

HIGHLIGHTS 2002	3
CHAIRMAN'S LETTER TO THE MINISTER OF ENERGY	4
MESSAGE FROM GOVERNOR	6
BOARD OF DIRECTORS AND EXECUTIVES	8
ORGANIZATION	11
REPORT OF THE AUDIT COMMITTEE	14
CORPORATE RISK MANAGEMENT	15
ECONOMIC AND ELECTRICITY OVERVIEW	20
OPERATIONS	23
POWER DEVELOPMENT	32
DEMAND SIDE MANAGEMENT	34
ORGANIZATIONAL DEVELOPMENT	38
SERVICE BUSINESSES	40
ASSOCIATED COMPANIES	41
ENVIRONMENTAL RESPONSIBILITY	44
SOCIAL RESPONSIBILITY	50
EVENTS	54
KEY STATISTICAL DATA	58
FINANCIAL REPORT	62



Vision

To be the ASEAN Power Grid Centre and the region's leading company in energy and related businesses, providing an efficient and reliable power supply at a competitively low price with environmental and social concerns.

MISSION

1. To ensure a sufficient electricity supply with stability, reliability and quality at a reasonable price in order to support the nation's economic and social development and her competitiveness in the global market.
2. To develop and generate electric energy with environmental concerns and social acceptance.
3. To support the government policy, particularly the policy on developing the state-owned enterprises and the mission of the Ministry of Energy.

Highlights 2002

	Fiscal Year 2002	Fiscal Year 2001	Increase/(Decrease) Percentage
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Financial Highlights (in million baht)

Total revenues	215,731	193,346	11.58
Total expenses	188,381	179,075	5.20
Net income	27,350	14,271	91.65
Total assets	382,086	404,902	(5.63)
Total liabilities	236,004	276,693	(14.71)
Long-term debts	159,489	183,722	(13.19)
Equity	146,082	128,209	13.94

Operational Highlights

System peak generation requirement (megawatts)	16,681	16,126	3.44
Energy generation and purchase (million kilowatt-hours)	108,389	103,165	5.06
Energy sales (million kWh)	102,486	97,412	5.21
System installed capacity (megawatts)	23,754	22,034	7.81
• EGAT's power plants	15,000	15,000	–
• Private power plants	8,754	7,034	24.45
Transmission system			
• Line length (circuit-kilometres)	27,908	27,040	3.21
• Number of substations	195	194	0.52
• Transformer capacity (megavolt-amperes)	60,018	57,986	3.50

No. EGAT E4900/48041



Electricity Generating Authority of Thailand
Bang Kruai, Nonthaburi 11130

November 29, 2002

His Excellency
Minister of Energy

Subject: Submission of EGAT Annual Report 2002

Excellency,

On behalf of the Electricity Generating Authority of Thailand (EGAT), I am pleased to submit for your consideration a summarized report of EGAT's overall performance for fiscal year 2002 ended September 30, 2002 as follows:

The Thai economy continued to expand throughout fiscal year 2002. Accordingly, the country's electricity demand rose further from the prior year, though at a rate slightly lower than previously projected. Peak generation requirement topped 16,681.10 megawatts (MW), marking a 3.44 percent growth rate. Gross energy generation throughout the year increased 5.06 percent from the previous year to 108,389 million kilowatt-hours (kWh). The incremental energy consumption has been adequately and reliably met by supplies from EGAT's and private sector's power plants. The country's installed generating capacity totalled 23,754.80 MW, consisting of 15,000.40 MW or 63.15 percent from EGAT's power facilities and 8,754.40 MW or 36.85 percent from domestic and foreign private power sources.

Electricity generation by EGAT's own power facilities declined slightly by 493 million kWh or 0.80 percent to 61,263 million kWh, accounting for 56.52 percent of the country's total electricity. In EGAT's own generation system, natural gas accounted for 32.85 percent (35,608 million kWh) of the country's electricity, lignite for 15.58 percent (16,890 million kWh), hydropower for 5.98 percent (6,481 million kWh), and oil for 2.11 percent (2,282 million kWh). Compared with the previous year, energy portions from natural gas and hydropower increased two percent and three percent respectively whereas those from lignite and oil dropped by two percent and 30 percent respectively.

In addition, the remaining 43.48 percent (47,126 million kWh) of the country's total electricity was met by electric energy purchased from private power plants, which increased 13.81 percent from the prior year. The growing purchase was largely due to the official commissioning of the privatized Ratchaburi combined cycle blocks 1 - 2 of 1,450 MW and the operation of the 300 MW Thailand - Malaysia HVDC interconnection system during the year.

Energy sales volume rose 5.21 percent to 102,486 million kWh. This comprised 62.67 percent sold to the Provincial Electricity Authority (PEA), 35.41 percent to the Metropolitan Electricity Authority (MEA), and the remaining 1.92 percent to direct customers, Laos, Malaysia and other minor customers.

During 2002, EGAT had under implementation the construction of three power projects totalling 922 MW in capacity. This included the 300 MW Krabi thermal power project, the 122 MW Lan Krabue gas turbine power project, and the 500 MW Lam Takhong pumped storage project.

At the end of fiscal year 2002, EGAT's total assets decreased by 22,816 million baht or 5.63 percent to 382,086 million baht as a result of the transfer of Ratchaburi combined cycle blocks 1 and 2 to Ratchaburi Electricity Generating Company Limited. Total revenues from energy sales and others rose 11.58 percent to 215,731 million baht. Expenses totalled 188,381 million baht. Of the total expenses, 49.84 percent or 93,890 million baht was on

electricity purchase which increased 11.20 percent from the preceding year. Expenses on fuels dropped 2.20 percent to 53,032 million baht, accounting for 28.15 percent of EGAT's total expenses. Net income for the year totalled 27,350 million baht.

Security of the power supply system is the main target of EGAT's operations which has continuously been accomplished. Key success factors in maintaining a satisfactory level of system stability involve the efficiency and reliability of EGAT's main operational areas including generation, transmission, dispatch control and energy procurement and supply. Over recent years, energy cooperation with neighbouring countries has been greatly enhanced as a strategic means to reinforce security of the power systems of both countries, both in normal and emergency conditions. This will enable each country to decrease its reserve generation capacity, and thus its power investment. The bilateral cooperation in energy development will form a basis for the full integration of the ASEAN power networks in the future.

In 2002, EGAT's energy cooperation with neighbouring countries achieved good progress. A System Interconnection Agreement was signed on May 14, 2002 between EGAT and Tenaga Nasional Berhad of Malaysia for the power exchange and commercial transactions of 300 MW which commenced on June 3. EGAT also entered into a Power Purchase Agreement with Electricite du Cambodge of Cambodia on July 2, 2002. Under the agreement, EGAT will supply, at an initial phase, 30 MW of power to Cambodia's Banteay Manchey, Battambang and Siem Reap areas. With regard to the progress of power purchase agreement with Lao People Democratic Republic, negotiations on the Power Purchase Agreement with Laos' Nam Theun 2 hydroelectric power project have been concluded during the year. EGAT has now been proceeding to acquire approval for the PPA signing from related approval authorities. Under the agreement, EGAT will purchase 920 MW of power from Nam Theun 2 project.

With regard to the electricity industry reform, the Government has set a plan for state enterprise reform and privatization aiming to utilize state enterprises as a major vehicle to revitalize the country's economy. A list of state enterprises has been designated for listing in the stock market. According to the Government's plan, EGAT is to be listed in the stock market by March 2004. In 2002, EGAT has reviewed models of the industry reform while continuing with its organizational restructure process.

EGAT has expeditiously been working to modernize its organizational management and improve its operating efficiency. Works in the process included organizational structural reform for more streamlined operations, adoption of quality management practices and performance evaluation systems that are consistent with international standard practices. These initiatives are aimed to improve overall efficiency while enhancing greater transparency in EGAT's management and operations.

EGAT's overall performance through fiscal year 2002 achieved satisfactory success and complied well with the Government's policy. EGAT wishes to thank the Government, public and private agencies and the general public for their continued support which has substantially contributed to its success.

Accept, Excellency, the assurances of our highest consideration.



(Somchai Richupan)
Chairman, Board of Directors

Message from Governor

Southeast Asia has been one among the fastest growing regions which has global investors' attention. One of the crucial factors to provide assurance for the region's steady and sustained economic growth is a reliable, economic and environmentally sound electric energy supply.

Today, members of the Association of Southeast Asian Nations or ASEAN mostly have adequate power supply. However, in the past, several among them including Indonesia, Malaysia, the Philippines, Singapore and Thailand had all experienced difficulties caused by acute shortages of electricity supply. More often than not, such energy crises arise when the economy begins to recapture growth. Although ASEAN member countries have already come through the economic recession periods and began to gather momentum, but if without careful planning, such vicious circle may recur in the next 4 - 5 years.

In the past, Thailand's electricity generation depended heavily upon imported fuel which caused the nation's energy crises and loss of competitiveness in the global market. As a result, the national energy development strategies in the following decades have focussed more on indigenous energy resources development, fuel diversification, energy efficiency improvement, and the enhancement of regional cooperation. These strategic efforts have successfully reduced the dependence on imported energy, which accounted for approximately 90 percent of the country's electricity a couple of decades ago, to only 20 percent in 2002. Most of the currently imported energy is from neighbouring countries, including electricity purchased from hydropower sources in Lao PDR and natural gas imported from Myanmar.

Thanks to ASEAN's diverse and plentiful primary energy resources, the development of regional energy cooperation will be a strategic approach critical to the region's energy security. Myanmar, for example, has over 100,000 megawatts of hydropower potential, of which barely one percent has been tapped. Similarly, Lao PDR has over 20,000 megawatts of hydropower potential, most of which remains untapped. In the south, natural gas and coal are plentiful in Indonesia and Malaysia. These vast resources provide opportunities for ASEAN to mutually benefit from joint energy development efforts.

The difference in economic development and in energy resources opens up prospects for energy trading among countries in the region. Those countries poor in primary energy resources but with growing needs for energy like Thailand will be the buyer countries and can be assured of reliable and competitive electric power. Other resource-rich countries with less domestic power demand will be the sellers and build up their economy from energy export earnings. The interconnection of ASEAN countries' power systems will also allow member countries to share spinning reserve, thereby significantly reducing reserve generating capacity and power infrastructure investment of individual member countries and of the region as a whole.

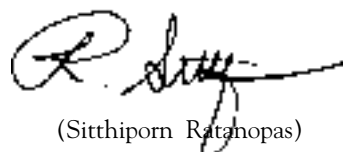
With its geographical leverage, Thailand can be the gateway connecting transmission networks, allowing and routing energy flow among ASEAN member countries. It has the potential to serve as the centre of the integrated ASEAN power grid.

To date, grid interconnection projects within the ASEAN region have been expanding satisfactorily. A number of bilateral cross-border links have already been established, including Thailand - Lao PDR, Thailand - Malaysia, and Malaysia - Singapore interconnections. Plans have also been made for the future interconnections between Singapore and Indonesia, Thailand and Cambodia, Cambodia and Vietnam, and Vietnam and Lao PDR.

On a sub-regional basis, countries in the Greater Mekong Sub-region (GMS) have also committed themselves in governmental agreements for power purchase among GMS countries which will lead to grid interconnection among those countries. Mekong riparian countries are well endowed with immense hydropower potential, which can be exported and transmitted to other ASEAN member countries via Thailand.

In all, region-wide energy cooperation programmes have been progressing satisfactorily. These collaborative efforts will not only help enhance economic growth of individual countries in the region, but also provide a potential market for electric power trading. All member countries will be prompted to actively develop their power infrastructure, technology, operating efficiency and environmental management standards to compete with other countries in and outside the region. After all, sustainable benefits from these processes will eventually be enjoyed by the people of each member country.

In the borderless world where economic systems of the countries in the region are integrated, new economic and business opportunities and challenges emerge. For over the past three decades, EGAT has built up Thailand's power system into an efficient and reliable one. We are now aspiring to a new challenging role of the centre of the ASEAN power grid. Much has yet to be done in order to achieve support at national and regional levels. Also, we will further develop and improve the organization into a more efficient one at the forefront of the region's energy industry.



