements from 2002 to 2007



Future Investments in Sustainable Development

One of the positive responses to climate change at the global scale is the establishment of the Kyoto Protocol which obliges developed nations to reduce their collective greenhouse gas emissions by 5.2% from 1990 levels by 2012. It includes flexible mechanisms such as **Emissions Trading**, the **Clean Development Mechanism (CDM)** and **Joint Implementation** to allow Annex I economies to meet their greenhouse gas emission limitations by buying emission reduction credits from elsewhere.

PowerSeraya is proud to be investing in a new 800MW combined-cycle power plant (CCPP) which will deliver future CO₂ emissions of about 10% below current levels. We are in the process of registering this new plant as a CDM project which would then deliver sustainable outcomes for Singapore. For details, kindly refer to the **United Nations Framework for Climate Change (UNFCCC)*** website to download the United Nations Framework for Climate Change Convention website to download the Project Information Note and Project Design Document.

* UNFCCC website:

<https://cdm.unfccc.int/Projects/Validation/DB/SGP0QXF901ZSA7UYRDJB0LSIJ88JB3/view.html>



Environmental Performance

“PowerSeraya takes a holistic approach towards environmental sustainability beyond its power-plant operations, to include our employees in the workplace and our customers, as well as the community.”

The company recognises that we live in an interconnected world. This means that the support of employees and external parties is vital in building a sustainable future for the organisation as well as the communities with which we come into contact. We consider our environmental sustainability insofar as it relates to our workplace, our customers, our operations and the communities with which we are engaged. Our commitment can be found in our policy on quality, health, safety and the environment, further complemented by our corporate social responsibility policy.

Please refer to our corporate website to view our CSR Policy.

http://www.powerseraya.com/index.php?option=com_content&task=view&id=79&Itemid=95



At Our Plant Operations

“With our new desalination plant, PowerSeraya contributed to the sustainable development of the country by achieving water sufficiency.”

PowerSeraya has oil-fired steam plants and natural gas-fired, combined-cycle power plants (CCPP). The oil-fired steam plants use more carbon-intensive heavy fuel oils, while the CCPPs use less fuel-intensive natural gas. Burning fossil fuels at both kinds of plant to generate power results in the emission of carbon dioxide into the atmosphere. We have taken steps to reduce emissions of the two main types of gas produced in the course of our operations, carbon dioxide and sulphur dioxide.

Our commitment to the environment in our plant operations can be found in the **Quality, Health, Safety and Environmental (QHSE) Policy¹**.

The Corporate Social Responsibility (CSR) Vision and the accompanying Environmental and Community Policy Statements were developed in the later part of 2008 (outside the reporting period) after taking into consideration the QHSE Policy, our stakeholders, our business association with carbon and our Core Values.

The Environmental Policy Statement stemming from the **CSR Vision²** covers our commitment towards corporate-wide environmental initiatives with our internal and external stakeholders.

As a company certified with ISO 14001, we place emphasis on the environmental performance of our power plant operations. We identify its environmental aspects and impacts and implement procedures to ensure that significant environmental aspects (such as air emission, treated water discharge and waste disposal) are measured and controlled to ensure compliance with local laws and regulations.

1) For our QHSE Policy, please refer to:

http://www.powerseraya.com/index.php?option=com_content&task=view&id=23&Itemid=9

2) For our CSR Vision, please refer to:

http://www.powerseraya.com/index.php?option=com_content&task=view&id=79&Itemid=95



ISO14001 and EMS

PowerSeraya obtained ISO 14001 certification in 2005 having put in place a robust Environmental Management System (EMS). Under the EMS, the company is required to identify all the environmental aspects of the entire business operations. The environmental impacts for each and every aspect is identified and assessed before it is entered into the Significant Environmental Aspect Register.

Action plans encompassing procedures, mitigation measures and target objectives are then drawn up for every significant environmental aspect for control purposes and subsequently for implementation. The environmental aspects and their associated actions plans (see Table 7.1) are communicated to all relevant staff.

For monitoring purposes, environmental indicators are tracked against objectives and reported on a monthly and quarterly basis at the department/group and senior management levels respectively. On an annual basis, a management review of the environmental objectives and EMS procedures is conducted as part of the continuous improvement cycle.

Key Environmental Aspects	Activities	Key Environmental Impacts
Fuel consumption	Combustion of fuel oil in steam boilers	- Non-renewable resource depletion - CO₂, SO₂, CO, NO_x, PM emission - Ash and boiler slag generation and disposal
	Combustion of natural gas in combustion chamber	- Non-renewable resource depletion - CO₂, CO, NO_x, emission
	Terminal operations for fuel management and transfer	- Potential for oil spillage causing sea pollution
Water consumption	Use of water for steam generation in steam plant and combined cycle plant	- Scarce resource depletion - Wastewater generation and discharge
Material consumption	Use of limestone for FGD plant Use of ammonia for EP	- Scarce resource depletion - Waste / by-product generation (e.g. gypsum, waste chemicals, etc.)
Electricity consumption	Use of in-house electricity for operation equipment for power generation (e.g. EP, FGD, Water Treatment Plants, etc.)	Indirect use non-renewable resource depletion - Indirect CO₂, SO₂, CO, NO_x, PM emission - Indirect ash and boiler slag generation and disposal

Table 7.1 : Environmental Aspects and Corresponding Environmental impacts



Identification Process for Environmental Aspects

We ascertain the risk level of every environmental aspect identified for significance, based on criteria such as legal requirement, severity of environmental impacts and the likelihood of occurrence (taking into account the frequency of aspects occurring and existing control measures) to finally arrive at the risk level. The risk level for each environmental aspect is determined based on a severity-likelihood matrix and is used to determine whether a particular aspect is entered into the Significant Environmental Aspect Register. We then develop actions plans to control or mitigate each significant environmental impact based on the risk level of the corresponding environmental aspect, taking into consideration other factors such as the feasibility of control/mitigation measures as well as operational, financial and technological constraints.

The GRI environmental indicators were chosen from the Significant Environmental Aspect Register (except of ozone-depleting substances which is insignificant in quantity) to comprehensively cover air, land and water elements.

For air pollutants, SO₂, CO₂ and hydrochlorofluorocarbons were chosen because these are the major air emissions arising from the business operations, and the latter two in particular were chosen due to their association with climate change.

For water pollutants, we have included the major compliance-related pollutants such as biological oxygen demand and chemical oxygen demand which are bounded by law, as well as oil-spill incidence. We have also included water consumption arising from our business operations in the context of Singapore's focus on water self-sufficiency.

For land pollutants, we have included hazardous and non-hazardous wastes as there is a fair proportion of the former which is treated and shipped internationally under the Basel Convention.



Organisational Responsibility

PowerSeraya has established the QHSE Steering Committee and QHSE Working Committee with the primary objective to develop, implement and improve the EMS as well as other management systems (i.e. quality, health & safety). These stemmed from the QHSE Policy which is endorsed by the Managing Director of the company. The main tasks of the QHSE Steering Committee and QHSE Working Committee are to establish and review the QHSE policy and the environmental objectives. In addition, these committees ensure the availability of resources to administer the EMS and conduct management reviews on a regular basis as part of the continuous improvement cycle.

In general, each department/section head holds operational responsibility for the environmental management system for their respective areas and works closely with the QHSE Working Committee to address all environmental aspects arising from the business operations.

The organisation charts for the QHSE Steering Committee and QHSE Working Committee are provided below showing leadership and commitment to environmental performance.

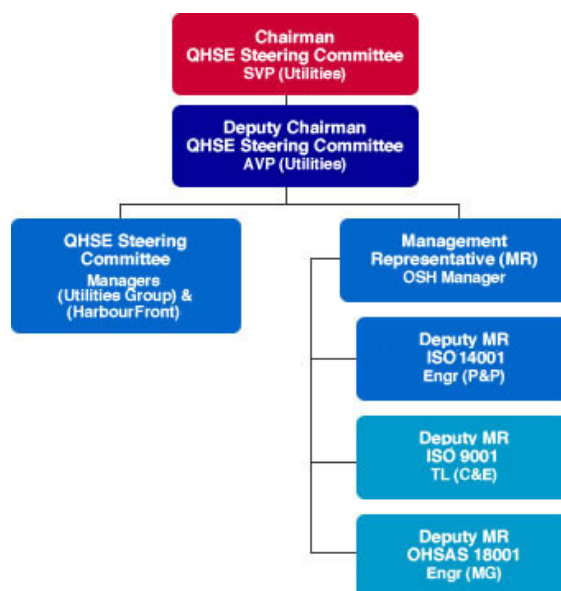


Diagram 7.2: QHSE Steering Committee

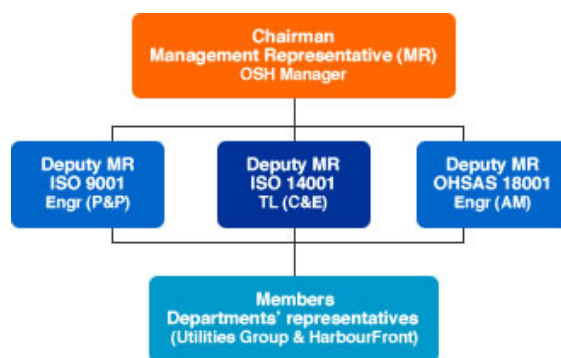


Diagram 7.3: QHSE Working Committee



Fuel Consumption

At PowerSeraya, the primary and direct sources of energy used for our business are fuel oil and natural gas which are bought on the open market. There was a reduction in fuel oil consumption of about 16.5% between FY06/07 and FY07/08, or 255,355 tonnes in absolute terms. Natural gas consumption for FY07/08 was about 34,457 BBTU (Billion British Thermal Units), which is about the same as FY06/07.

Note Fuel oil refers primarily to heavy fuel oil and intermediate fuel oils. However, the figures include a very small proportion of diesel oil which is used as contingency and for peaking purposes.

In PowerSeraya's context, our direct and primary source of energy used for our business (i.e. electricity consumption) is from the fuel oil and natural gas that we use/consume (this we measure in Tonnes or BBTU rather than Joules).

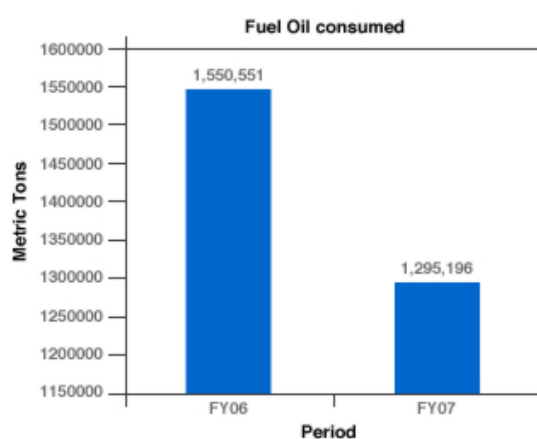


Diagram 7.4: Reduction in fuel oil consumed in FY06/07 and FY07/08

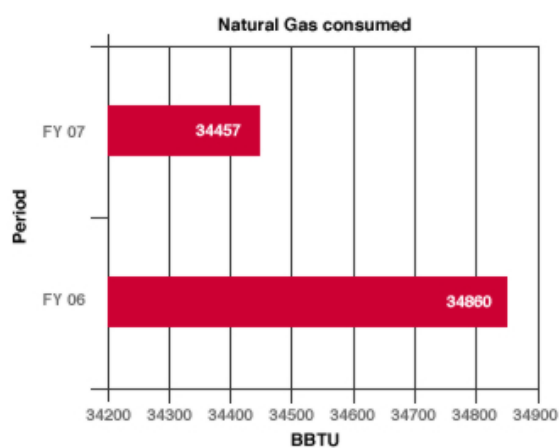


Diagram 7.5: Reduction in natural gas consumed between FY06/07 and FY07/08



Emissions

Carbon dioxide emissions

Thanks to reduced consumption of fuel oil and better plant efficiency, the CO₂ intensity decreased from 0.592tons/MWh to 0.582tons/MWh, an improvement of about 2% between FY06/07 and FY07/08. The overall plant efficiency improvement of about 0.85% in FY07/08 over FY06/07 is contributed mainly from the combined cycled power plants (CCPP) that run on natural gas. Looking ahead, we expect further improvements when the 800MW CCPP project starts in the first half of 2010 which would bring about a further 10% reduction in carbon dioxide emissions in the near future.

The indirect carbon emissions arising from our operations at the corporate headquarters can be found in [Section 7.2\(i\)](#).

Note: The CO₂ intensity figures cover the power plant operations which are the major CO₂ emission contributor. It does not include indirect CO₂ emissions from the electricity that we buy from third parties.

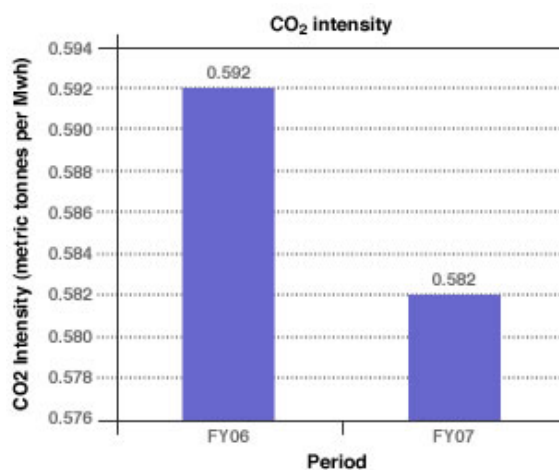
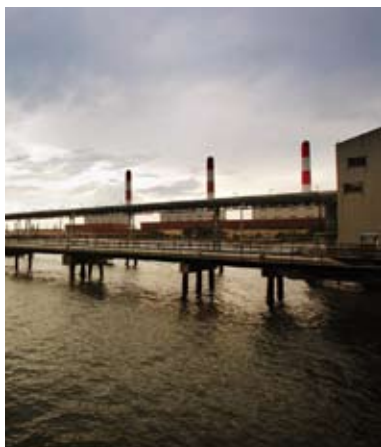


Diagram 7.6: Reduction in carbon dioxide intensity emissions in FY06/07 and FY07/08



Sulphur dioxide emissions and mitigation initiatives

The fuel oil used in our power plant operations has a relatively high sulphur content which releases SO₂ into the atmosphere when burnt. Exposure to high levels of SO₂ can cause breathing problems, respiratory illnesses and cardiovascular disease. To mitigate these harmful effects, we burn fuel oils with no more than 2% sulphur content in them, which is within National Environment Authority (NEA) requirements.

The resulting SO₂ emissions go through a flue gas desulphurisation (FGD) unit which removes over 90% of toxic emissions. In FY07/08, there was a significant reduction in the SO₂ intensity of about 7% due mainly to the removal of SO₂ emissions by the FGD at the Stage 1 steam plants and the burning of lower sulphur content fuel oil in the remaining steam plants. We were able to maintain the high level of FGD efficiency in the period FY06/07 to FY07/08 by adopting a proactive maintenance regime and implementing a comprehensive monitoring programme for the FGD plant. An ISO 14001 objective is established to maintain SO₂ emission below 130ppm at the absorber outlet instead of the design value of 150ppm.

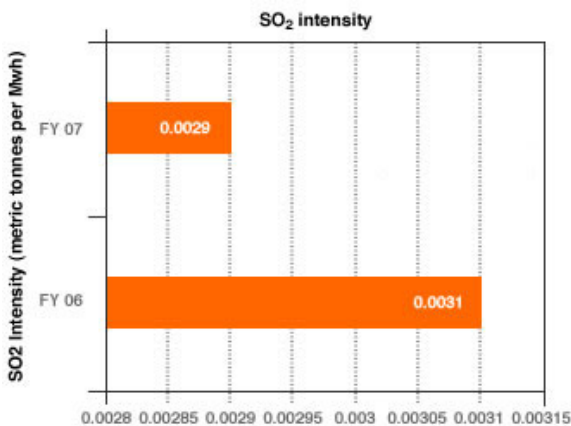


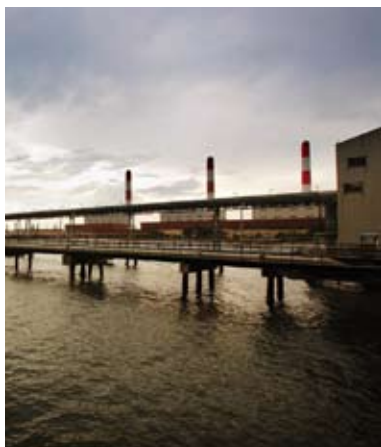
Diagram 7.7 : Reduction in sulphur dioxide intensity in FY07

Nitrogen dioxide

We are unable to report on our NO₂ emissions at this present moment because of the difficulties in measuring the actual amount of nitrogen dioxide from the boilers on a continuous basis. Moreover, there is also no flow meter to capture the total flow of flue gas in order for us to compute the total NO₂ emission. However, we have consistently kept the NO₂ levels below the regulatory limits set by the National Environment Agency of 700 mg/Nm³.

Ozone-depleting emissions

There were no ozone-depleting emissions from power plant operations. However, our office air-conditioning emitted insignificant amounts of hydrochlorofluorocarbons, of between 135kg and 158kg in FY07/08 and FY06/07 respectively.



Water

Power generation consumes huge amounts of water. In FY07/08, we used slightly below two million cubic metres of water. This is a 9% reduction from FY06/07's water use (2,186,600 cubic metres) at the plant. Our water consumption at the office headquarters is reflected separately.

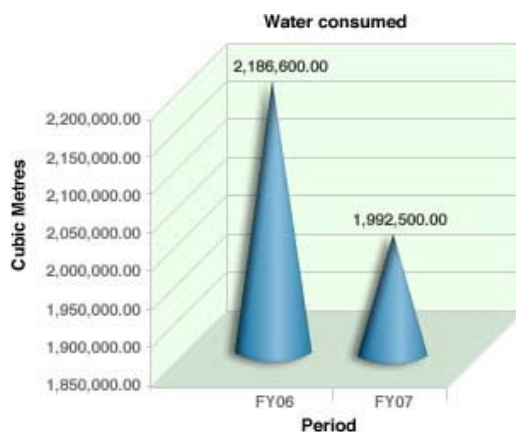


Diagram 7.8: Water consumption reduction at the plant

With regard to water self-sufficiency, we now rely less on freshwater since our seawater desalination plant started in mid-2007 with about 20% of water use coming from desalinated water in FY07/08. In 2008, freshwater use comprised only 10% of water consumed for operations.

With our new desalination plant, PowerSeraya contributed to the sustainable development of the country by achieving water sufficiency - one of the goals set out in the Singapore Green Plan 2012.

The plant, which was named 'Desalination Plant of the Year' at the Global Water Awards 2008, also gave the company the following economic benefits:

- Reduction in cost of water by 30%
- By co-locating the desalination plant with the power station, PowerSeraya saved up to 25% of capital costs of infrastructure alone. This links back to the sustainable business strategy
- The integration of the operations of the desalination plant and the power generating plants enables PowerSeraya to produce steam and cooling water which can be sold to neighbouring companies

Wastewater discharge

Power generation produces wastewater which is discharged into the sea. This water undergoes stringent quality checks for heavy metals, biological oxygen demand (BOD) and chemical oxygen demand (COD) to determine whether it has significant effect on fish or aquatic plants. The wastewater samples are taken bi-yearly and sent to an accredited laboratory for tests. For the period FY06/07 to FY07/08, the wastewater discharge was in full compliance with the regulations in the Environmental Protection and Management Act.