(Sitthiporn Ratanopas)



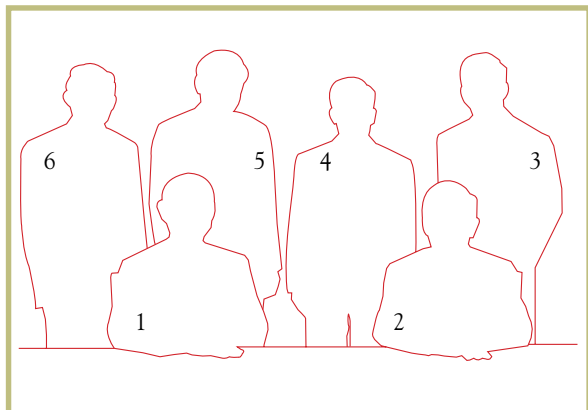


Born on May 4, 1948, Sithiporn Ratanopas graduated from Chulalongkorn University with a bachelor's degree in electrical engineering in 1969. He obtained his master's degree in management from the Sasin Graduate Institute of Business Administration in 1990.

Sithiporn Ratanopas joined EGAT in 1970 as engineer in Transmission Line and Substation Construction Division. He has extensive knowledge and experiences in strategic corporate planning and management in the electric power business of both public and private sectors. His key positions at EGAT included Chief of Transmission Line and Substation Coordination Department, Corporate Planning Director, Demand Side Management Director, and Deputy Governor - Policy and Planning. While holding the position of EGAT Deputy Governor, Sithiporn Ratanopas was also appointed as President and Chief Executive Officer of the Electricity Generating Public Company Limited (EGCO), EGAT's associated company. He resigned from EGCO on September 30, 2002 to assume the position of EGAT Governor on October 1, 2002.

Board of Directors

(Fiscal Year 2002 ended September 30, 2002)



7. **Lae Dilokvidhyarat** Independent Director
 • M.A. (Development Studies), Institute of Social Studies, The Hague, The Netherlands
 • Associate Professor of Economics, Chulalongkorn University
 • Age: 55

8. **Panit Nitithanprapas** Director
 • M.A. (Public Administration), National Institute of Development and Administration
 • Secretary-General of the Office of the Commission for the Management of Land Traffic
 • Age: 59

9. **Tawee Butsumtorn** Independent Director
 • Honorary doctorate's degree in Engineering, Chulalongkorn University
 • Chairman of Board of Executive Directors, the Thai Military Bank Public Company Limited
 • Age: 63

10. **Sunthad Somchevita** Director
 • Master of Architecture, Pratt Institute, USA
 • Permanent Secretary of the Ministry of Science, Technology and Environment
 • Age: 58

11. **Somchai Wongsawat** Director
 • Barrister-at-Law, The School of Thai Bar
 • Permanent Secretary of the Ministry of Justice
 • Age: 55

1. **Somchai Richupan** Chairman (Independent Director)
 • Ph.D. (Economics), University of Florida, USA
 • President, Siam Development Institute
 • Age: 64

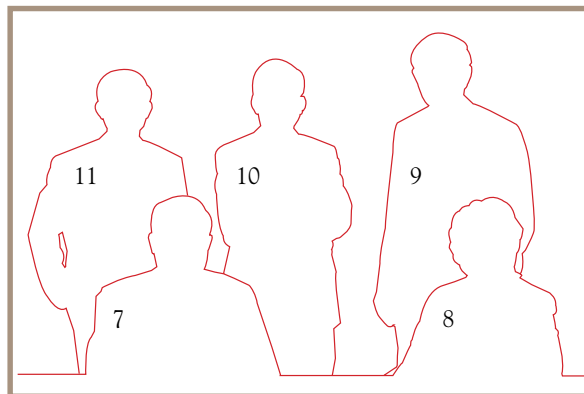
2. **Somma Phasee** Director
 • M.A. (Economics - Planning and Development), Vanderbilt University, USA
 • Deputy Permanent Secretary of the Ministry of Finance
 • Age: 58

3. **Apai Chandanachulaka** Director
 • M.A. (Political Science), Thammasat University
 • Director-General of the Department of Local Administration, Ministry of Interior
 • Age: 59

4. **Pala Sookawesh** Independent Director
 • M.S. in Industrial Engineering (Operation Research), Oregon State University, USA
 • Former Governor of the Petroleum Authority of Thailand
 • Age: 62

5. **Norkun Sitthiphong** Independent Director
 • Ph.D. (Mechanical Engineering), Oregon State University, USA
 • Vice President of Chiang Mai University
 • Age: 49

6. **Vitaya Kotcharug** Director (ex-officio)
 • B. Eng. (Electrical Engineering), Chulalongkorn University
 • EGAT Governor
 • Age: 60





Executives

(Fiscal Year 2002 ended September 30, 2002)

1. **Vitaya Kotcharug**
Governor
2. **M.L.Chanaphun Kridakorn**
Deputy Governor - Policy and Planning
3. **Angoon Kamolyabutr**
Deputy Governor - Account and Finance



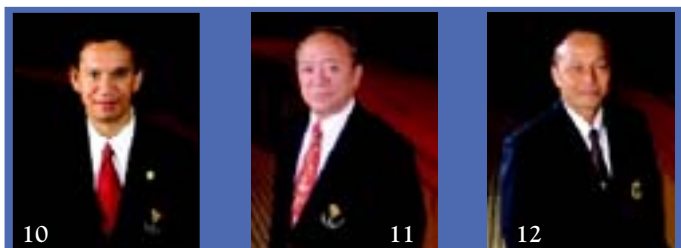
4. **Roengson Suddeongs**
Deputy Governor - Administration
5. **Premchai Musikabhumma**
Deputy Governor - Construction
6. **Chalermchai Ratanarak**
Deputy Governor - Hydro Plant



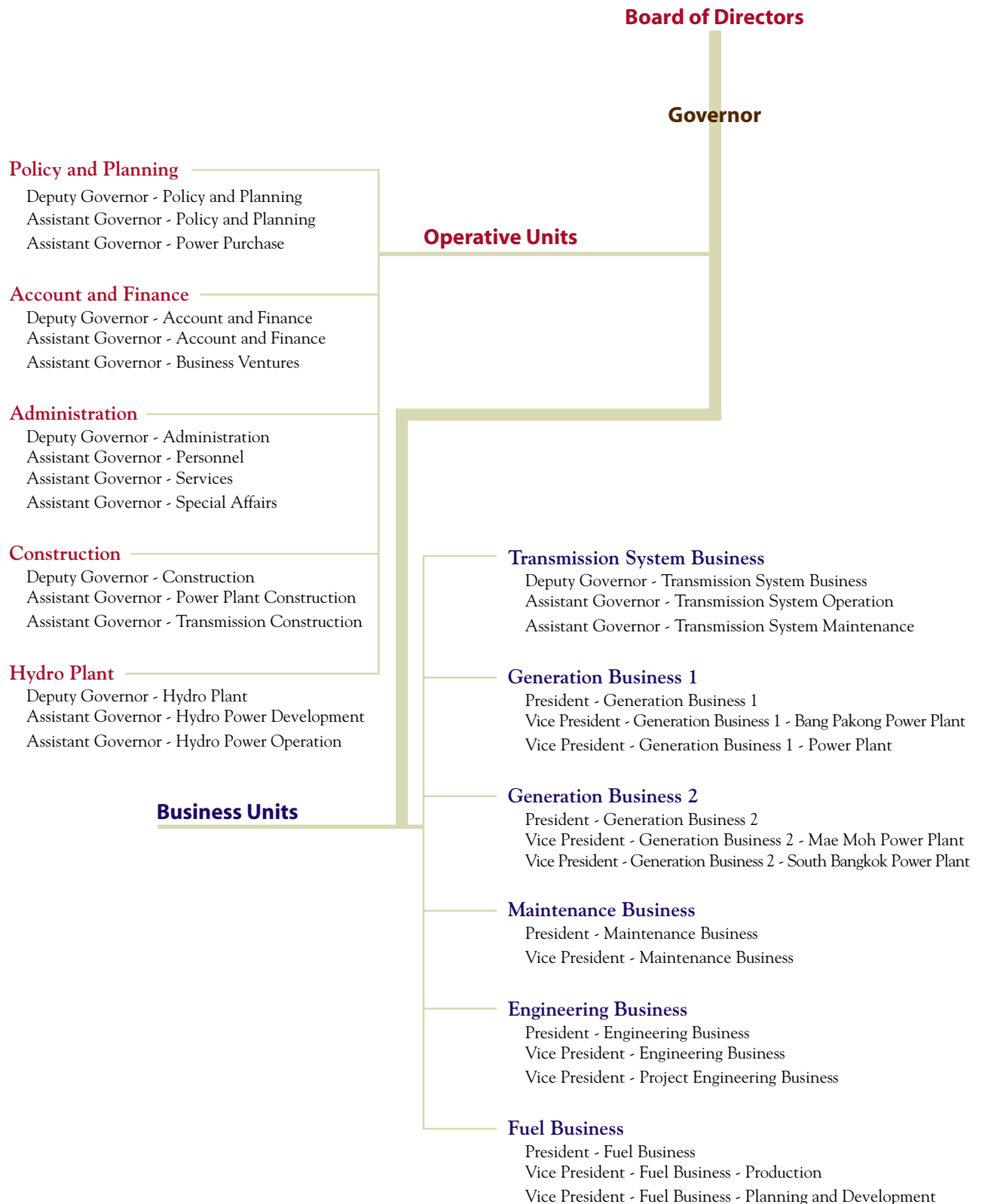
7. **Kamphuy Jirararuensak**
Deputy Governor - Transmission
System Business
8. **Prapan Faktes**
President - Generation Business 1
9. **Udom Thuvavong**
President - Generation Business 2



10. **Kraisi Karnasuta**
President - Maintenance Business
11. **Suporn Hotimavorakul**
President - Engineering Business
12. **Narongsak Vichetpan**
President - Fuel Business



Organization





Human and Nature are interdependent. Sustainability of natural resources is the breath of life to all beings. EGAT's Reforestation Programme exemplifies its resolve to restore environmental balance and to create community awareness of forest preservation and protection. Its ultimate aim is to help return ecological fertility to the forests throughout the country.



Report of the Audit Committee

Electricity Generating Authority of Thailand

Fiscal Year 2002

The Audit Committee was appointed by the Board of Directors on 22 June 2001. Three Directors served as members of the Committee as follows:

- | | |
|---------------------------|---------------------------------|
| 1. Mr. Tawee Butsunton | Chairman of the Audit Committee |
| 2. Mr. Somchai Wongsawat | Member of the Audit Committee |
| 3. Mr. Norkun Sitthiphong | Member of the Audit Committee |

The Audit Committee has duties, responsibilities, and legal jurisdiction according to the Rules of the Audit Committee approved by the Board of Directors.

The Committee has held monthly meeting to review the reliability and credibility of financial statements, effectiveness and performance efficiency of the Electricity Generating Authority of Thailand (EGAT), and to prevent the occurrence of any conflict of interest. In addition, the Committee ensured that the practices of EGAT comply with appropriate laws, regulations, Cabinet resolutions, and policies of the Board of Directors. The audit reports have been submitted to the Board of Directors quarterly.

The Committee has reviewed the internal audit plan, procedures, internal auditor's report, and the internal control assessment report, which were prepared by the Internal Audit Division. The Committee has discussed issues, problems, and constraints with the Director of the Internal Audit Division, management teams responsible for preparing monthly financial report to the Ministry of Finance and financial statements, auditor in charge in the Office of the Auditor General. The Committee has reviewed the public relations plan and activities, the manpower model and manpower expenses. The Committee has also monitored the performance of EGAT according to the Performance Agreement signed with the Ministry of Finance and also reviewed the conflict of interest with executives and managers.

The Committee has received good cooperation and support from administrative personnel. The recommendations from the Committee were efficiently acted upon. The Committee is of the opinion that EGAT's operations in the year 2002 were managed satisfactorily and were based upon the principles of good governance.