The BOD and COD tests measure the relative oxygen depletion effect of a waste contaminant. In FY06/07 and FY07/08, the BOD tests in the treated wastewater were less than 20mg/l and were well within regulatory limits of 50mg/l. For COD, the range was consistently below 50mg/l, well below the regulatory limits of 100mg/l.

Other significant substances contained in the trade effluent include Total Suspended Solids (TSS), Total Metals and Oil and Grease. These substances are also monitored periodically to ensure that they are in compliance with regulatory limits.



Waste and Disposal

Power plant operations generate different types of industrial waste. In FY07/08, 105,263 tonnes of waste were sent for disposal, including scrap metal, boiler slag, waste oil and general waste. All ash and sludge produced from the plant operations are collected and treated before it is sent to the landfill. Moreover, all toxic wastes are treated in accordance with local regulations before disposal. As far as possible, waste materials are recycled as by-products that can be used by other industries. For example, sulphur dioxide is recycled to produce gypsum, which is sold to the construction industry. In 2007, 95,056 tonnes of gypsum were shipped overseas under the terms of the Basel Convention. The percentage of transported waste shipped internationally was 94.2% and 90.3% in FY06/07 and FY07/08 respectively.

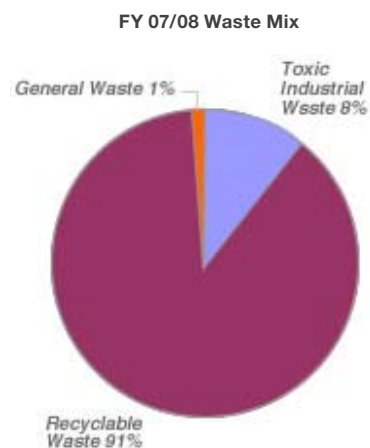


Diagram 7.9: High percentage of recyclable waste

Volume of significant spills

In FY06/07 to FY07/08, PowerSeraya had no recorded oil spills. A system involving the regular recording of oil spills started in 2007. Previously, oil spills were only recorded when an incident occurs. Nevertheless, we have an oil-spill response plan, and every year we participate in the annual oil spill exercise organised by Oil Spill Response. This ensures that we are equipped to contain and minimise the environmental damage caused by an oil spill.



Compliance with Environmental Laws and Regulations

PowerSeraya works closely with government agencies in particular the National Environment Agency (NEA) to ensure that we keep all air emissions, wastewater discharge, hazardous wastes and other environmental impacts within the regulations set out by the Singapore Government.

In the period FY06/07 and FY07/08, we had no record of any monetary fines as a result of non-compliance with environmental law and/or regulations nor any non-monetary sanctions.

The existing regulatory framework for Singapore for environmental protection consists of several regulations and acts administered by the NEA for the following environmental aspects which are incorporated as part of our ISO 14001 processes:

- Air Pollution Control, for emission of pollutants
- Water Pollution Control, for the discharge of trade effluent
- Marine Pollution Control, for spillages into the marine environment
- Noise Pollution Control, for the control of environmental noise
- Waste Management, for the control of general and toxic industrial waste, recyclable material and hazardous waste.
- Hazardous Substance Management, for the purchase, storage and use of poisons and hazardous substances
- Flammable Substance Management, for the storage of liquid petroleum gas
- Explosive Precursors Management, for the storage and use of explosive substances
- Water Supply Regulation, for resource conservation



Environmental Performance in the Workplace

“We see ourselves playing an important role in educating our employees who in turn will become environmental advocates to their families as well as the community they live in.”

Environmental sustainability is practised beyond PowerSeraya’s power plant operations to involve our employees in the workplace at the headquarters at HarbourFront Towers. We monitor our consumption on a monthly basis. This section covers our energy, paper and water consumption figures as well as our initiative to green our IT infrastructure. All figures in this section are on a calendar-year basis.



Office Resource Consumption

Energy

Energy consumption is monitored monthly to track our progress against established targets. For 2008, we set out to reduce office energy consumption by 3% over 2007 levels. We considered the impact of additional staff on energy consumption and have thus tracked energy consumption data on a per head basis. Our 2008 energy consumption performance is presented below:

Monthly average energy consumption	3.7% increase (versus 2007 levels)
Energy consumption per head [^]	9.6% decrease (versus 2007 levels)

[^] Energy consumption per head (excluding data centre) equals to monthly average energy consumption divided by monthly average headcount.

Note: The energy consumption is based on the electricity utility bills received on a monthly basis.

In terms of the energy consumption per head (excluding data centre), we achieved more than the 3% reduction target for 2008.

The 3.7% increase in the monthly average energy consumption (which includes the data centre) is due to the increase in energy use at the data centre in 2008. This is mainly attributed to the build-up of applications in the data servers as well as the activation of an emergency power supply caused by a power outage in October 2008. The increase in data centre energy consumption would have been far worse if we had not implemented the virtualisation technology as part of our initiatives to green our data centre, which is covered in [Section 7.2.iii: 'Greening Our IT Infrastructure'](#).

In terms of the indirect carbon dioxide (CO₂) emissions resulting from the office energy consumption, 2008 saw a total of 210.8 tons of indirect CO₂ emissions which is a 2.5% increase over the 2007 emissions of 205.5 tons.

Note: The 2006 IPPC Guidelines for the National Greenhouse Gas Inventories and the fuel mix data from the Electricity Market Company Market Report 2006 and 2007 were used as a basis to calculate the carbon dioxide emissions for 2007 and 2008 respectively.

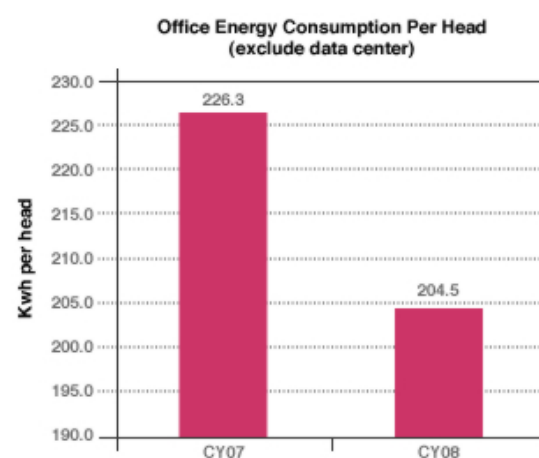


Diagram 7.10 Office energy consumption per head



Water

Our offices consumed a roughly consistent level for 2007 and 2008. In 2008, we consumed 73.28 m³. Taking into account headcount, the consumption was 0.63 m³ per person in 2008, a 13.9% decrease over 2007, after our washrooms were fitted with water-efficient faucets.

Note: The water consumption is based on the water utility bills received on a monthly basis.

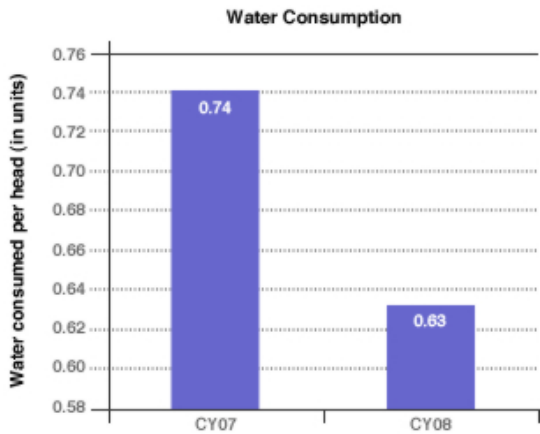


Diagram 7.11 Reduction in office water consumption by cubic metres per head

Paper

Paper consumption per head for 2008 increased 7% due to the high volume of documentation for the divestment exercise. In preparation for this, we did not set any 2008 targets for paper consumption. Nevertheless, that did not stop us from introducing the following initiatives to minimise the expected increase in paper use:

- Internal awareness talks to employees on 3Rs (Reduce, Reuse, Recycle)
- Six new recycling bins
- Default double-sided printing for all central printers

In addition, since July 2008, all paper used in our offices has come from suppliers that adopt responsible forest management practices certified with the Forest Stewardship Council.

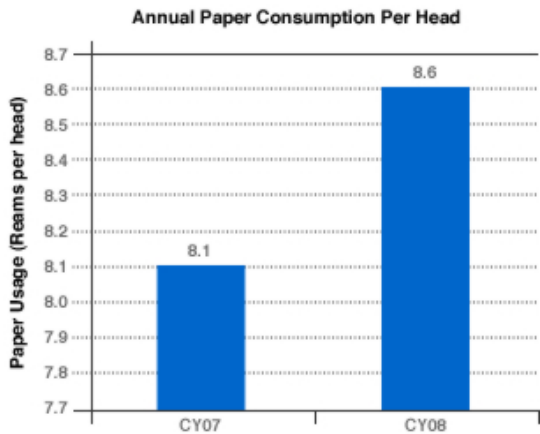


Diagram 7.12: Increase in the per-head paper consumption at the office HQ



Raising Environmental Awareness in the Workplace

In 2007 to 2008, we organised several events and initiatives to raise the environmental consciousness of our staff. We believe this helps them to understand the importance of protecting our environment so that they see purpose and meaning in the mitigation measures the company has put in place to minimise our impact on the environment. We see ourselves playing an important role in educating our employees who in turn will become environmental advocates to their families and the community they live in.

The responsibility of raising the awareness of environmental issues for staff of PowerSeraya and its subsidiaries rests with the Environmental Department. The formation of a Green Swat team in one of our subsidiaries Seraya Energy further complements the role of the Environmental Department in organising environmental events for our staff. The table below shows several of the events that were organised during the reporting period.