(Tawee Butsunton)
Chairman of the Audit Committee
20 January 2003

Corporate Risk Management

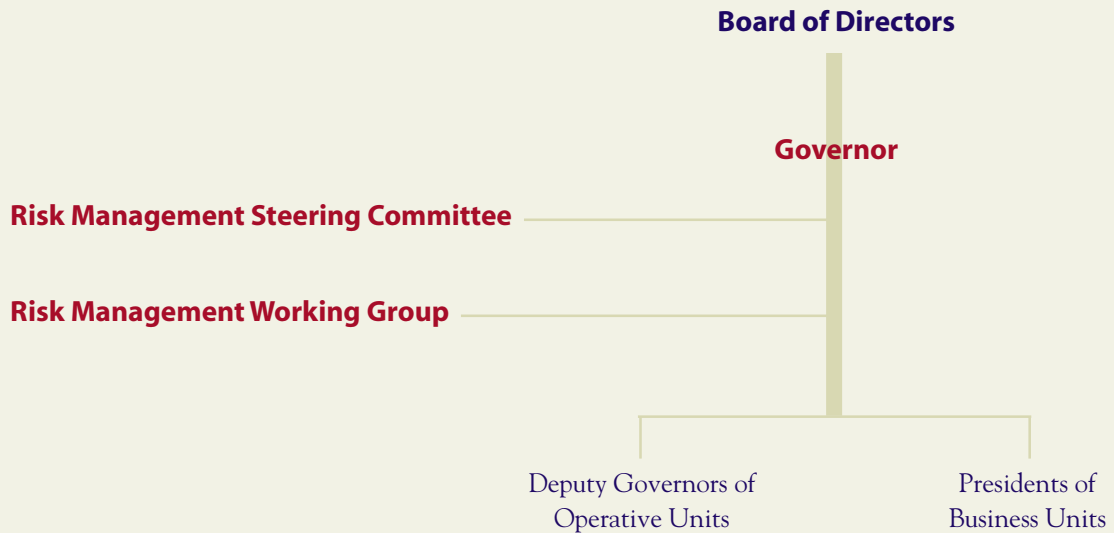
EGAT's main mission is to provide an adequate and reliable power supply to meet the satisfaction of its customers which include two distributing authorities, namely the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA) and a small number of direct customers. To ensure the prudent operations and the success of the corporate mission, EGAT has integrated practical risk management into its management and corporate governance practices. Its key risk exposures include financial, operational, business and event risks.

A Risk Management Steering Committee chaired by EGAT Deputy Governor - Policy and Planning was set up to oversee and monitor the corporate risk man-

agement with a Risk Management Working Group being formed to provide data and analytical backup for the Committee.



STRUCTURE OF EGAT'S RISK MANAGEMENT



EGAT's risk management practice is guided by principal steps as follows:

1. Determining EGAT's mission
2. Identifying corporate risks
3. Analyzing, assessing and prioritizing risks
4. Determining risk management strategies
5. Determining risk control methodology
6. Monitoring and reporting

Risk Factors and Risk Management Strategies

Financial Risk EGAT's financial risks are related to debt management, liquidity management, damages to power plant and transmission system, and capital management. EGAT has adopted a number of countermeasures to avoid, minimize or control those financial exposures. Those financial risk control measures which have been implemented include the close monitoring of the domestic and international financial market situations, application of appropriate hedging instruments such as refinancing, currency swap and forward contracts, and etc.



Operational Risk Severe system interruption is considered a major operational risk. The interruption can be caused by power plant failures, capacity constraints of generation and transmission systems, equipment errors, or human errors. Measures have been implemented to prevent and minimize those occurrences, such as regular revision of the operation and maintenance plans for all power facilities and training for operators. In addition, specific plans have also been prepared to effectively and efficiently deal with, control and minimize those risks if they occur. This included a blackout prevention plan, contingency plan to restore normal operating conditions after disruptions, and crisis communication plan.

Business Risk The rapid growth of power generation technologies may pose risks to EGAT's business. New technologies can clearly bring increased efficiency, and thus lower production cost. EGAT's competitiveness in the generation business can be threatened by private power companies utilizing new equipment and machines. To overcome this risk, EGAT has planned to further improve efficiency of its generating facilities.

Event Risk EGAT's event risks are associated with changes of laws and government policies as well as public and social issues. In addressing these risks, EGAT has been seeking the revision of the Cabinet's resolutions related to EGAT's operations. Besides, with the consent of the Cabinet, EGAT has been implementing its People Policy to earn and maintain social trust and collaborative relationship with local communities and society.





Development activities can enhance the better quality of the environment and natural beauty. Through appropriate management, EGAT has reclaimed and developed abandoned and degraded lands into beautiful gardens and parks for community recreational benefits. This typifies EGAT's commitment to its environmental responsibility.

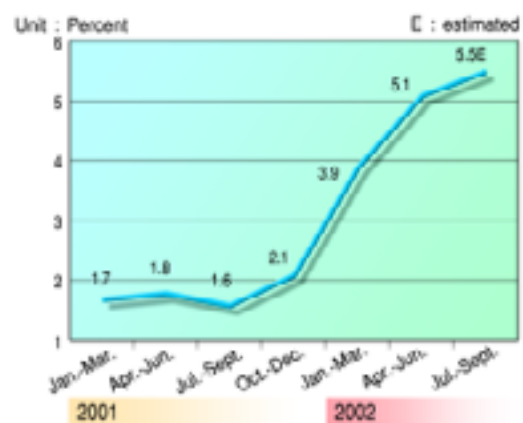


Economic and Electricity Overview

Thailand's overall economy has steadily regained its strength through fiscal year 2002. Gross domestic product (GDP) increased favourably. Reviving export and robust domestic private consumption have provided the major driving force for the economic growth. External demand improved markedly. Exports to major markets in the US, Japan and other Asian countries, expanded at a rapidly high rate as favoured by the fast recovery of the world economy and of Thailand's trading partners. On the other hand, the government has continued to use its domestic policy instruments to stimulate the economy. These instruments ranging from the monetary policy of low-interest rate, fiscal policy of deficit budget to other economic stimuli for the public sector, have all led to a favourable increase in domestic demand. Private consumption as well as private investment accelerated, reflecting an improvement in consumer and business confidence in the stable conditions of the economy. The overall economic stability improved favourably. Unemployment rate and inflation became lower. The Thai baht currency still maintained sufficient stability conducive to the competitiveness of Thai export. Liquidity in the financial sector remained high. Commercial bank credits for private sector and the capital market continued to improve while non-performing loans declined.

In 2002, Thailand's electricity demand continued to grow in line with the recovering economy. Due to the improvement in external and domestic demand, production grew to support the continual expansion in the agricultural, service and manufacturing sectors. The latter, in particular, experienced accelerating growth in several industries including vehicles and parts, iron and steel products, cement, electronics and electrical appliances, and food industries. Such expansion of production in the manufacturing and service sectors resulted in the continuous increase in electricity demand. Peak generation requirement grew further to 16,681.10 MW, representing an annual growth of 3.44%, which was close to the forecast for the moderate economic recovery case. The system peak demand occurred on April 4, 2002 at 2 p.m. at the country's average temperature of 37.5 degrees Celsius. Gross energy generation throughout the

Gross Domestic Product (GDP) Growth Rate at Constant 1988 Price

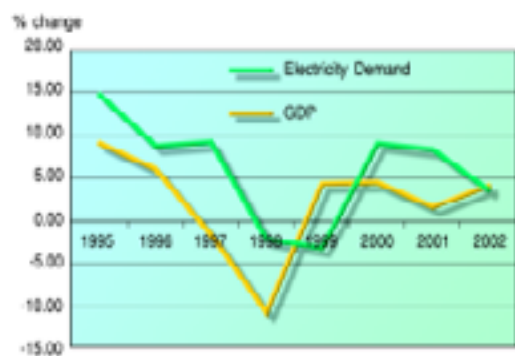


year amounted to 108,389 million kWh, 5.06% higher than the previous year. The system's average load factor improved remarkably to 74.17%, reflecting a more constant and efficient pattern of daily electricity consumption in 24 hours. The rise in the system load factor percentage was attributable to the implementation of the time-of-use (TOU) and the time-of-day (TOD) tariff rates as well as energy conservation measures. Thailand's per capita electricity consumption amounted to 1,530 kWh/year, which was far smaller than the per capita consumption of industrialized countries. Thailand's energy consumption is yet to grow further in the future.

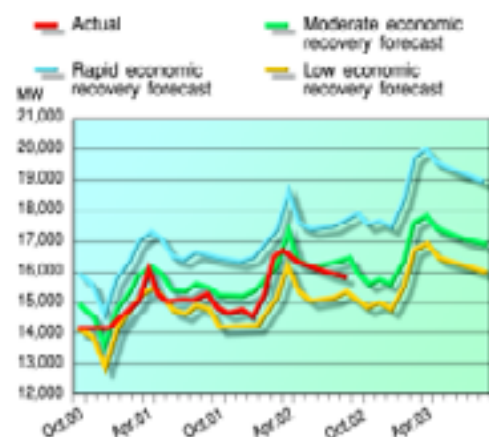
Regarding the outlook for 2003, the Thai economy is projected to grow at the similar rate to a year earlier. The government's policies of low interest rate, budgetary deficit, and other economic stimuli will continue to play a major role in propelling economic expansion despite such external uncertainties as the world economy including the US economic recovery and the heightened tensions between the US and Iraq which might lead to war and soaring world oil prices.

For the energy sector, electricity demand is projected to grow slightly faster in 2003. Based on the forecast prepared by Thailand Load Forecast Subcommittee, in case of moderate economic recovery, requirements for peak generation and energy generation in 2003 are projected to rise by 6.89% and 6.22% respectively.

Growth Comparison between GDP and Electricity Demand



System Peak Generation Requirement



MONTHLY PEAK GENERATION REQUIREMENT

Month	Peak Generation (MW)		Increase/(Decrease)	
	FY 2002	FY 2001	MW	Percentage
October	14,864.50	14,139.30	725.20	5.13
November	14,604.90	14,133.90	471.00	3.33
December	14,707.60	14,124.60	583.00	4.13
January	14,552.50	14,211.80	340.70	2.40
February	15,260.80	14,600.80	660.00	4.52
March	16,485.30	15,012.90	1,472.40	9.81
April	16,681.10	16,126.40	554.70	3.44
May	16,293.10	15,187.80	1,105.30	7.28
June	16,156.90	14,992.30	1,164.60	7.77
July	16,029.80	15,045.10	984.70	6.54
August	15,912.10	15,096.70	815.40	5.40
September	15,818.20	15,247.30	570.90	3.74
Yearly Peak Generation	16,681.10	16,126.40	554.70	3.44

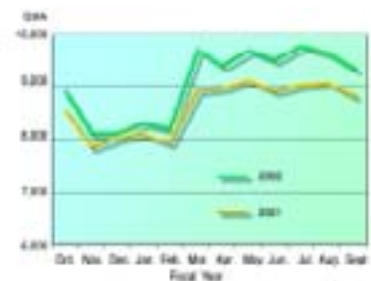
Peak Generation Requirement



ENERGY GENERATION REQUIREMENT

Month	Energy Generation (Million kWh)		Increase/(Decrease)	
	FY 2002	FY 2001	(Million kWh)	Percentage
October	8,846.56	8,507.75	338.81	3.98
November	8,071.75	7,819.70	252.04	3.22
December	8,096.52	7,983.92	112.60	1.41
January	8,263.77	8,125.57	138.20	1.70
February	8,187.95	7,927.08	260.87	3.29
March	9,689.18	8,927.36	759.82	8.51
April	9,381.81	8,981.72	400.09	4.45
May	9,654.74	9,090.05	564.69	6.21
June	9,484.30	8,897.53	586.77	6.59
July	9,752.20	9,013.36	738.84	8.20
August	9,620.63	9,057.57	563.06	6.22
September	9,341.83	8,833.59	508.24	5.75
Total	108,389.24	103,165.20	5,224.04	5.06

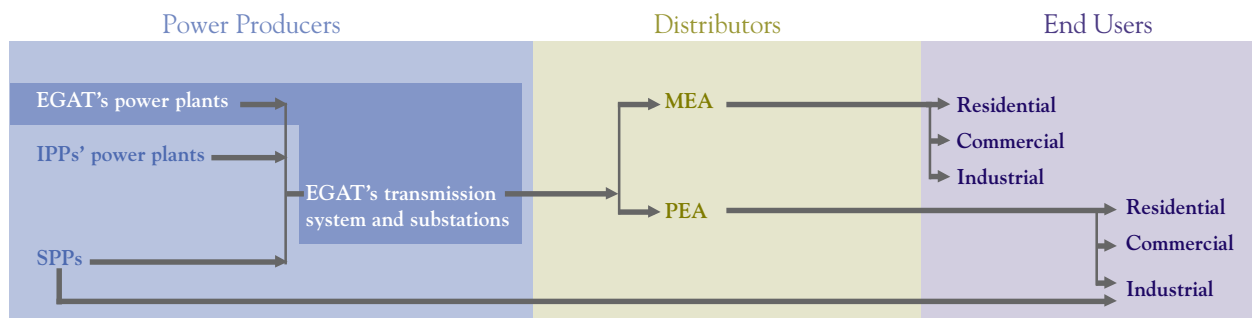
Energy Generation Requirement



Operations

EGAT is a state owned enterprise responsible for electricity generation and transmission for the whole country. In addition to generation by its own power plants, EGAT also receives electric power from private power sources including both domestic and foreign independent power producers (IPPs) and small power producers (SPPs). Most of the bulk electric energy is sold and transmitted via EGAT's transmission network to two distributing authorities, namely the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA), which deliver electricity to industries, offices and households in their respective areas.

Thailand's Power System Structure



GENERATION SYSTEM

Energy Generation and Purchase

In fiscal year 2002, electricity demand by all major sectors including residential, commercial and industrial sectors, was on the rise. System peak generation requirement grew moderately by 3.44% to 16,681.10 MW. The peak demand occurred on a hot summer day of April 4, 2002, at 2 p.m. at the average temperature of 37.5 degrees Celsius.

The country's gross energy generation increased 5.06% from the prior year to 108,389 million kWh. EGAT's own power facilities accounted for 56.52% of the country's electricity, providing 61,263 million kWh. The remaining 43.48% or 47,126 million kWh was generated by private power plants. Compared with the preceding year, EGAT's generation declined slightly whereas its power purchase from private power plants rose sharply by 13.81% following the commissioning of

the privatized Ratchaburi combined cycle blocks 1 and 2 totalling 1,450 MW and the 300 MW Thailand-Malaysia HVDC interconnection system in April and June 2002 respectively.

In 2002, EGAT's generation from natural gas accounted for 32.85% (35,608 million kWh) of the country's total electricity, lignite for 15.58% (16,890 million kWh), hydropower for 5.98% (6,481 million kWh), and oil for 2.11% (2,024 million kWh from fuel oil and 258 million kWh from diesel oil). Its demonstration alternative energy power stations also provided 1.81 million kWh of energy to the system. Compared with the previous year, generation from bunker oil and lignite was reduced by 34.92% and 2.41% whereas gas-fired generation increased by 2.11%. In addition, the increased water inflows caused by heavy floods rapidly filled up

several of EGAT's dams, causing additional releases of water, including releases through spillways in order to regulate the water levels of the reservoirs. Hydropower generation thereby increased further by 2.70% from the previous year.

Electric energy purchase in 2002 included 44,306 million kWh from domestic independent power producers (IPPs) and small power producers (SPPs) which together accounted for 40.88% of the country's total electricity and 2,820 million kWh (2.60%) from neighbouring countries, namely Laos and Malaysia.

New generating capacities, all from private power sources, totalling 1,750 MW were added to the system during the year. This included Ratchaburi combined cycle blocks 1 and 2 of 725 MW each and the 300 MW power transfer capacity of the new Thailand-Malaysia HVDC interconnection system. At the end of fiscal year 2002, the country's installed generating capacity increased further by 7.81% to 23,754.80 MW, consisting of 15000.40 MW (63.15%) from EGAT's own power plants and 8,754.40 MW (36.85%) from private power sources.

Operational Efficiency and Maintenance

The overall net efficiency of EGAT's power facilities declined slightly from the prior year due mainly to the increasing natural gas-fired generation as a sub-

stitute for the costly imported fuel oil. The declining efficiency was also attributed to the higher generation from a lignite-fired power station with lower efficiency to replace EGAT's major gas-fired power plants at Bang Pakong and South Bangkok during their unplanned maintenance outages.

Although EGAT had to reduce its own generation, its power plants have maintained a satisfactorily high performance with an output factor of 80% and a comparatively low unplanned outage factor. The high operational performance was attributed to the efficient and proper planning of EGAT's plant operation and maintenance schedules. However, the unplanned outages of hydropower plants increased from the previous year since EGAT had to halt the operation of Pak Mun run-of-the-river dam for 12 months in response to the Cabinet's resolution for the opening of the rolling gates of Pak Mun dam to pave way for studies on the ecosystem and fishery resources of the Mun river.

With new capacities of private power plants being added to the power system during the year, EGAT's generation is expected to be further reduced to about 41% whereas energy purchased from private power plants will rise to 59% of the country's energy requirement in fiscal year 2003. This may cause the average planned outage of EGAT's power plants to remain high over the next year.



POWER PLANT PERFORMANCE INDICES

	Fiscal Year		Increase/(Decrease) Percentage
	2002	2001	
Thermal, Gas Turbine and Combined Cycle Power Plant			
Gross capacity factor	55.38	55.92	(0.54)
Output factor	79.03	79.41	(0.38)
Equivalent availability factor	82.22	87.55	(5.33)
Planned outage factor	10.25	6.75	3.50
Unplanned outage factor	5.85	5.69	0.16
Forced outage factor	3.70	1.38	2.32
Net efficiency	35.51	35.91	(0.40)

Hydropower Plant

Gross capacity factor	25.15	24.35	0.80
Output factor	80.75	77.45	3.30
Availability factor	86.29	95.54	(9.25)
Planned outage factor	7.90	2.30	5.60
Unplanned outage factor	5.81	2.16	3.65
Forced outage factor	0.07	0.15	(0.08)

Mine Operation

Operation at EGAT's Mae Moh lignite mine in 2002 involved an excavation and removal of 59.48 million cubic metres of overburden soil and the production of 15.14 million tonnes of lignite which was supplied to the nearby 2,625 MW Mae Moh lignite-fired power plant.

At the end of fiscal year 2001, EGAT was permitted by the Cabinet's resolution on September 25, 2001 to develop Wiang Haeng coal basin for electricity generation on condition that an environmental impact assessment of the project is approved by the Government. In 2002, EGAT has further implemented site surveys and participatory programmes to urge the local people to participate in the planning and decision-making of project development. Chiang Mai University was engaged to conduct an environmental impact assessment for EGAT's Wiang Haeng coal development project in the northern Chiang Mai province. A study proposal has been underway and will be completed in December 2002.

Apart from Wiang Haeng coal basin in northern Thailand, EGAT was also granted permit for the development of Saba Yoi coal basin in Songkhla province. Studies have been underway to select the most feasible approach to the development of this southern coal basin. A series of community development programmes have continuously been undertaken during the year.





TRANSMISSION SYSTEM

EGAT presently owns, develops and operates Thailand's transmission network which feeds the bulk electric energy from EGAT's and private sector's power plants to all parts of the country with high efficiency and reliability. In effort to maintain its high quality of service and even further improve the system reliability, EGAT has continuously developed and expanded its transmission system, which included the construction of additional transmission lines and substations and the reinforcement of existing transmission facilities.

In 2002, transmission expansion involved the construction of seven transmission system projects totalling 5,540 circuit-kilometres. Of these projects, 868 circuit-kilometres of 230 kV and 500 kV lines were completed during the year. A new 500 kV gas insulated substation (GIS) was also commissioned. Transformer capacity of 2,032,660 kVA was added to the grid. At the end of fiscal year 2002, EGAT's transmission network comprised 27,908 circuit-kilometres of transmission lines and 195 substations with a total transformer capacity of 60,018,480 kVA.

Communication system is integral to an efficient transmission network. In effort to further improve the quality and reliability of its telecommunication backbone network, EGAT has continuously replaced its old existing overhead ground wire lines with composite optical fibre overhead ground wire (OPGW) ones. In 2002, the installation of 458 kilometres of OPGW lines on the transmission lines was completed. This brought the total length of EGAT's OPGW lines to 3,686 kilometres. A total of 23 synchronous digital hierarchy (SDH) nodes have been added to increase network ca-

capacity. Also, the Internet Protocol Multi-Protocol Label Switching (IP MPLS) technology has been integrated with the existing frame relay network to enhance the quality of digital transmission service. To date, 51 substations have been equipped with IP MPLS devices which have significantly strengthened EGAT's SCADA system for efficient control of the power network. The IP MPLS technology has also contributed to the development of the organizationwide information system.

System Reliability

Security of the power supply system is among the ultimate goals of EGAT's operations. This has been achieved through the sound performance of its core operational systems including generation, transmission, dispatch control and energy procurement and supply. According to EGAT's practices, a number of criteria have been set to maintain a specified level of reliability by taking into account the impacts on the economy and electricity prices caused by the interruption of electricity supply as well as interruption risks. One among the fundamental security criteria adopted is the single contingency (N-1) criterion which requires that the power system must be stable and able to tolerate the outage of one large generator or one circuit of the transmission line.

In addition, EGAT has enhanced its energy co-operation with neighbouring countries to mutually assist and enhance security of power system. In 2002, EGAT and TNB of Malaysia started the official operation of the 300 MW Thailand - Malaysia high voltage direct current (HVDC) interconnection system which enabled the economic power exchange and trading of



300 MW between the two countries. The new inter-connection system will also enable EGAT and TNB to reduce their reserve capacity and enhance energy supply security. The successful operation of the new Thailand - Malaysia HVDC border link will significantly help accelerate the integration of the ASEAN power networks in the near future.

Unlike other products, electric energy cannot be stored. Electricity must be generated and transmitted instantaneously to meet the country's diverse needs at all times and under all circumstances. As the system's nerve centre, the National Control Centre located at EGAT Headquarters is responsible for controlling and balancing generation with load requirements and for ensuring the dispatch of power from EGAT and private power plants and the transmission of energy in the economical, reliable, least cost, and environmentally sound manner. The National Control Centre operates in coordination with five regional control centres located in

each part of the country by following principle practices including:

1. To ensure the generation and transmission meet international environmental quality standards.
2. To ensure adequacy and reliability of energy supply.
3. To control and ensure the high quality of electricity service which also meets international standards.
4. To dispatch generation and transmission both from EGAT's own facilities and private power plants in the least cost manner.
5. To ensure utmost safety of operations for EGAT's people and property.

In 2002, the performance of EGAT's power system has been improved further, both in terms of quality of service and reliability of supply, as shown in the following table.

INDICES OF EGAT'S POWER SUPPLY SYSTEM PERFORMANCE AND RELIABILITY

	FY 2002	FY 2001	FY 2000
System interruption severity – System Minute (MW–minutes/MW)	6.3700	11.3070	16.0440
System average interruption frequency index – SAIFI (occurrence/delivery point)	0.4460	0.7430	0.9250
System average interruption duration index – SAIDI (minutes/delivery point)	14.7190	37.6550	51.1420
System reliability (percent)	99.9972	99.9928	99.9903
Availability of the supply system (percent)	99.9928	99.4568	99.1233

ENERGY SALES AND TARIFF

EGAT's customers include two distributing authorities, which account for 98% of its total sales volume, and a small number of industrial customers as earlier prescribed by the Royal Decree. It also supplies, upon request, standby energy to private power companies in emergencies and during their plant outages. On a cross-border front, energy trading is also made with Laos and Malaysia.