Event/Initiative	Objective	Theme
Environmental Poster Campaign	Posters on recycling, reducing paper and energy conservation were placed around the office to show simple things staff can do to help the environment	General Environmental
Earth Day Talk 2007	A talk by the Singapore Environment Council on the challenges facing us, energy conservation measures and other topics	General Environmental
Earth Hour Initiative	Staff was asked to switch off office lights during lunchtime to conserve energy. This initiative was also extended to include our customers	Energy Conservation
Earth Day Talk 2008	The Waterways Watch Society was invited to share their work on keeping our waterways clean	Water Conservation
1 Degree UP Challenge	An initiative held on World Environment Day to raise our office temperature by 1 degree centigrade to reduce energy consumption. E-mail messages and posters went out to gain staff support	Energy Conservation
Green POD Talk	An internal awareness talk to share the office resource consumption data and recommend simple ways staff can minimise resource use	Resource Consumption
Excursion to the Climate Change exhibition	A weekend visit to the Climate Change exhibition at the Singapore Science Centre to educate staff about the effects of climate change. The visit included family members	Climate Change



Greening our IT Infrastructure

One of the main culprits for increased energy consumption is the growing number of information technology servers and data centres. It is a challenge faced by PowerSeraya as our business grows. The forecast was for an extra 70 servers to meet the increased business data demands. Faced by limited space and a desire to reduce energy consumption, we innovated.

PowerSeraya used virtualisation software technology with VMWare. This innovative software essentially creates virtual servers that makes multiple servers think that they are sitting on individual hardware, allowing multiple operating systems to run concurrently on a single server. This saves electricity from running fewer physical servers, and means lower cooling requirements and a reduction in office rental space. Today we have about 100 virtual servers running on 7 physical servers. This potentially results in an annual energy consumption savings of about of 75% and an avoidance of approximately 70 tons of carbon emissions per year.

Assumptions: The difference in the system utilisation of the physical servers (i.e. without virtualisation technology assumed at 7%) and the VM servers (i.e. servers using virtualisation technology, assumed at 50%) is used to work out the energy savings. The power usage of the physical server (i.e. without virtualisation) is assumed at 852 watts whereas the power usage of the VM servers (i.e. with virtualisation) is assumed to be 1,225 watts. An assumption was made that the server base load utilisation is 20%, with the remaining 80% utilisation having a linear relationship to the system utilisation. The carbon dioxide emissions avoided is calculated from the energy savings as a result of virtualisation technology. The 2006 IPPC Guidelines for the National Greenhouse Gas Inventories and the fuel mix data from the Electricity Market Company Market Report 2007 were used as a basis to calculate the carbon dioxide emissions.



The Environment and The Community

“PowerSeraya had its very own Earth Hour Initiative on 31 March 2008 when the office lights at HarbourFront Towers were switched off for an hour during lunchtime.”

PowerSeraya regards the community as one of its important stakeholders and has organised several activities to engage them on environmental issues. We also support environmental causes by sponsoring conferences, talks and seminars, as well as donating to environmental NGOs and schools.

These activities which the company supports or organises aim to raise environmental awareness among the general public. It is also presents opportunities for us to share with the community about our business and how we deal with the environmental impacts of plant operations. This way, the community has a better understanding of how we deal with the day-to-day environmental issues and our role in climate-change action.

In FY06/07 to FY07/08, PowerSeraya invested in a number of environmental and social events to raise environmental awareness and to contribute back to society through our support of social causes. FY07/08 saw a 270% increase in community investments over FY06/07, thanks to greater management's commitment towards environmental initiatives with the establishment of the Environmental Department in FY06/07.

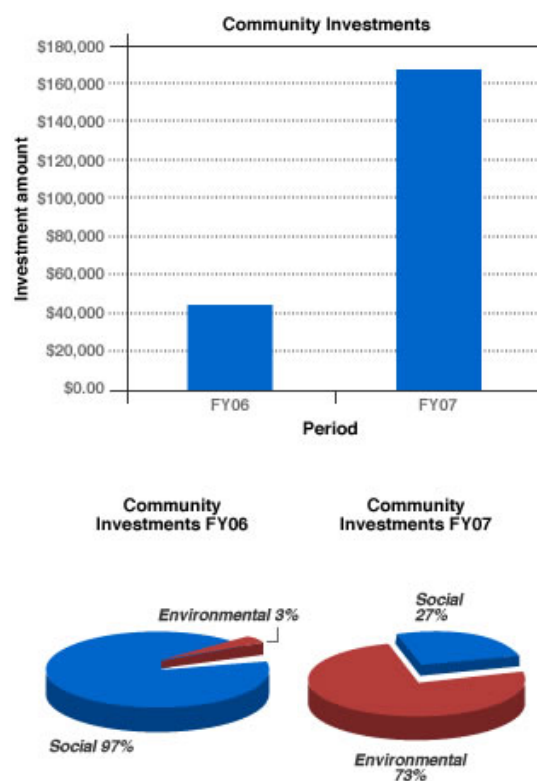


Diagram 8.1: Breakdown of community investments made by the company



Environmental Activities for the Community

“Plans for the Environmental Learning Hub include interactive displays on energy conservation and a mini-tropical forest.”

There was a significant rise in the amount and proportion of environmentally focused community investments (from S\$1,250 to S\$120,000) in FY07/08, including participation in the International Earth Festival and our support of an Environmental Learning Hub at our adopted school, Greenridge Secondary. Our initiatives with the community are driven by the Environmental Policy Statement of the CSR Policy which states the company's commitment towards educating the community to be responsible agents to the environment. Kindly note that the environmental initiatives listed below are up to period ending Dec 08.



Seraya Energy Customers pledging their support for Earth Hour



Participating in the International Coastal Cleanup event



Outreach Event by Greenridge Secondary School 2007



Our PowerSeraya colleagues participating in Earth Fest 070707



Our MD Neil McGregor participating in the inaugural CEO Semakau Run in 2007



Doing our bit for the environment by cleaning up the Singapore River with Waterways Watch



1 Degree Up Challenge

This is a joint initiative organised by PowerSeraya and our landlord Mapletree, calling upon all companies at HarbourFront Towers to raise their office temperatures by 1°C on World Environment Day 2008 with the aim of spreading the message of energy conservation and lowering CO₂ emissions. Preparations for this joint initiative involved the sending of letters to all companies in the office towers rallying them to participate in this meaningful initiative. There is also a month long poster campaign to raise the awareness of this initiative which was done in partnership with the National Environment Agency.

This initiative received an overwhelming participation rate of 100% with an outreach of about 40 companies covering an estimated 3,500 office workers.

Earth Hour Initiative

PowerSeraya had its own Earth Hour Initiative on 31 March 2008 where office lights at HarbourFront Towers were switched off for an hour during lunchtime. This is an initiative aimed at inculcating the habit of switching off the lights among the employees in the name of energy conservation. We also wanted to bring this simple but yet meaningful message to our customers and extended this initiative during Seraya Energy's Customer Night event on 28 March 2008 where customers made pledges in support of Earth Hour.

Excursion to Climate Change exhibition

In July 2008, the Family Life Committee of the Vibrancy Club and the Environmental Department to the Climate Change exhibition at the Singapore Science Centre. A total of 80 people participated in this event aimed at educating employees and their families on the topic of climate change in a fun and informal way. The exhibition ended with a buffet lunch and a climate change quiz which saw our employees' children vying for the ten prizes to be won. From the quality of answers that were submitted for the quiz, we could see that the children gained a greater understanding of the science and impacts of climate change and the action that they can take to make a difference to our fragile planet.

Singapore River Cleanup

In May 2008, we organised a Singapore River Cleanup with staff and volunteers from the Waterways Watch Society (WWS) to collect litter along the Singapore River. Through this event, our staff volunteers gained an appreciation of the work WWS does in keeping our waterways clean and healthy and the role of the community in maintaining our environment clean and green. Besides volunteering, we also donated 10 bicycles to WWS in the same year. The bicycles are now being used by WWS to run their bike patrols along the waterways of Singapore. WWS is a special volunteer group tasked to bring people together to monitor, restore and protect the aesthetics of our waterways. WWS which won the President's Award for the Environment in 2006, is one of PUB (Public Utilities Board) 3P (People, Private, Public) partners and plays an important role in raising public awareness on water conservation as well as maintaining our waterways clean and beautiful.



International Coastal Cleanup

PowerSeraya and students from Singapore Polytechnic joined hands for the first time in the International Coastal Cleanup on 20 September 2008. The annual International Coastal Cleanup is a global effort by volunteers to clean up the coastal shorelines, rivers and lakes of each country. The aim is to remove as much debris from the shorelines around the world and at the same time collects 'trash' information for the purposes of public education and the formulation of legislation or regulations on marine pollution prevention. In all, we had about 25 volunteers who covered a stretch of beach along the East Coast Park, recording information of different kinds of litter they picked up along the beach. The recorded information is then collated by Raffles Museum of Biodiversity Research, the organising party for the coastal clean-up in Singapore, for use by the relevant government agencies.

Outreach event by Greenridge Secondary School

On 26th July 08, Greenridge Secondary School (the adopted school of PowerSeraya) organised their annual outreach event 'Care for the Community, Care for the Environment' at Bukit Panjang Plaza with the aim of raising the environmental as well as cultural awareness among the Zhenghua community. PowerSeraya not only sponsored this event but also participated with our employee volunteers creating stuffed toys out of recycled material with the Greenridge students in preparation for this event. This event saw students displaying their environmental projects that they have been working on for the past 6 months as well as exhibits on the theme of recycling, environmental health and our heritage.

In July 2007, PowerSeraya also sponsored an innovative exhibition called 'A Green Way of Life' – A Digitalised Perspective', which was held to showcase the artistic talents of its 230 students based on the theme of 'Recycling and Conservation'. The public works of art were presented in various mediums such as digital art, gaming and videography and displayed at the Bukit Panjang Plaza.

Through this event the students not only gained a greater awareness on environmental issues but also developed project management and presentation skills which would be helpful in their later years. PowerSeraya is glad to be playing a contributing role in nurturing our youths to be environmentally responsible citizens in our society.