In 2002, energy sales volume rose 5.21% to 102,486 million kWh. Of this total, 62.67% (64,231 million kWh) was sold to the Provincial Electricity Authority (PEA), 35.41% (36,288 million kWh) to the Metropolitan Electricity Authority (MEA), 1.45% (1,484 million kWh) to direct customers, and the remaining 0.47% (483 million kWh) to neighbouring countries and other minor customers. Compared with a year earlier, sales to PEA, MEA and direct customers grew by 6.51%, 2.72% and 11.33% respectively.

Sales Revenues

Revenues from energy sales, exclusive of value added tax, totalled 205,683 million baht, 8.60% higher than the prior year. The amount was made up of 132,398 million baht (64.37%) earned from energy sales to PEA, 69,532 million baht (33.81%) from sales to MEA, 2,917 million baht (1.42%) from sales to direct customers, and 836 million baht from energy sales to Laos, Malaysia and other minor customers.

Electricity Tariff

Thailand's electricity rates are regulated by the Energy Policy and Planning Office (EPPO) or previously National Energy Policy Office. The tariff structure comprises two categories: the wholesale bulk supply tariff that EGAT charges to the two distributing authorities and the retail tariff which is applied to end users countrywide. Power rates are normally reviewed every 3 - 5 years. Changes on tariff structure must be endorsed by the Energy Policy Committee and the Cabinet.

The electricity tariff is made up of two components: a fixed base tariff and an Automatic Adjustment Mechanism or Ft cost. The present base tariff structure has been put in place since October 2000. Ft adjustment is provided to allow pass-throughs of specific uncontrollable costs mainly including changes in fuel and power purchasing costs and impacts of foreign exchange rate fluctuations on foreign debt repayments of the three power utilities. Adjustment of Ft charges is monitored by the Subcommittee on Ft Monitoring represented by several related agencies. The Ft adjustment is made every four months. The revised Ft cost is added into the base tariff for a future four-month period to provide reasonable tariff stability for consumers.

During fiscal year 2002, Ft charges fluctuated between 0.2277 and 0.2195 baht/kWh, representing an average Ft charge of 0.2222 baht/kWh compared with



the average 0.2579 baht/kWh in 2001. The lower Ft charges were mainly attributed to the lower revenue requirements following curtailment of the three power utilities' capital investment requirements for the years 2001 - 2003 by 55 billion baht.

In fiscal year 2002, EGAT's overall average sales price for the bulk supply electricity was 2.02 baht/kWh. With regard to the retail tariff, an overall average electricity price amounted to 2.47 baht/kWh. Average electricity unit prices for various categories of end users included 2.58 baht for residential customers, 2.99 baht for small general service, 2.62 baht for medium general service, and 2.23 baht for large general service. All mentioned prices included Ft charges but excluded value added tax.





EGAT always listens and attends to the needs of the rural people whose living depends a great deal on water resources. Ban Khun Klang in northern Chiang Mai province and Ban Santi in southern Yala province are two examples of EGAT's small hydropower plants implemented in remote areas by following the royal initiative to optimize local resources for the benefits and the well being of rural communities. Besides, EGAT also encourages public participation in its project planning and development to ensure the best interest for the local people and society.



Power Development

Power Development Plan EGAT is presently responsible for planning the power system development in line with the government's policy to ensure an efficient and reliable supply of electricity that meets the country's needs in the least cost and environmentally sound manner. Based on load forecasts prepared by Thailand Load Forecast Subcommittee, EGAT formulates a long-term power development plan to cover a 15-year period in the future. The plan is revised occasionally to suit the changing economic and social conditions.

EGAT's power development plan – PDP 2001, which was endorsed by its Board of Directors in September 2001, was submitted to seek approval from the government through the National Energy Policy Council (NEPC). However, NEPC later suspended its consideration on the power development plan following the social conflicts over two IPPs' projects, namely Bo Nok and Hin Krut power projects.

In 2002, the country's system peak demand increased only 3.44% to 16,681 MW against the earlier forecast of 17,388 MW. Thailand Load Forecast Subcommittee then had to revise its load projections by taking into account the overestimated demand as well as the government's long-term strategic plans for energy conservation. The new load forecast was issued in August 2002. As a result, EGAT had to adjust its power



development plan to the changing load projections. This new plan - PDP 2003 is due for completion in early 2003.

Transmission System Expansion

Transmission expansion has continuously been planned in accordance with the power development plan and load growth in each area throughout the country. In 2002, Transmission System Expansion Project No.10 or TS. No. 10 was proposed to include a number of transmission line and substation expansion and reinforcement programmes to be implemented in provincial areas countrywide, excluding the Greater Bangkok area. The TS. No. 10 project is aimed to increase trans-

mission capability and maintain continuity and reliability of supply service to cope with the rising demand in the future.

Endorsed by the National Economic and Social Development Board, the TS.No.10 project was submitted for approval from the Cabinet in October 2002. The 13,600 million baht project mainly consists of 14 sub-projects, including the construction of 230 kV and 115 kV transmission lines totalling 974 circuit-kilometres and two 230 kV substations, purchase of additional tie transformers totalling 1,600 MVA, installation of additional capacitor banks of 1,300 MVAR, and other miscellaneous works.



Demand Side Management

Implemented since 1992, EGAT's DSM programmes have proven a real achievement in potential peak load reductions and energy savings. In 2002, according to the programme monitoring and evaluations, the DSM programmes - both initiated in prior years and existing ones estimated the cumulative peak demand reductions of 735.70 MW, energy savings of 4,163.80 million kWh and emissions reductions of 3.08 million tonnes of carbon dioxide.



From May to July 2002, EGAT launched a campaign offering an interest-free loan of 10,000 baht for each purchase of the energy efficient No.5-labelled air-conditioners. The label indicates the efficiency, annual energy consumption and the energy saving estimates of the products, with No. 5 indicating the highest energy efficiency. The interest-free loan campaign was part of EGAT's air-conditioner labelling programme implemented since 1995 to promote the production and the use of air-conditioner products with higher efficiency. After years of comprehensive media campaigns, the average energy efficiency ratio (EER) of air-conditioner products in the local market has improved to 11.10 BTU-hr/W, compared with 10.91 BTU-hr/W at the start of the programme. To date, EGAT estimated the cumulative energy savings of 676.10 million kWh and peak demand reductions of 177 MW out of this programme.

Energy efficiency labelling programmes have been continuously implemented for other electrical appliances including compact fluorescent lamps and low-loss ballasts. After having been tested and certified by the Electrical and Electronics Institute (EEI), a total of 121,900 compact fluorescent lamp (CFL) products of several manufacturers including Philips, GE, Unilux, National, Osram and Lampton, adopted the energy efficiency No.5 label. The campaign is targeted to replace the sales of low efficiency incandescent lamps with higher energy efficiency CFL products. For the promotion of the use of the low-loss magnetic ballasts, a total of 18 manufacturers have participated in the programme. The new low-loss ballasts require only half of the energy needed by conventional ballasts.

Apart from market transformation and energy efficiency labelling, EGAT's DSM implementation strategies also involve customer-oriented programme design and public-private sector partnership. Through its Green Building programme, EGAT has assisted owners and developers of both old and new buildings in the commercial sector to better comply with regulatory standards on energy use provided in the Energy Conservation and Promotion Act of 1992. A greater number of commercial customers have been participating in the programme. In 2002, EGAT has provided technical assistance in performing energy audits, designing and retrofitting energy-efficient air conditioning and lighting systems for the head office buildings of Bangkok Bank and the Bank of Thailand and the latter's Surawongse branch office. These pilot projects will be a good showcase for energy and cost saving for commercial sector in the long run.

In effort to support private sector participation for energy service delivery, EGAT has implemented an energy service companies (ESCO) programme for implementing energy efficiency measures in the industrial sector. In 2002, three ESCOs were selected to participate in the programme, including Excellent Energy International Company which has completely developed and installed energy-saving facilities for its customer - Bangkok Produce Merchandising Plc. Other ESCOs including Honeywell Systems (Thailand) Company and EMC-EPS Company have been undertaking a comprehensive energy efficiency project for their respective industrial customers, namely Kangwal Textile Company and Kimberly-Clark (Thailand) Company.

To create permanent public awareness about energy conservation, EGAT has particularly focussed on educating and spreading its message among children and youth. A Green Learning Room programme has been implemented for this purpose. The green learning room offers a variety of interactive learning tools to educate school children on the link between energy use and environment. The programme has been expanding rapidly. At the end of fiscal year 2002, EGAT has completely developed and installed the green learning room for 370 kindergarten-to-secondary schools around the country. In addition, EGAT also supported the Thai-Cambodian cooperation project under the patronage of HRH Princess Maha Chakri Sirindhorn by undertaking a Green Learning Room project for Kampong Cheuteal College in Cambodia. The green learning room was completed and handed over to Her Royal Highness who graciously inaugurated its opening in Cambodia on May 24, 2002.

In addition, EGAT has also collaborated with the Royal Chitralada Project in conducting a research and development of biodiesel from palm oil for use in small diesel engines used by farmers in agricultural and agro-industrial industries. Evaluation of the effects of palm oil on the engine system was underway. Data from the research will be used as a basis for the future develop-

ment of biodiesel from the locally available palm oil as oil substitute to help reduce production cost of the agricultural sector.

To ensure the sustained success of its DSM efforts, EGAT has formulated a master plan for the second phase DSM programme for 2002 - 2006. The plan set further targets of 632 MW of peak load reductions and 2,508 million kWh of energy savings to be achieved through its DSM programmes for residential, commercial and industrial sectors. In addition to the energy saving goals, EGAT will also focus on instilling permanent public awareness of energy efficiency and energy conservation. To that end, its green learning room programme will be further expanded to cover 145 additional schools across the country by the year 2006. Its No.5-Labelled Nutritious Brown Rice Programme will also be strengthened with a new target of 5 million packets of nutritious brown rice to adopt the energy efficiency No.5 label. The programme not only helps reduce energy consumption used in the rice milling process but also contributes to good health of the Thai people.





Sustainable development that integrates harmoniously with environmental conservation has greatly enhanced eco-tourism activities among the Thai people who can enjoy both natural beauty of places around the country and their good health.



Organizational Development

Over the years, EGAT has steadily implemented restructuring programmes in reaction to the ongoing reform of the electricity supply industry which will lead to greater competition especially in the generation business. In 2002, EGAT engaged two consultants, namely SCB Securities teaming up with Kema Consulting, and the Asian Institute of Technology to conduct critical analyses of electricity supply industry reform options for Thailand and to recommend an appropriate plan for the power sector reform and privatization. Meanwhile, EGAT also set up a working group to study the industry reform all along. The studies were aimed to arrive at the right reform model which will be in the best interest of the people: allowing greater competition in the power sector and more choices for the people; preventing monopoly while taking into consideration assistance to low income users, rural electrification and enhancement of relationships with neighbouring countries.

In 2002, structural changes have been made within several EGAT business and operative units to support their business operations and plans and improve efficiency. Sections or departments with same or similar functions were merged to reduce duplication. The restructuring of those individual units are aimed to gradually downsize the organization and prepare for future organizational change.

Modern processes and practices concerning human resource management have been developed and adopted in order to improve efficiency and productivity, enabling the organization to achieve its strategic goals and sustain its competitive position in the changing business environment. Over recent years, EGAT has continuously improved its performance appraisal systems to be consistent with international business practices. Performance of individual units has been evaluated and benchmarked by independent appraisal committees comprising both EGAT management and experts from public and private sectors. The performance evaluations will be a critical factor in deciding pay rise and promotion. These practices are aimed to increase motivation for work development and efficiency while also enhancing management transparency.

During the year, EGAT has conducted a research on principle competencies of EGAT's managerial positions in order to identify core competencies for execu-

tives which are critical for achieving EGAT's mission and success. The study will also develop an instrument for measuring performance of EGAT's executives against the core competencies and will be used as management tools for leadership development and succession planning. The research found out that the core competencies which have driven EGAT's growth and success included not only its expertise, knowledge and innovation in the electricity industry, but also such other attributes as its social loyalty, integrity, transparency, accountability and continual learning and adaptability.

The core competency research represented EGAT's continual implementation of learning organization. It will encourage EGAT people to develop their systematic thinking and analysis while exploring new ways of effective business development to create added value for the organization. This will help strengthen effective learning and development in EGAT, enabling its people to readily adapt to the industry's continuous changes.

In effort to improve the quality and efficiency of its operations, EGAT has adopted a variety of quality management systems. Such standardized quality management tools as ISO 9000 quality management system, ISO 14001 environmental management system, health and safety management, and loss control management have been implemented organizationwide.

EGAT has continuously implemented the International Safety Rating System (ISRS) into its core operational divisions and support divisions since 1994. ISRS is an internationally recognized measurement and evaluation tool based on a number of critical elements found to be common to most successful health and safety programmes. In 2002, a total of 37 power plants, transmission facilities and other divisions have met ISRS compliance and gained different ISRS levels ranging from 1 to 6 depending on the risk degrees of individual facilities. EGAT's safety and loss control management practices have significantly reduced accidents and losses in human resources, properties and production process, thus resulting in increased efficiency and reduced production cost.

In 2002, ten of EGAT's generation and transmission facilities won the Ministry of Labour Awards for Outstanding Business Establishment. The awards have well reflected the successful implementation of EGAT's standardized management of safety, occupational health and environment, which has always been EGAT's priority concern.

In 2002, EGAT had a total work force of 27,950 working at either Headquarters or power plants and substations situated in provinces across the country. Each year, a wide variety of training programmes and seminars have been organized to enhance knowledge, skills and competencies of EGAT people at all levels. Training courses have been tailor-made to meet specific needs of each function unit, both in technical and management aspects. The training is also to prepare them for business organizational changes.

Apart from the training programmes organized for its people, EGAT has also provided, upon request, various training services to private companies including IPPs, SPPs and power utilities of the ASEAN member countries. The technological transfer has contributed not only to EGAT's reputation for technical expertise, but also to power technological development of the ASEAN region as a whole.



Service Businesses

Apart from its main mission of powering the nation with quality electricity service, EGAT, with its diverse assets and technical expertise, has been providing energy-related services to industrial and business sectors since 1995. Its service businesses cover a wide range of services from engineering, operation and maintenance, construction, survey, testing, technical consulting, chemical, to information technology services. The biggest source of additional income is derived from its Maintenance Business Unit which has been awarded long term contracts for providing operation and maintenance services for power facilities of private power companies including Rayong power plant, Khanom power plant, Independent Power (Thailand) Company, and etc.

In addition, other service businesses have also expanded and created more income to EGAT. Transmission System Business has, for instance, created value-added income from its transmission system maintenance service, i.e. leasing its renovated transmission equipment and facilities and sales of used transformers. Genera-

tion Business Unit has produced extra profits from the sales of such by-products from its generation plants as fly ash, gypsum and hydrogen supply. In 2002, various business units and supporting divisions generated a total additional income of 1,519 million baht from their services given to outsiders detailed as follows:

	Unit: million baht	
	2002	2001
Business Units		
Maintenance Business Unit	1,088.21	898.53
Transmission System Business Unit	117.04	94.71
Generation Business 1 Unit	20.57	3.66
Generation Business 2 Unit	89.52	77.18
Fuel Business Unit	21.95	16.89
Engineering Business Unit	20.38	17.70
Operative Units		
Internal Audit Division	0.25	0.23
Administration Unit	37.44	17.31
Policy and Planning Unit	7.30	73.46
Account and Finance Unit	0.14	-
Hydro Plant Unit	98.80	13.82
Construction Unit	17.13	14.31
Total	1,518.73	1,227.80

In addition, EGAT also planned to establish a joint venture with the PTT Public Company Limited. The new joint venture which was seeking approval from the Cabinet was projected for establishment in Febru-

ary 2003. This new company will develop a District Cooling System and Power Plant (DCS PP) Project to supply chilled water and electricity to the new Suvarnabhumi international airport complex in 2004.

Associated Companies

Electricity Generating Public Company Limited

As at 30 September 2002, Electricity Generating Public Company Limited (EGCO) had a total registered capital of 530 million shares equivalent to 5,300 million baht, which were issued and paid up to 526,465,000 shares or 5,264.65 million baht. EGCO's shareholding structure comprises EGAT holding 25.41%, CLP Power Projects (Thailand) Limited 21.49% and the general public 53.10%.

EGCO is structured as a holding company with a number of subsidiaries which generate and sell electricity or operate in other energy-related businesses, namely Rayong Electricity Generating Company, Khanom Electricity Generating Company, EGCO Engineering & Service Company, EGCO International (BVI) Limited, Thai LNG Power Corporation and EGCO Green Energy Limited. EGCO also invests in joint ventures in Thailand and abroad, including Gulf Electric Public Company, EGCO Joint Ventures & Development Company and Conal Holdings Corporation. It also invests in associated companies including TLP Cogeneration Company, Amata-EGCO Power Company and Amata Power-ESCO Service Company, and etc.

To pursue its business growth, EGCO planned to increase its equity capacity from the current 2,785 MW to 5,000 MW by 2005. Towards that goal, on September 27, 2002, EGCO signed a Share Sale and Purchase Agreement with Tractebel S.A. in order to purchase 100% stakes of both Nong Khae Cogeneration Company and Samutprakarn Cogeneration Company in the amount of US\$ 94.30 million. EGCO's installed capacity will thus increase to 2,912 MW.

As at September 30, 2002, EGCO had the total assets of 54,439.44 million baht, total liabilities of 33,808.98 million baht and total shareholders' equity of 20,630.46 million baht. For the nine-month period of the year 2002, EGCO recorded the total revenues of 9,258.80 million baht which increased by 4.84% and the

net profit of 2,802.47 million baht which increased by 21.46% from the same period of the prior year. At the meeting on August 26, 2002, EGCO Board of Directors approved the interim dividend payment of 1.25 baht per share on September 24, 2002. EGAT thereby received the dividend totalling 167.22 million baht from EGCO.

Ratchaburi Electricity Generating Holding Public Company Limited

As at 30 September 2002, Ratchaburi Electricity Generating Holding Public Company Limited (RATCH) had a total registered capital of 1,450 million shares or 14,500 million baht. RATCH's shareholding structure comprises EGAT and the general public holding 45% and 55% stakes respectively.

RATCH is structured as a holding company owning shares and investing in its two subsidiaries, namely Ratchaburi Electricity Generating Company - the operator of Ratchaburi Power Plant, and Ratchaburi Energy Company - the company currently investing in three mini hydropower plant projects, namely Pa Sak Jolasid dam, Khlong Thadan dam and Chao Phraya dam.

For the nine-month period of 2002 ending on September 30, RATCH and its subsidiaries had the total assets of 60,780.12 million baht, total liabilities of 39,861.97 million baht and shareholders' equity of 20,918.15 million baht. The company's total revenues amounted to 19,362.65 million baht, which increased 42.42% from the same period of the previous year. Net profit rose from 2,408.18 million baht in 2001 to 3,072.94 million baht in 2002.

On November 1, 2002, EGAT sold the 7,584 million baht Ratchaburi combined cycle block 3 to Ratchaburi Electricity Generating Company. The complete transfer of Ratchaburi power plant project from EGAT made RATCH the country's largest independent power producer with its combined capacity 3,645 MW.



A variety of occupational promotion programmes have been arranged by EGAT to transfer basic sustainable agricultural techniques and knowledge to the local people. Training programmes including agricultural promotion, cage fish farming, aquaculture, biological way of life, and etc, have significantly contributed to job creation, increased agricultural production, increased income, and better living for the local people.



Environmental Responsibility

The year 2002 marked the 10th anniversary of the United Nations Conference on Environment and Development, or commonly known as the Earth Summit, held in Rio de Janeiro in 1992. At the Rio Conference, the international community subscribed to the definition of sustainable development resulting from the World Commission on Environment and Development in Stockholm in 1972. The common theme of sustainable development, which combines the economic, social and environmental dimensions of development, has been widely recognized and integrated into many countries' social and economic development strategic plans.

Accordingly, Thailand's national development strategies have been strengthened and adjusted to the need for more sustainable forms of natural resources management and conservation. A legal foundation has been established to enhance sustainable development in the country. Several laws and regulations related to environmental protection were promulgated during this past decade, such as the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992), the Factory Act B.E. 2535 (1992), the Public Health Act B.E. 2535 (1992) and the Hazardous Substance Act B.E. 2535 (1992). The new 1997 Constitution of the Kingdom of Thailand also contains specific definitions and provision for the government responsibility and citizen's rights in the management and development of natural resources and environment.

In September 2002, the World Summit on Sustainable Development was held in Johannesburg to review the progress and results achieved by country members over the past decade. In the context of energy, the global effort to combat greenhouse gas emissions and global climate change has had limited success. To stabilize the greenhouse gas concentrations in the atmosphere, which impact on the global climate system, will require more commitment and cooperation among the country members ratified to the Kyoto Protocol. For the electricity sector, guidelines for fostering sustainable electricity development have been established to provide a framework of best practices for all countries as follows:

1. Improve the efficient use of natural energy resources.
2. Foster and maximize electricity generation from renewable and alternative energy such as hydro, solar power, wind energy and biomass.
3. Adopt advanced, cleaner and more efficient fossil fuel technologies for new power plants and improve efficiency of existing power facilities to reduce primary fuel consumption and greenhouse gas emissions.
4. Implement demand side management to promote energy efficiency and conservation.
5. Develop power generation sources that are appropriate to local social and economic conditions and promote participation and effective involvement of local communities and organizations and other relevant stakeholders in business decision-making processes and practices to achieve mutual benefits and sustainable development.

The year 2002 provided a timely opportunity for EGAT to review and report on its achievements and contribution to sustainable development over the past decade, which have well balanced the economic growth, social progress and environmental protection. Key events and initiatives include:



September 1993 EGAT launched Demand Side Management Programme (DSM) to promote efficient use of electricity. The implementation strategy is based on the consumer and manufacturer cooperation on a voluntary basis. Consumers still enjoy usual comfort from electricity with cheaper bills. Market transformation has been achieved through voluntary agreement with local manufacturers and businesses to develop and produce only high efficiency and cost-saving electrical appliances. EGAT's DSM programmes cover all sectors of electricity consumption including residential, commercial and industrial sectors.

October 1994 EGAT's first environmental policy was stated under its Safety, Health and Environmental Policy. All levels of management are responsible for ensuring that activities in their areas of responsibility comply with relevant regulations and standards.

June 1999 An updated corporate environmental policy was declared on June 5, 1999. EGAT stated its commitment to pollution prevention and minimizing environmental impacts from its operations and activities and its strict compliance with environmental regulations and standards. EGAT is also conscious with

its social responsibility and will cooperate with local communities to improve the quality of life of people living in the areas in which EGAT operates. It is all EGAT employees' responsibility to fulfil corporate commitments in environmental management and social responsibility. All business units are also encouraged to implement standardized environmental management system.

August 1999 Wang Noi is EGAT's first power plant to be certified with ISO 14001 EMS. By the year 2000, all major power stations received ISO 14001 certification. In addition, other facilities including Mae Moh Lignite mine, substations and hydropower plants have successively been certified to ISO 14001 standard in the following years.

March 2002 EGAT was the first organization in the country to state its People Policy, pledging its corporate commitment to earning and maintaining social trust and cooperative relationship with the public. This initiative has put EGAT at the forefront in environmental protection and social responsibility.

Efficiency Improvement of Electricity Supply System

EGAT has adjusted its strategic planning and implementation to enhance sustainable development as follows:

- Improving efficiency of existing generating systems as well as expanding the generating capacity at existing power plants instead of greenfield project development. This efficiency improvement strategy has been implemented by several major power plants including Mae Moh, Bang Pakong, South Bangkok, Surat Thani, Krabi and Lan Krabue power plants. Advanced combined cycle power technology, which offers high generating efficiency, has also been employed at Bang Pakong, Wang Noi and South Bangkok power plants.