Public conference on climate change

This conference which was organised by the Singapore Institute of International Affairs in collaboration with the Civil Exchange (Hong Kong) was aimed at educating the public towards the risks, opportunities and cooperation on climate change in Asia, and possible strategies to tackle the issue. Held at the Singapore Management University on 15 May 2008, the event was sponsored by PowerSeraya and saw a distinguished panel of climate change experts and think tanks from USA, China, Japan and Hong Kong, who shared their knowledge on various issues related to climate change. The conference ended with a healthy Q&A sessions where the audience and the speaker panel went into a lively exchange of debate and discussion on complex issues surrounding climate change.



International Earth Festival – 7/7/7

This event which was held at the One Fullerton in Singapore on 7 to 8 July 07, saw PowerSeraya setting up a booth to raise awareness about climate change and other environmental issues to the general public. Some of the event highlights were stage performances, interactive games, educational talks as well as on-site workshops. This event, which was endorsed by the global 'Friends of Live Earth' campaign, the Singapore Environment Council (SEC) and Eco-Singapore, was aimed to kick-start positive habits of energy saving to show people that every single effort helps towards the larger picture on Global Warming.

Environmental Learning Hub

PowerSeraya committed a sum of S\$170,000 over two years to establish an Environmental Learning Hub (ELH) at Greenridge Secondary School. In FY07, we disbursed our first contribution of S\$85,000 to the school. The ELH, when fully constructed in 2009, will function as a resource centre for the eleven schools in the West 6 cluster with an estimated outreach potential of 11,000 students and 770 education staff. It also serves to raise the environmental awareness of the Zhenghua community through talks and seminars by invited speakers. Plans for the ELH include interactive displays on energy conservation and alternative energy sources, a learning lab on the environment and a mini-tropical forest.

Semakau CEO (Corporate Environmental Outreach) Run

On 19 November 2008, PowerSeraya donated S\$30,000 to the Semakau CEO Run, a fund-raising event to support the environmental work of six non-governmental organisations which include the Singapore Environment Council, the Nature Society (Singapore), ECO Singapore, the Restroom Association of Singapore, the Singapore Institute of International Affairs and the Halogen Foundation Singapore. Our Managing Director took a personal interest in this event which saw him participating in the 5km run which is held on Pulau Semakau, Singapore's offshore landfill island.

This is the second time PowerSeraya has participated in this event since the inaugural one held in 2007.

Clean and Green Singapore 2008

PowerSeraya sponsored Singapore's largest environmental event – Clean and Green Singapore (CGS) 2008. The launch of the event (on 31 Oct 2008), which was graced by Prime Minister Lee Hsien Loong, saw the company sponsoring among others, two energy-themed game booths where the public could learn simple energy saving tips through the games. CGS 2009 is an annual campaign with a string of environmental events/initiatives organized throughout the year to raise environmental awareness and inspire the public to care for the environment. Some of the fringe events include the Recycling Day held at Yuhua Square, CGS School Carnival held at Suntec City and Central Singapore Green Reading Month held at various libraries.



Social Investments

“Over 750 ideas were generated for the Ideas for Charity Campaign, and for each, we donated to MINDS to support its annual camp.”

Our social investments in FY06 saw close to S\$40,000 spent on 12 events and initiatives, including the Innovation Week Charity Drive 2006 and ‘A Very Special Walk’.

Innovation Week fund-raising drive

This event from 15 to 23 September 2006 raised S\$15,540 for the MINDS (Movement for the Intellectually Disabled of Singapore) Youth Group. During that week, a total of 777 ideas were generated for the ‘Ideas for Charity Campaign’ under the company’s Annual Core Values Campaign Innovation Week. For each idea that was generated during this week-long event, the company donated a certain amount to the MINDS Annual Camp held for over 200 campers with intellectual disabilities. The annual camp is organised to expose the intellectually disabled to unfamiliar environments that are distinctively different from the comfort zones of their homes. It also serves to foster stronger ties and understanding between these special needs youths and the volunteers.

Participation in ‘A Very Special Walk’

As part of our efforts to help children with special needs, since 2005, under the umbrella of the National Electricity Market of Singapore (NEMS) Group, PowerSeraya and its staff have supported the annual “Very Special Walk”, a fund-raising event in aid of the Pathlight School for autistic children. The funds raised were used for the construction of the new school which is also home to the Autism Resource Centre (ARC). On 14 July 2007, 35 staff and their families participated in ‘A Very Special Walk’ at Bishan Park. We matched staff donations dollar for dollar and donated S\$2,856 for a new school. On 12 July 2008, the same charity initiative was held but this time the funding focus was on the Social Enterprise Unit of the ARC which helps to provide the children with a blend of mainstream academics and essential life skills learning.

Volunteering time for children of Child@Street 11

Staff volunteers participated in a NEMS (National Electricity Market of Singapore) organised outing for Child@Street 11, a non-profit organisation which helps young children from low-income and dysfunctional families. In 2006 and 2008, our staff took time off their work commitments to accompany these children for a trip to the Science Centre and the Butterfly Park at Sentosa respectively.

Staff contributions to the needy

PowerSeraya subscribes to the SHARE (Social Help and Assistance Raised by Employees) programme, where employees give to the Community Chest on a monthly basis through their salary. Our support for the SHARE programme saw PowerSeraya being awarded the Bronze SHARE award. In FY07/08, the company increased the number of SHARE contributors and amount of contributions by 18 % and 39% respectively. The Community Chest is a fund-raising arm of National Council of Social Service with the purpose of ensuring that every person has the opportunity to live a life of dignity to his or her fullest potential within our society. Our company is glad to facilitate the raising of funds through the SHARE programme and in so doing, support charities that can care for and serve the less advantaged.

(The contributions made through the SHARE programme are not included in the social investment figures shown in this report as these are direct contributions made by employees and not by the company).



Social Performance - Promoting a Safe, Healthy and Nurturing Environment

“PowerSeraya has been creating a vibrant and nurturing environment where there are ample opportunities for staff to develop, as well as enjoy a good work-life balance.”

As a company certified with OHSAS 18001, occupational health and safety is an important aspect of our power plant operations and this regulated system has played a vital role in maintaining our good safety record. Besides ensuring our minimum standards of health and safety adhere to at least the most stringent global standards, we take a proactive approach towards promoting safety awareness at the plant.

We know that we have to go beyond providing a safe and healthy work environment. For the past few years, we have been creating a vibrant and nurturing environment where employees can enjoy a good work-life balance and where there are ample opportunities for staff to develop themselves as part of our strategy to nurture and retain talent.

PowerSeraya’s Core Value of ‘Nurture’ extends beyond our employees to the community through programmes which provide opportunities for youth to grow academically and contribute to society.

For the company to pursue an environmentally sustainable path, it must be sustainable in itself. There is no better indicator of this than corporate success and growth. We believe that the best route to this is to ensure the well-being of our employees, which will in turn inculcate greater loyalty and subsequently, help the company to thrive.

Please refer to our corporate website to view our core values:

http://www.powerseraya.com/index.php?option=com_content&task=view&id=16&Itemid=28



Safety and Health at the Workplace

The company has a **Quality, Health, Safety and Environmental (QHSE) Policy**¹ which outlines our commitment to safety and health. Being certified with OHSAS 18001 since 2007 also means we have a system to identify safety and health hazards and risks as well as procedures and measures (which are reviewed periodically) to prevent accidents and incidents.

The local regulation with particular influence on the compliance measures in OHSAS 18001 is the Workplace Safety and Health Act.

1) For our QHSE Policy, please refer to

http://www.powerseraya.com/index.php?option=com_content&task=view&id=23&Itemid=9



Raising Safety Awareness

“The safety measures and procedures at the workplace have been effective in keeping the injury and fatality rates low in the company.”

Safety awareness is kept high – the safety and health policies and regulations of the company are communicated through handbooks available to every employee and contractor involved in plant operations.

We organise regular safety programmes to educate staff and contractors. For example, the Utilities Group conducts a bi-monthly Safety Drive, a series of safety programmes mapped out by each department to drum in the idea of “Safety Begins With Me”. Besides department-sharing sessions on safety activities, the OHS Department also invites external parties to conduct talks on safety and health.

On 30 July 2008, we held a large-scale emergency evacuation drill in the plant which involved the participation of our contractors. Through this major exercise which is held on an annual basis, employees and contractors were able to better appreciate their respective roles and responsibilities in an emergency evacuation situation which would serve them well should an actual situation occur in the plant.

Every year, we celebrate PowerSeraya Safety Day to recognise the efforts that have contributed to our good safety record. Of particular significance is the attainment of the OHSAS 18001 Accreditation which was celebrated at PowerSeraya Safety Day 2008. Certificates and tokens of appreciation were presented to employees for the time and effort they have put in to achieve the OHSAS 18001 Accreditation.



Injury, Lost Days and Fatality Rate

Our rate of injury is measured by the average frequency rate (AFR) whereas the rate of loss days is measured by the average severity rate (ASR). AFR is the number of accidents per million man-hours worked and ASR is number of man-days lost per million man hours worked. The AFR and ASR figures, as well as the fatality rate for the period of FY06/07 to FY07/08, are shown below.

	PowerSeraya (FY06, FY07)	National Average (2006, 2007)^
AFR	2.24, 0.0	1.9, 1.9
ASR	60.39, 0.0	125, 116
Fatalities (Work-related)	0.0, 0.0	3.1, 2.9

The AFR and ASR figures have improved markedly in FY07/08 compared to FY06/07, and both figures are well under the national average. There were no work-related fatalities in FY06/07 or FY07/08. This demonstrates that our safety measures and procedures have been effective in keeping the injury and fatality rates low.

[^] The national average figures were taken from the Workplace Safety and Health Indicators released by the Ministry of Manpower which are expressed on a calendar year basis versus the company's safety figures which are on a financial year basis.



Staff Welfare and Work-Life Balance

“To encourage staff to have a healthy family life, the Vibrancy Club organises recreational activities.”