- Developing only the power projects proved to be economically affordable, environmentally sound and provide social benefits. A feasible power project must benefit not only the public at large but also the local communities in particular. EGAT's power stations and associated facilities have all been equipped with appropriate pollution control technologies and environmental management system to ensure their conformance to relevant regulations and standards. All of its major power plants and other support facilities have achieved the ISO 14001 standard for environmental management.

- Maximizing the use of clean fuels such as natural gas and renewable and alternative energy. In effort to increase electricity generation from renewable energy, EGAT has installed pumped storage hydropower generators at two of its major dams, namely Srinagarind and Bhumibol dams. A new Lam Takhong pumped storage hydropower project was also implemented. In addition, EGAT has also maximized non-utility generation by encouraging small power producers (SPPs) to supply the power system with electricity fuelled with agricultural and industrial wastes.

- Minimizing line loss in the transmission system by upgrading existing transmission lines to the higher voltage lines of 500 kV, 230 kV and 115 kV. This resulted in the continual reduction of line loss from 4.41% in 1992 to 2.18% in 2002, representing the saving of 14,065 million kWh of electricity and the reductions of 10.40 million tonnes of CO₂ emissions.

Demand Side Management (DSM)

Conservation and efficient use of electricity is the main objective of EGAT's DSM implementation. The achievement of peak demand savings of 735.70 MW and 4,163.80 million kWh of energy during the first phase (1993 - 2002) was a great success and resulted in CO₂ reduction of 3.08 million tonnes. EGAT's most successful DSM strategy centred on its campaigns to promote the use of high efficiency electrical appliances such as the Energy Efficient Thin Tube Fluorescent Lamp Programme, Energy Efficient Refrigerator Programme, and etc.

Social Responsibility

EGAT recognizes the changing of social and political context and the rights of the people and local community over natural resource utilization and management as well as the right of the people to be informed of project and associated activities which may have an effect upon environmental resources and their well being. Public participation in EGAT's power project planning and development was initiated in 1993 when all stakeholders and affected people were given the opportunity to be informed of the project news and activities and to participate in the development of Lam Takhong

pumped storage project from an early stage. In the form of a tripartite committee representing all concerned government agencies, community leaders and affected people, they all took part in the development of the environmental mitigation and development plans which integrated input and opinions from all parties concerned.

The successful cooperation had led to an effective project monitoring to ensure that the project construction and associated activities would not cause adverse effects to the environment and local people nearby. Quality of life improvement and community development programme was developed and successfully implemented based on the needs and input from the affected people and local communities. This form of public participation has been adapted to suit to different local social context and conditions at other EGAT's power project developments such as Krabi thermal power project and Wiang Hang lignite mine development project which have been striving for collaborative relationship with the local people and communities.

Social programmes and activities contributing to the general public and the local communities in the vicinity of EGAT's business include the construction and rehabilitation of community infrastructures, financial



and technical support to promote education, religious and cultural activities. EGAT's support also covers occupational development, health care service for rural villagers, and disaster relief and assistance. The declaration of the corporate environmental policy and people policy has well testified EGAT's commitment to its social responsibility.

Environmental Resource Development and Rehabilitation

EGAT has continuously pursued and supported research and development programmes to improve the effectiveness of its environmental technologies and management. EGAT in 1997, in cooperation with the Centre for Environmental Technology Transfer and Development (CETTAD), Ministry of Science, Technology and Environment has conducted researches and transfer of proven technology on waste utilization and reuse. One of the successful researches was on the utilization of lignite fly ash from Mae Moh power plant in different usages that are safe for human and the environment. Fly ash can be used in concrete for construction work, improving soil quality for agriculture, or making lightweight insulation brick, and etc. In the year 2002, about 1.30 million tonnes of fly ash, which

accounted for 36.70% of the total fly ash produced, was used for many purposes. Other research for environmental benefit included a study to improve fuel oil ash quality for reuse as a fuel in household and factories.

In addition, EGAT has continued to support case studies for environmental development and rehabilitation associated with EGAT's business. These researches included the development of transgenic wetland vegetation (*ipomoea aquatica*) for effective absorption of sulphate in the wastewater from Mae Moh power plant, and the study on health effects from air pollution upon the people of Mae Moh district, Lampang province. EGAT also cooperated with the Asian Development Bank (ADB) in supporting Montgomery Watson Harza, the consultant in the study and evaluation of Mae Moh Mine and Power Plant Environmental Work. These studies and researches completed in 2002 have provided very useful information for improving environmental management and enhancing quality of life of the people residing in the vicinity of Mae Moh mine and power complex. Other efforts to rehabilitate environmental resources were the reforestation projects undertaken in several areas over the country including the completed 300,000 rai reforestation project in honour of His Maj-



esty King Bhumibol, the mangrove rehabilitation project in Prachuap Khiri Khan province and the watershed reforestation upstream of EGAT's dams and reservoirs.

Environmental Achievements in 2002

With corporate social responsibility and sound environmental management, EGAT received 2002 EIA Awards from the Ministry of Natural Resources and Environment for the sound environmental management of Wang Noi power plant and Lam Takhong pumped storage hydropower project.

To further improve the quality of life of the people living in the lower Mun River vicinity of Pak Mun Dam, EGAT requested Thailand Institute of Scientific and Technological Research to conduct an updated study on social and economic environment and to formulate a sustainable plan for community development and quality of life improvement. This particular study scheduled to be completed in early 2003 will provide useful information and a framework for EGAT to carry on its social responsibility in the best interests of the local people.

During the year 2002, EGAT halted the operation of Pak Mun Dam for 12 months in response to the 17 April 2001 Cabinet Resolution to give way to the research and study on riverine ecosystem and fisheries resources in Pak Mun River by local experts and scholars. Based on the study result and to rehabilitate the Pak Mun River ecosystem, the Cabinet had made a final resolution for the opening of Pak Mun Dam's sluice gates for a four-month period from July to October each year to allow fish migration upstream during the spawning season. As such, EGAT will continue its efforts to build mutual understanding among the public and fully cooperate with all stakeholders and local people to manage Pak Mun Dam in a sustainable way which will fulfil its multipurpose objective for long term benefits of the local people and the country as a whole.



Social Responsibility

Social responsibility is an integral part of EGAT's operations. It is committed to conduct business in a responsible way that respects ethical values, people, communities and the environment. In March 2002, EGAT issued its People Policy reaffirming its resolve to the public and society. It strives to develop and nurture collaborative relationships built on mutual understanding and respect with the local community and society. In addition to enhancing public participation in its project development, EGAT has created partnerships with public and private agencies, communities and all groups of civil society in a wide variety of social development activities with a view to enhancing the quality of life of the Thai people.



Honouring the Thai Monarchy

Like all Thais, EGAT feels grateful for the benevolence and support of His Majesty the King and the Royal Family. As a token of its loyalty and gratitude, EGAT has provided technical and financial support for the government's projects or events launched in honour of the royal members on special occasions. In 2002, EGAT sponsored 250,000 baht rewards for the Logo Design Contest for Sirindhorn International Environmental Park. The park located in Phetchaburi province is a cooperative project of Phra Ratchanives Marukadhayawan Foundation, Huai Sai Royal Development Study Centre, and the Border Patrol Police Bureau launched to celebrate HRH Princess Maha Chakri

Sirindhorn's fourth cycle (48th) birthday anniversary to fall on April 2, 2003. In addition, EGAT had the honour to welcome Her Majesty the Queen and other royal members who graciously made short stays at EGAT's dams on several occasions when they visited the local people in various parts of the country. Regular donations are also given to support the implementation of various royal development projects and other royal activities.

Educational Promotion

Recognizing the importance of education as the driving force towards development of human resources and subsequently, the progress of the country, EGAT has regularly granted scholarships to students in primary and secondary schools and universities throughout the country. It also provides support for school lunch programmes to help improve health and nutrition of students in rural areas.

Every year, EGAT organizes youth camp programmes which are held during school vacations to create awareness on energy and environmental conservation among secondary school students while inculcating them with values on integrity and morals. It also makes partnerships with schools and universities in organizing academic exhibitions or lectures. Learning aids and equipment as well as sports items are also donated to rural schools throughout the country. EGAT also supports the establishment of community libraries to serve as a source of knowledge and information for local communities.

Community Development

EGAT has regularly implemented and participated in several social service programmes to help strengthen the economy and the well being of the community. Its development programmes including occupational promotion are designed and operated to meet particular needs and social context of each community. A Biological Way of Life for Sustainable Development programme has regularly been implemented to provide knowledge and training for the local people to improve farming practices by using nature-based techniques. In addition, EGAT has regularly dispatched its mobile medical care units to provide medical service for villagers both in the vicinity of EGAT's operations and in remote areas throughout the country. They will receive free-of-charge treatment, medication and advice from EGAT's qualified doctors, dentists, pharmacists and nurses. Donations are regularly made to several charitable activities for the benefit of the underprivileged as well as disaster victims.

Cultural and Religious Promotion

EGAT has cooperated with various agencies and organizations in cultural and religious promotion activities. Each year, large donations are made to Thai temples as well as other religious institutions for charity purposes.

In 2002, EGAT has lent technical and financial support to the construction of shrines of Thai temples and to the production of television programmes with a view to disseminating and promoting Thai cultural heritage.

Environmental Quality Enhancement

In carrying out its operations, EGAT has been committed to minimizing adverse impacts on the environment and developing the quality of the environment and quality of life. The ISO 14001 environmental management system has been implemented at EGAT's power plants and transmission facilities, not only to ensure complete compliance with regulatory environmental standards and legislation, but also to further improve EGAT's environmental performance, environmental quality and the quality of life.

Apart from compliance with environmental regulations and legislation, EGAT has also made a further step in developing the quality of the environment and the quality of life of communities in the vicinity of EGAT's operations and elsewhere across the country.

Since 1994 EGAT has launched a reforestation programme to join with the nation in celebrating the Royal Golden Jubilee of His Majesty the King's Accession to the Throne. The programme is aimed at returning fertility to the country's once-degraded forest areas. After years of the concerted effort of EGAT people and the local people in planting and maintaining young trees, EGAT has successfully completed and handed over the 300,000 rai (118,608 acres) of reforested lands to the Royal Forest Department for further caring.

In 2001, it then launched the second phase of reforestation programme with a new target of 20,000 rai (7,900 acres) of additional forest plantation to be completed by 2006. EGAT's reforestation programme not only has helped revitalize Thailand's forests, but also has created more income to the local people and strengthened the local economy. But above all, it has created among the local communities a sense of shared ownership and responsibility for the growing reforested land. This will ensure sustainability of the Thai forests in the long run.





Electricity is a vital engine for growth, development and prosperity of the country. Above all, it helps improve the quality of life of the Thai people countrywide. EGAT is proud to have a stake in the economic and social well-being of the country.



Events



Her Majesty Queen Sirikit graciously visited the people and followed up the progress on the Royal Development Projects in northern provinces in April 2002. While performing her royal duties in the North, Her Majesty resided at Sirikit dam in Uttaradit province during April 1 - 3, 2002. Picture shows Her Majesty being welcomed by EGAT Governor Vitaya Kotcharug upon arrival.



HRH Crown Prince Maha Vajiralongkorn, accompanied by Mom Srirasmi Mahidol na Ayudhya, graciously presided over the Buddha Image Casting Ceremony at EGAT Headquarters on July 23, 2002. Three images of Phra Buddha Siri Sattaraj were bestowed upon EGAT to be established at its Headquarters, Srinagarind dam and Vajiralongkorn dam. Picture shows HRH the Crown Prince pouring molten gold to be used in casting the Buddha images.



On May 24, 2002, HRH Princess Maha Chakri Sirindhorn visited Cambodia to follow up on the progress of the royally initiated Secondary and Vocational School Project in Kampung Thom. On the royal visit to the school, Her Royal Highness graciously inaugurated the Green Learning Room which was implemented by EGAT. Picture shows EGAT Chairman of Board of Directors Somchai Richupan presenting a brief report on the implementation of EGAT's Green Learning Room Programme for Cambodia.