PowerSeraya believes in having a healthy work-life balance as part of the strategy of keeping staff productive, motivated, engaged and loyal. We achieve this through pro-family policies and practices, and the initiatives of the Vibrancy Club, a group of employee volunteers who organise activities that promote workplace health and family life. Recent events include a visit to the Night Safari, a fishing competition and a trip on the Singapore Flyer.

Pro-family practices

Over the years, PowerSeraya has developed pro-family policies to cater to the demands of working parents who need to juggle work and family commitments. This is also in line with the government's recent push for pro-family practices. Some of these include extended maternity and childcare leave. The former was implemented about four months prior to being legislated so that some of our female employees who were due to give birth could benefit from the enhanced policy. In addition, the company also provides childcare sick leave for female employees and paternity leave for male employees which are over and above what is stipulated in the Singapore Employment Act. To encourage staff to have a healthy family life, the Vibrancy Club organises recreational activities which give the employees and their family members ample opportunities to participate in. A Flexible Benefits Plan is also available to give employees a fixed sum per year to cover dental expenses, holiday expenses and children's education.

Maternity Leave

FY	No. of female employees who gave birth (A)	No. of maternity leave days taken (B)	Average maternity leave days per female employee (C) = (B)/(A)
05 06	5	270	54
06 07	6	340	56.7
07 08	7	504	72
Grand Total	18	1114	61.9

Table 9.1: Maternity leave statistics in the company from FY05 to FY07.



Childcare Leave

FY	Employees who took childcare leave (A)	No. of childcare leave days taken (B)	Average childcare leave days per employee (C) = (B)/(A)
05 06	98	230.5	2.4
06 07	100	214	2.1
07 08	105	219	2.1
Grand Total	303	663.5	2.2

Table 9.2 Childcare leave statistics in the company from FY05 to FY06.

Childcare Sick Leave

FY	No. of female employees (A)	No. of childcare sick leave days taken (B)	Average childcare sick leave days per female employee (C) = (B)/(A)
05 06	8	24	3.0
06 07	9	33	3.7
07 08	16	53	3.3
Grand Total	33	110	3.3

Table 9.3: Childcare sick leave statistics in the company from FY05 to FY06.

Paternity Leave

FY	No. of paternity leave days taken
05 06	9
06 07	10
07 08	9
Grand Total	28

Table 9.4: Paternity leave statistics in the company from FY05 to FY 07.



Providing Healthcare Needs and Promoting a Healthy Lifestyle

PowerSeraya provides benefits for staff healthcare and opportunities to encourage employees to stay healthy. Workers covered by the Comprehensive Co-Payment Scheme or the Medisave-Cum-Subsidised Outpatient Scheme have their medical expenses substantially paid for by the company. Employees can also make use of the Flexible Benefits Plan to pay for medical insurance.

To promote a healthy lifestyle, we organise sports and healthy activities. Keep-fit programmes involving badminton, bowling and pool are organised weekly or fortnightly, and in-company tournaments of games such as sepak takraw are organised every year.

We also sponsor employees to participate in events like the JP Morgan Corporate Chase Challenge, the Jurong Island Dragon Boat Race and Temasek Games. They are also encouraged to join an annual health screening exercise at subsidised rates so that they can take a personal interest in their own well-being.

Company/staff events

PowerSeraya organises annual events to celebrate staff efforts and achievements, which also foster staff bonding. Every year, the Vibrancy Club organises either a Dinner and Dance or a Family Day. To encourage greater camaraderie, informal events such as the financial year-end party or festive celebrations such as Christmas parties, are also sometimes held. Each year, employees also receive long service awards as recognition of their loyalty.



Staff participating in the regular dragon boat training sessions as part of the Workplace Health Committee initiatives



Staff and their families enjoyed a prawning competition organised by the Vibrancy Family Life Committee in 2007



Going for the JP Morgan Run as a PowerSeraya Family



Enjoying staff and family bonding at the PowerSeraya Family Day 2007 held in Sentosa



Nurturing Human Capital

Part of our growth strategy is to nurture and retain talent by investing in our staff through training and development for employees throughout their career to enhance their professional and personal competencies. These include:

- Seminars, workshops and conferences
- In-company training programmes
- On-the-job training
- Practical attachments
- Courses that lead to an academic qualification

Employees who have consistently achieved good performance ratings have a chance to apply for 100% support for part-time academic or professional qualifications that are directly linked to their job scope. So far, PowerSeraya has sponsored 26 employees to upgrade their skills and expand their knowledge base. Of these, 19 are taking degree courses.

Also, the Management Development Programme develops the management and leadership skills of selected staff and helps talent retention.

At PowerSeraya, all employees receive regular performance and career development reviews where their performance is appraised by their supervisors against set targets. The supervisors also discuss the training & development needs of the employee during the performance appraisal process where competency/skills gaps are identified to determine the training needs of the employee for the following year.

In FY07/08, we invested about S\$730,000 in training, a dip from FY06/07's S\$901,000. Similarly, the average training hours received per employee saw a reduction from 52.0 in FY06 to 33.4 in FY07. The reduction in training investment in FY07 was not because of a cut in training budget but rather due to two factors. One is the execution of the Management Development Programme in FY06, a seven day course involving 106 supervisory staff from various departments, which led to a surge in training expenditure for that year. The other factor is due to the fact that staff had to reallocate their priorities to deal with the work required for the divestment of the company, which meant less time for training. Nevertheless, the average investment of S\$1,800 per employee is 86% higher than the median training expenditure per employee of S\$969 from the Mercer 2007 Corporate Benchmark Monitor Singapore Survey.

	FY 05/06	FY 06/07	FY 07/08
Total Training Expenditure (in SGD)	921,010	901,000	730,000
Total Training Hrs	13,682	19,814	13,468
Average Training hours per employee	36.68	52	33.42

Table 9.5 : Training Statistics for the FY05 to FY07 period.



Competency-based recruitment practices

We believe in hiring based on the competencies required, following our technical competency inventory for each position from which we draw up the job description. As a testimony to our philosophy and practice, we signed the Employer's Pledge of Fair Employment Practices in 2006. PowerSeraya also embraces diversity and has been diversifying the workforce to meet changing business needs. Job applications are open to all and candidates are recruited on their merits with no discrimination either for or against due to race, gender or nationality.

Race

PowerSeraya's ethnic distribution has a good representation of the minority ethnic groups and reflects our philosophy of giving equal employment opportunities to all ethnic groups.

Ethnic Group	National Ethnic Distribution (%)	PowerSeraya Ethnic Distribution (%)
Chinese	75	60
Malay	14	32
Indian	9	7
Others	2	1

Table 9.6: Ethnic Distribution of the Workforce.

Nationality

The increasing proportion of foreign nationals is to meet our business needs (eg. for specialised engineering expertise at the power plant) and also with a view of developing an organisation with the diversity of languages and cultures that would be an invaluable human asset should the company embark on its regionalisation plans in the future.

YEAR	FY 04/05	FY 05/06	FY 06/07	FY 07/08
Foreign Born Nationals (%)	2.7%	3.7%	4.7%	7.2%

Table 9.7: Foreign Born Nationals in the Workforce.



Gender

To better tap the female workforce in Singapore, we have been consciously increasing the female mix in the workforce, subject to the merit-based recruitment system. Over the years, we have seen an estimated increase of six percentage points in the proportion of female employees over the FY04 to FY07 period. In fact, the percentage of the total workforce comprising of female employees at the corporate office headquarters is over 60% in FY07/08. This is higher than the Singapore's average of 43.3% (Source: National Statistics for Labour Force in 2008 by Gender)

Gender Mix of company

YEAR	FY 04/05	FY 05/06	FY 06/07	FY 07/08
Females in PowerSeraya (%)	14.2%	15.4%	17.8%	20.6%

Table 9.8(a): Gender Mix of workforce.

Gender Mix by Workplace Location as of FY 07/08

LOCATION	FEMALES (%)
Pulau Seraya & Jurong Power Stations	4.5
Corporate Headquarters	61.9

Table 9.8(b): Gender Mix of Workforce by Location.



Staff Strength and Turnover

The number of full-time* employees increased to 403 in FY07/08. This 5.8% increase over the previous year is mainly due to new employees hired to support our expansion plans. There were no part-time** employees during the reporting period. In FY08/09 we had one part-time employee. However, the company allows for flexi-work arrangements upon request by our employees. In FY07/08, we have one female employee working on a tele-commuting basis to help her strike a balance between work and child-minding commitments.

Staff turnover increased from 6.3% to 9.4% from FY06/07 to FY07/08, due mainly to the buoyant job market and contributed in part by PowerSeraya's pending divestment from its parent company. Our turnover rate compares favourably to the Singapore's All Industries Average Turnover Rate of 24% (for year 2006 as well as 2007) and is still below the Petroleum, Chemical and Pharmaceutical Industry Turnover Rate of 12.0% to 13.6% over the 2006 to 2008 period.

The company's pro-family practices and its continued emphasis on providing a nurturing environment, where employees can achieve work-life balance and career development, helped to keep our staff turnover below the industry average.

* There are two types of full-time employees in PowerSeraya Ltd. Those under the old scheme (permanent employment) and those under the two- or three-year renewable term contract subject to satisfactory employee performance.

**Part-time are deemed to work less than 30 hours a week as stipulated in the Singapore Employment Act.

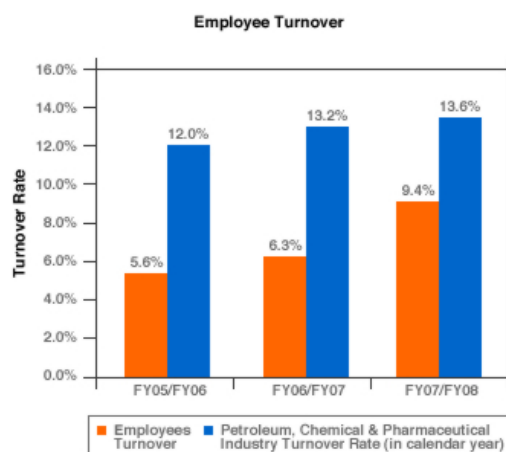


Diagram 9.9 : Employee Turnover Statistics for the period FY05/06 to FY07/08

(Note: The Petroleum, Chemical & Pharmaceutical Industry Turnover figures are on a calendar year basis, from 2006 to 2008)



Nurturing the Community

“Our core value of ‘Nurture’ extends beyond the company to the community through the social programmes it provides for youths to develop themselves academically and socially.”



Volunteering time for Children of Child@Street 11



Staff working together to generate ideas in the Innovation Week



Children performing during 'A Very Special Walk 2007' at Bishan Park

Nithiah Nandan Book Prize

This book prize was set up in 2007 in honour of the late Mr Nithiah Nandan, former executive secretary of the Union for Power and Gas Employees for his support for lifelong education and dedication to serving others before self. The Book Prize is open to the employees' children (aged 10 to 24) who have shown exemplary performance outside of academic areas, with emphasis on community work, caring for the environment, music, arts and sport. In 2008, we awarded the first book prizes (worth S\$1,000 each) to three deserving youths.

NTU Scholarships Programme

In 2008, the company established the NTU (Nanyang Technological University) Scholarship Programme, making it the first energy company to set up private support with NTU. This scholarship is a bond-free programme open to all second year students from selected courses at the College of Engineering, College of Science and the Nanyang Business School. Each year, between two and six outstanding undergraduates will be selected to receive this prestigious scholarship award worth S\$8,000 per annum. To date, PowerSeraya has given out two awards. The awardees are also given internship opportunities at PowerSeraya where they can gain working experience through a structured, cross-functional on-the-job training programme.

Internships

Every year, we accept interns from tertiary institutions, who will be guided by a senior officer. Through this internship opportunity, the students can appreciate how their fields of study are applied in real working life. In FY06/07 to FY07/08, we had 10 interns.



Social Performance - Product Responsibility

“We believe that engaging customers with energy conservation options empowers them with the knowledge to use electricity efficiently.”

PowerSeraya sees itself playing a vital role in providing a reliable supply of electricity to end users who depend on it for their day-to-day business. The company, through its retail arm Seraya Energy, has been engaging customers to better manage their energy consumption and reduce their carbon footprint at the same time.

We believe that engaging customers with energy conservation options empowers them with the knowledge to efficiently use the electricity that is being sold to them, while at the same time executing our role in helping to mitigate the effects of climate change. We believe this responsible approach has resulted in many satisfied customers which is important to the long-term sustainability of our business.



Customer Satisfaction

Seraya Energy engaged Synovate, an independent consumer research firm, to get feedback from our existing and potential customers. The survey, which randomly targeted customers at all levels, drew 177 respondents and was conducted from April to December 2007. Customers were asked to rate the sales team and customer care service team on their knowledge of the product, how helpful they were in response to enquiries, their level of attentiveness and politeness. The rating scale used ranged from 1 (Poor) to 5 (Excellent).

Seraya Energy achieved a high customer satisfaction rating with 81.4% of the customers giving a '4 (Good)' rating or above. In addition, about 92% of the customers who responded to the survey said they were likely to recommend Seraya Energy to their friends.



Diagram 10.1: Overall customer satisfaction rating of Seraya Energy based on customer survey.



Education on Managing Energy Consumption

“These are the value-add services which Seraya Energy provides to its customers to help them reduce their energy consumption, and this has contributed to the high customer satisfaction levels.”

Education on Managing Energy Consumption

To help customers save on their energy consumption, Seraya Energy has made it easy for them to understand their electricity bills. Our customer portal, SEnergy, provides them with 24/7 online access to their bills and consumption reports. Customers can retrieve a summary of their bills for the past six months or extract energy consumption over customised periods for a more comprehensive assessment as a guide for future use. This way, they are empowered with the knowledge to better manage their energy consumption and take steps to save energy.

Energy saving tips

Seraya Energy also provides practical energy-saving tips on their website to educate customers on simple things they can do, as well as green procurement practices they can adopt to minimise energy consumption. In February 2007, Seraya Energy launched the Little Blue Book which shows customers and the general public energy savings measures they can use, as part of the company's efforts to educate the community on energy conservation. During the book launch, customers were also invited to energy saving seminars which ran over four days with an average of 15 participants attending each seminar session. The energy saving seminar gave participants an overview of the energy market and how they could benefit from having a contract with an energy retailer to hedge against the electricity price volatility.

Energy efficiency training

Seraya Energy teamed up with United Premas to offer a complimentary Energy Efficiency Training Course, held on 15 May 2008 for 26 facility managers and engineers. The course covered efficiency issues in air conditioning, air handling and heat recovery systems design, and also energy benchmarking and audits. At the end of the session, participants were given energy self assessment forms for their own premises which they could use and then return for complimentary review.

Plant visits for Singapore Manufacturers Association

As a partner of Singapore Manufacturers Association (SMA), Seraya Energy not only offers preferential electricity packages to SMA members, but also organises plant tours for them. In FY06/07 to FY07/08, three plant visits were organised in which SMA members (who may also be customers) gained an insight into electricity generation and the multi-fuel options PowerSeraya has in its plants.

GRI Content Index - Performance Indicators, Standard Disclosures and Management Approaches

Table 11.1 - GRI Performance Indicators

*FY06/07 refers to the period Apr 06 to Mar 07; FY07/08 refers to the period Apr 07 to Mar 08.

All dollar values are denominated in Singapore currency.

No	GRI	PERFORMANCE INDICATOR	FY 06/07*	FY 07/08*	Section	Remarks
	A)	ECONOMIC PERFORMANCE				
1	EC1	1a. Total Revenue (In S\$'000)	2,623,607	2,792,837	4.2	
		1b. Total Costs (In S\$'000)	2,436,766	2,554,720		Refer to Annual Report 2007/2008 (Pg 74)
		1c. Total Earnings (In S\$'000)	168,060	218,296	4.2	
		1d. Employee Compensation (In S\$'000)	40,135	42,844		Refer to Annual Report 2007/2008 (Pg 74)
		1e. Total Assets (including leased assets) (In S\$'000)	1,894,618	2,113,450		Refer to Annual Report 2007/2008 (Pg 59)
		1f. Shareholder's funds (In S\$'000)	1,073,426	1,212,749		Refer to Annual Report 2007/2008 (Pg 59)
		1g. Earning per share (in S\$)	0.19	0.25	4.2	
		1h. Return on Equity (%)	16.11	19.1	4.2	
		1i. Donations and other community investments (In S\$'000)	46.54	170.95	4.3, 8	
2	EC4	2a. Significant financial assistance received from government	NIL	\$34,000	4.3	
3	EU9	3a. Planned capacity (MW) against projected electricity demand over the long term	3,100 (licensed)	3,100 (licensed)	3	

No	GRI	PERFORMANCE INDICATOR	FY 06/07*	FY 07/08*	Section	Remarks
	B)	ENVIRONMENTAL PERFORMANCE				
4	EN3	4a. Fuel Oil consumed for power generation (in tons)	1,550,551	1,295,196	7.1.iv	
		4b. Natural gas consumed for power generation (BBTU)	34,860	34,457	7.1.iv	
5	EN8	5. Total water consumption for power generation (m3)	2,186,600	1,992,500	7.1.vi	
6	EN16	6a. Total direct GHG emissions (CO ₂ only) by weight in tons per MWh arising from power generation	0.592	0.582	7.1.v	CO ₂ intensity historical figures (2002 to 2007)
		6b. Total indirect GHG emissions (CO ₂ only) in tons for office headquarters	205.5 (calendar year 2007)	210.8 (calendar year 2008)	7.2.i	
7	EN18	7. Initiatives to reduce GHG emissions and reduction achieved	Energy efficiency improvements & Fuel switching	Energy efficiency improvements & Fuel switching	4.3, 6, 7.1.v	
8	EN19	8. Emissions of ozone-depleting air emissions by weight (kg)	157.5	135	7.1.v	
9	EN20	9a. SO ₂ emissions by weight (in tons/MWh)	0.0031	0.0029	7.1.v	Within regulations
		9b. NO ₂ emissions by weight (in tons/MWh)	Not available	Not available	7.1.v	
10	EN21	10. Total water discharge by quality and destination (includes thermal discharge)	BOD: <20mg/L COD: <20mg/L TSS: <30mg/L Total Metals: <1mg/L Oil & Grease: <10mg/L Temperature:< 30°C	BOD: <10mg/L COD: <40mg/L TSS: <10mg/L Total Metals: <1mg/L Oil & Grease: <5mg/L Temperature:< 30°C	7.1.vi	Within regulatory limits
11	EN22	11. Total weight of waste by type and disposal method	Toxic Industrial Waste: 7,035 ton Recyclable Waste: 126,156 ton General Waste: 540 ton Total = 133,731 tons	Toxic Industrial Waste: 8,611 ton Recyclable Waste: 96,090 ton General Waste: 562 ton Total = 105,263 tons	7.1.vii	Within regulations
12	EN23	12. Total number and volume of significant spills	No recorded oil spills	No recorded oil spills	7.1.vii	
13	EN24	13a. Weight of transported (import & export) or treated waste deemed hazardous under the terms of the Basel Convention	125,909 tons (gypsum) 65 tons (boiler slag)	95,056 tons (gypsum) 0 ton (boiler slag)	7.1.vii	Within regulations
		13b. % of transported waste shipped internationally	94.2	90.3	7.1.vii	
14	EN26	14a. Initiatives to mitigate SO ₂	Flue Gas Desulphurization System	Flue Gas Desulphurization System	7.1.v	
		14b. % of SO ₂ mitigated	92.92	92.94	7.1.v	
15	EN28	15a. Monetary value of significant fines	NIL	NIL	7.1.viii	Within regulations
		15b. Total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	NIL	NIL	7.1.viii	

No	GRI	PERFORMANCE INDICATOR	FY 06/07*	FY 07/08*	Section	Remarks
	C)	SOCIAL PERFORMANCE				
16	LA1	16a. Total employees (full-time)	381	403	9.2.iii	
		16b. Total employees (part-time)	0	0	9.2.iii	
		16c. Total employees (contract basis)	0	0	9.2.iii	
		16d. Total number of interns	6	4	9.3	
		16e. Female employees of total workforce (%)	17.8	20.6	9.2.ii	FY 05/06 data available
		16f. Foreign born nationals of total workforce (%)	4.7	7.2	9.2.ii	FY 05/06 data available
17	LA2	17a. Total no. of employee turnover	24	38	9.2.iii	FY 05/06 data available
		17b. Rate of employee turnover (%)	6.3	9.4	9.2.iii	FY 05/06 data available
18	LA4	18. Percentage of employees covered by collective bargaining agreements (%)	56.96	53.85	5.3.i	
19	LA7	19a. Rate of injury (including fatalities)	AFR = 2.24	AFR = 0	9.1.ii	
		19b. Rate of lost days	ASR = 60.39	ASR = 0	9.1.ii	
		19c. Rate of work-related fatalities	0	0	9.1.ii	
20	LA10	20a. Total training investment (\$)	901,258	726,180	9.2.ii	FY 05/06 data available
		20b. Average training expenditure per employee (\$)	2,365.50	1,802	9.2.ii	
		20c. Average training hours per employee	52.0	33.42	9.2.ii	FY 05/06 data available
		20d. Training places per employee	2.63	1.69	9.2.ii	
21	LA12	21. Percentage of employees receiving regular performance and career development reviews	100%	100%	9.2.ii	
22	SO2	22a. Percentage of business units analyzed for risks related for corruption	100%	100%	5.2.ii	
		22b. Total number of business units analyzed for risks related for corruption	100%	100%	5.2.ii	
23	HR5	23. Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these	Covered by Collective Agreement	Covered by Collective Agreement	5.3.i	
24	PR5	24. Customer satisfaction levels	No customer survey this year	81.4% ('Good' rating & above)	10.1	

Table 11.2 – References for Standard Disclosures and Management Approaches

Standard Disclosure	Section
Strategy and Analysis	
1.1 - Managing Director's Message	1, 3.1
1.2 - Key impacts, risks and opportunities	1, 3.1, Annual Report 2007/2008 (Pgs 6 - 14)
Organisational Profile	
2.1 - Name of Organisation	3
2.2 - Brands, products, services	3
2.3 - Operational structure of the organisation	3.2
2.4 - Location of the organisation's headquarters	3
2.5 - Number of countries in which the organisation operates	3
2.6 - Ownership	3
2.7 - Markets served	3
2.8 - Scale of the organisation	3
2.9 - Significant changes during reporting period	3
2.10 - Awards/Achievements	3.3
Report Parameters	
3.1 - Reporting Period	2
3.2 - Previous reports (if any)	2
3.3 - Reporting cycle	2
3.4 - Contact point on report queries	2.2
3.5 - Defining the report content	2.2
3.6 - Report boundary	2.1
3.7 - Specific limitations on scope/boundary of the report	2
3.8 - Basis for reporting on subsidiaries	2.1
3.9 - Adherence to GRI Indicator Protocols	2.1
3.10 - Effects of restatements from previous reports (if any)	2
3.11 - Changes from previous reporting periods (if any)	2
3.12 - GRI Content Index	11
3.13 - Assurance	12

Table 11.2 – References for Standard Disclosures and Management Approaches

Standard Disclosure	Section
Corporate Governance, Commitments and Stakeholder Engagements	
4.1 - Governance Structure of the organisation	5.1
4.2 - Chair of the highest governance body	5.1
4.3 - Members of the Board	5.1
4.4 - Mechanisms for providing direction and recommendation to the Board	5.1
4.5 - Linkage between compensation for the Board and sustainability performance	5.1
4.6 - Process to avoid conflict of interests	5.1
4.7 - Qualification and expertise of the Board in guiding sustainability strategy	5.1
4.8 - Internally developed statements of mission, values, etc	5.1
4.9 - Procedures for the Board to oversee sustainability performance	5.1
4.10 - Process to evaluate the Board's performance on sustainability	5.1
4.11 - Precautionary principle	5.2, 5.2.i, 5.2.ii
4.12 - Subscription to external charters, principles	5.3.ii
4.13 - Membership in associations with advocacy organisations	5.3.ii
4.14 - Stakeholder groups	5.3.i
4.15 - Basis of identification and selection of stakeholders	5.3
4.16 - Approaches to stakeholder engagement	5.3.i
4.17 - Key topics and concerns raised during stakeholder engagement	5.3.i
Management Approaches	
Economic	4, 4.1, 4.2, 4.3
Environmental	6, 6.1, 7, 7.1, 7.1.i, 7.1.ii, 7.2
Labour	9, 9.2, 9.2ii
Society	2.2, 5.2.ii
Human Rights	2.2, 5.3.i
Product Responsibility	10

Independent Assurance Statement

To the Management and Stakeholders of PowerSeraya

Ère-S was commissioned by PowerSeraya to provide assurance that the content of its Sustainability Report is accurate, reliable and supported by solid data collection systems. For qualitative information, the assurance is based on evidence that the statements truly reflect PowerSeraya's operational and strategic activity.

Responsibility

Ère-S responsibility is to execute the assurance engagement, prepare the assurance report and this assurance statement, which represents Ère-S' independent opinion. All information including statements and figures contained within the Sustainability Report, are the responsibility of PowerSeraya. The assurance engagement was based on PowerSeraya's Sustainability Report dated on 11th of February 2009 and was subsequently amended on 11th of March 2009 following the recommendations that arose from the audit. Ère-S is not responsible for any subsequent change made to the content of the report and to any change of interpretation of the statements and figures due to the web page format of the published version and any inserted web links to other sources of information.

Independence

Ère-S has been engaged by PowerSeraya to review the elements of its Sustainability Report and was not responsible for any prior work on the Report. The activity of Ère-S is independent to PowerSeraya and contains no other financial interest in the business operation of PowerSeraya.

Scope

The assurance engagement covers the Sustainability Report statements and figures related to PowerSeraya's strategy and operations in the context of sustainability. This includes all GRI indicators and other sustainability-related figures, strategy statements, management systems and sustainability/CSR associated processes, policies and procedures.

Limitations: Ère-S did not undertake work to confirm whether or not all relevant issues relating to stakeholders or sustainability performance are included in the report. Figures or statements not related to sustainability and already supported by existing documents, such as the annual report, were not covered in the audit. These include the organisation profile (GRI disclosures 2.1 to 2.10), corporate structure and corporate financial and economic performance, technical descriptions and figures of machineries, plants and production processes. Finally, Ère-S did not assure the Sustainability Report for GRI application level check.

The assurance engagement was drawn on the ISAE 3000 and AA1000AS standards, which were used as guidance for the audit process, methodology and evaluation criteria.

Assurance level

Ère-S provided an overall moderate level of audit, which did not include in-depth and multi-level research, statistical analysis or company performance analysis. Evidence gathering from sources with simple data verification was the only requirement applied for all audited data. However, for key elements that were of a high level of materiality, a more detailed audit analysis was used.

The following criteria were used to evaluate quality of the report content: Accuracy, which defines the level of correctness of information in regard to the source it is obtained from. Reliability, which defines how the information is supported by reliable data collection systems. Integration (for qualitative information), which defines the level of support from the management and the evidence of implementation.

Methodology

- Step 1. Sorting report information and defining audit requirements: Ère-S consultants read through the Sustainability Report to select and classify all pieces of information to be audited. More than a hundred statements and data sets were identified and classified into an assurance table provided by Ère-S and validated by the reporting team before being used as the basis for the audit process.
- Step 2. Audit execution: Interviews of key staff were organised to collect evidence of data and obtain an understanding of the underlying processes. A total of 12 interviews were held at the headquarter offices and two power plant stations. Interviewees included key individuals from the senior management team [Managing Director, Vice President (Corporate Services)], the departments/sections of human resource, environmental and corporate services, occupational health and safety, chemistry and environmental, terminal operations, internal audit as well as the union.
- Step 3. Information assessment and verification: Information and answers collected during the audit stage were assessed by Ère-S consultants and recommendations were expressed.

Findings and Recommendations

The accuracy of the vast majority of the elements audited could be validated through proof of evidence provided. In some instances, duplicate of information could be found on different sources, which reinforced the reliability of the information. The issues found were minor and included mismatches between the data source and the report content, use of imprecise calculation methods or incomplete data source selection. These issues have all been addressed within 29 recommendations issued by Ère-S, out of which 9 minor changes were required to ensure the accuracy of the report. The rest of the recommendations covered improvement of the report statements, including additional information that could be used, either to reinforce a current statement or to add more transparency and relevance to the content.

All 9 recommendations requiring changes to the report as well as 15 of the improvement recommendations have been followed and the report amended accordingly.

Assurance Conclusion

The assurance process found the statements and figures provided in the report to be backed up by primary data and detailed information. We are also confident that the underlying management processes audited are aligned with the sustainability strategy and policies of the company.

In our opinion, we can therefore assure that the Sustainability Report is accurate and reliable. We are satisfied that the reported information and indicators accurately express the sustainability profile and performance of PowerSeraya.

In addition, we have been impressed by the comprehensiveness of PowerSeraya Sustainability Report, considering it is their first report. Our interview with the Managing Director has also confirmed a strong commitment to sustainability from the top management and shows a good example of integration of sustainability issues into the business strategy.

For their next reporting period, we would encourage PowerSeraya to measure and include more data to allow figures comparison over a 4-5 year period. Additional content on stakeholder engagement, especially on the customers and suppliers aspects, will definitely improve the quality and materiality of the report in the future.

Ère-S

Jean-Pierre Dalla Palma, Director
March 16, 2009