Venerable Phra Dhamma Visuddhi Mongkol or known as Luang Ta Maha Boowa Nanasampanno received a donation of 1.6 million baht and US\$ 676 in cash and one kilogram of gold from EGAT Governor Vitaya Kotcharug at Ubol Ratana dam, Khon Kaen province, on March 16, 2002. The donation by EGAT's employees would go to the Venerable Luang Ta Maha Boowa's Thai Helps Thai Fund, a nationwide fund-raising campaign to strengthen the country's foreign reserves in the wake of the economic crisis in 1997.



EGAT and Electricite du Laos (EDL) reached an agreement for the third revision of the power purchase agreement for electricity purchase from Laos' Nam Ngum dam. The agreement was signed by EGAT Governor Vitaya Kotcharug and EDL Deputy General Manager Khamphone Saignasane in Vientiane on March 26, 2002. On this occasion, both utilities also entered into a Memorandum of Understanding for technical cooperation.



EGAT by Governor Vitaya Kotcharug transferred Ratchaburi combined cycle power plant blocks 1 and 2 totalling 1,450 MW to Ratchaburi Electricity Generating Company represented by Boonchoo Direksathapon, the Managing Director of Ratchaburi Electricity Generating Holding Public Company Limited at the official transfer ceremony held at Sofitel Central Plaza Hotel on April 18, 2002.



EGAT and Tenaga Nasional Berhad of Malaysia entered into the HVDC System Interconnection Agreement (SIA) which allowed the power transfer and trade of 300 MW between Thailand and Malaysia. The signing ceremony was held in Kuala Lumpur, Malaysia on May 14, 2002.



EGAT Governor Vitaya Kotcharug officiated the commissioning of Lam Takhong pumped storage unit 1 of 250 MW in Nakhon Ratchasima province on August 30, 2002.



Bhumibol hydropower plant has been certified to ISO 14001 for its accredited environmental management system (EMS) by Anglo Japanese American Registrars (AJA) Company. AJA Managing Director Panthep Panfak presented the ISO 14001 certificate to EGAT Governor Vitaya Kotcharug on September 10, 2002.



EGAT and Electricite du Cambodge (EDC) entered into a Power Purchase Agreement. The agreement was signed by EGAT Governor Vitaya Kotcharug and EDC Managing Director Tan Kim Vinn in Siem Reap, Cambodia on July 2, 2002. Under this 12-year agreement, EGAT will sell approximately 30 MW of electric power to Ban Teay, Manchey, Battambang and Siem Reap in Cambodia.

Key Statistical Data

TABLE 1 SYSTEM PEAK GENERATION REQUIREMENT

Source	Fiscal Year 2002 (April 4, 2002)		Fiscal Year 2001 (April 23, 2001)		Increase/(Decrease) Percentage
	MW	Percentage	MW	Percentage	
EGAT's power plants					
Thermal	4,594.00	27.54	4,301.90	26.68	6.79
Combined cycle	3,584.20	21.49	3,724.80	23.10	(3.77)
Hydro	2,064.70	12.38	1,742.40	10.80	18.50
Gas turbine	127.10	0.76	110.30	0.68	15.23
Subtotal	10,370.00	62.17	9,879.40	61.26	4.97
Purchase	6,311.10	37.83	6,247.00	38.74	1.03
Grand Total	16,681.10	100.00	16,126.40	100.00	3.44

TABLE 2 GROSS ENERGY GENERATION AND PURCHASE

Source	Fiscal Year 2002		Fiscal Year 2001		Increase/(Decrease) Percentage
	Million kWh	Percentage	Million kWh	Percentage	
EGAT's power plants					
Natural gas	35,607.91	32.85	34,871.18	33.80	2.11
Lignite	16,890.30	15.58	17,306.58	16.78	(2.41)
Fuel oil	2,024.49	1.87	3,110.61	3.01	(34.92)
Hydro	6,480.87	5.98	6,310.55	6.12	2.70
Diesel oil	257.52	0.24	155.23	0.15	65.90
Renewable energy	1.81	–	1.74	–	4.02
Subtotal	61,262.90	56.52	61,755.89	59.86	(0.80)
Purchase					
Domestic IPPs and SPPs	44,305.77	40.88	38,515.41	37.33	15.03
Neighbouring countries	2,820.57	2.60	2,893.90	2.81	(2.53)
Subtotal	47,126.34	43.48	41,409.31	40.14	13.81
Grand Total	108,389.24	100.00	103,165.20	100.00	5.06

TABLE 3 ENERGY SALES

Customer	Fiscal Year 2002		Fiscal Year 2001		Increase/(Decrease) Percentage
	Million kWh	Percentage	Million kWh	Percentage	
PEA	64,230.79	62.67	60,303.38	61.90	6.51
MEA	36,288.20	35.41	35,327.39	36.27	2.72
Direct customers	1,484.13	1.45	1,333.11	1.37	11.33
Standby power supply	74.56	0.07	24.15	0.02	208.74
Electricite du Laos (EDL)	177.23	0.17	165.66	0.17	6.98
TNB (Malaysia)	29.73	0.03	5.36	0.01	454.66
Other minor customers	201.05	0.20	253.40	0.26	(20.54)
Total	102,485.69	100.00	97,412.45	100.00	5.21

TABLE 4 AVERAGE ENERGY SALES PRICE

Customer	Fiscal year 2002	Fiscal Year 2001	Increase/(Decrease) Percentage
	Baht/kWh	Baht/kWh	
PEA	2.06	1.99	3.52
MEA	1.92	1.88	2.13
Direct customers	1.97	1.91	3.14
Standby power supply	3.17	4.48	(29.24)
Electricite du Laos (EDL)	1.35	1.39	(2.88)
TNB (Malaysia)	1.91	1.58	20.89
Other minor customers	1.51	1.30	16.15
Overall Average *	2.02	1.90	6.32

* The price included Automatic Adjustment Mechanism (Ft) charge but excluded VAT and other income

TABLE 5 THAILAND'S SYSTEM INSTALLED CAPACITY

Source	Fiscal Year 2002		Fiscal Year 2001		Increase/(Decrease) Percentage
	MW	Percentage	MW	Percentage	
EGAT's power plants					
Thermal	6,255.00	26.33	6,255.00	28.39	–
Combined cycle	5,074.60	21.36	5,074.60	23.03	–
Hydro	2,886.27	12.15	2,886.27	13.10	–
Gas turbine	778.00	3.28	778.00	3.53	–
Diesel	6.00	0.03	6.00	0.03	–
Renewable energy	0.53	–	0.53	–	–
Subtotal	15,000.40	63.15	15,000.40	68.08	–
Purchase from					
Domestic private power plants					
– IPPs	6,346.00	26.72	4,926.00	22.36	28.83
– SPPs	1,768.40	7.44	1,768.40	8.03	–
Subtotal	8,114.40	34.16	6,694.40	30.38	21.21
Neighbouring power sources					
– Laos	340.00	1.43	340.00	1.54	–
– EGAT-TNB Interconnection	300.00	1.26	–	–	–
Subtotal	640.00	2.69	340.00	1.54	88.24
Total Purchase	8,754.40	36.85	7,034.40	31.92	24.45
Grand Total	23,754.80	100.00	22,034.80	100.00	7.81

IPPs Independent power producers

SPPs Small power producers

TABLE 6 TRANSMISSION SYSTEM

Voltage Level (kV)	Fiscal year 2002			Fiscal Year 2001		
	Line Length Circuit-kilometres	Transformer Capacity MVA	Number of Substations	Line Length Circuit-kilometres	Transformer Capacity MVA	Number of Substations
500	2,789.85	10,050.00	8	2,132.05	8,850.00	7
230	11,219.74	35,393.34	54	10,907.37	34,826.68	54
132	8.70	133.40	1	8.70	133.40	1
115	13,837.21	14,325.24	130	13,939.31	14,059.24	130
69	52.07	114.50	2	52.07	114.50	2
22	–	2.00	–	–	2.00	–
Total	27,907.57	60,018.48	195	27,039.50	57,985.82	194



TABLE 7 FUEL CONSUMPTION AND EXPENSES

Type of Fuel	Fiscal Year 2002		Fiscal Year 2001	
	Amount	Cost (Million Baht)	Amount	Cost (Million Baht)
Natural gas (million cubic feet)	344,184	42,159	345,315	41,975
Fuel oil (million litres)	514	3,586	782	5,204
Lignite (million tonnes)	15	6,430	15	6,464
Diesel oil (million litres)	71	857	46	580

TABLE 8 RESERVOIR OPERATION

Operation	Fiscal Year 2002	Fiscal Year 2001	Increase/(Decrease) Percentage
Reservoir capacity (million cubic metres)	62,330	62,330	–
Total storage at fiscal year end (million cubic metres)	57,362	54,963	4.36
Total water inflow (million cubic metres)	40,120	35,632	12.60
Total water release (million cubic metres)	38,803	38,862	(0.15)
– Passed through generators	33,831	35,287	(4.13)
– Extra release without passing through generators	2,094	656	219.21
– for additional irrigation	326	370	(11.89)
– for other purposes	1,768	286	518.18
– Evaporation and losses	2,878	2,919	(1.40)
Energy generation (million kWh)	6,481	6,311	2.69
Water rate (cubic metres/ kWh)	5.22	5.59	(6.62)

Financial Report



Electricity Generating Authority of Thailand

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No. EGAT 15/ 2003

TO WHOM IT MAY CONCERN

This is to certify that the English version of the Report of Independent Auditor together with the Financial Statements for the years ended September 30, 2002 and 2001 of the Electricity Generating Authority of Thailand were translated by the Electricity Generating Authority of Thailand from that of the Thai version.

Issued on February 3, 2003

ELECTRICITY GENERATING AUTHORITY OF THAILAND

A handwritten signature in black ink, appearing to read 'Santad Jirayuwat', is positioned above the printed name of the Deputy Governor.

(Mr. Santad Jirayuwat)
Deputy Governor – Account and Finance
Acting on behalf of Governor

(TRANSLATION)
REPORT OF AUDITOR

To The Board of Directors,
Electricity Generating Authority of Thailand

Office of the Auditor General has audited the balance sheets of the Electricity Generating Authority of Thailand as at September 30, 2002 and 2001, and the related statements of income, retained earnings and cash flows for the years then ended. These financial statements are the responsibility of the Electricity Generating Authority of Thailand's management as to their correctness and completeness of the information. The responsibility of Office of the Auditor General is to express an opinion on these financial statements based on the audits.

Office of the Auditor General conducted the audits in accordance with generally accepted auditing standards. Those standards require that Office of the Auditor General plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statements presentation. Office of the Auditor General believes that the audits provide a reasonable basis for the opinion.

Office of the Auditor General issued an audit report dated February 15, 2001 which expressed an unqualified opinion on the financial statements of EGAT for the year 2001, except for the establishment of the Mine Reclamation Sinking Fund. EGAT contributed into the fund for the year 2001 an amount of Baht 111.70 million, which was recorded as an expense in the statement of income. The amount charged to the Fund was not an actual expense incurred and could not be estimated with reasonable certainty. EGAT did not consolidate the revenue and expense of the fund in the statements of income, which was not in accordance with generally accepted accounting principles. This resulted in the net income for the year ended September 30, 2001 being lower by Baht 89.89 million. For the year 2002, EGAT has changed its accounting policy by reclassifying the Mine Reclamation Sinking Fund from a specific sinking fund included in equity to Provision Liabilities for Mine Reclamation included in other liabilities due to the certainty of the liability. EGAT has retroactively adjusted its financial statements for the year 2001, which are presented as comparatives herein, so as to be in conformity with generally accepted accounting principles, as discussed in Note 3.1 to the financial statements. Accordingly, the current auditor opinion on comparative financial statements for the year 2001 varies from that stated in the previous year.

In the opinion of Office of the Auditor General, the aforementioned financial statements present fairly the financial positions of the Electricity Generating Authority of Thailand as at September 30, 2002 and 2001 and the results of its operations and its cash flows for the years then ended, and the results of its retained earnings of the year ended September 30, 2002 and 2001 in conformity with generally accepted accounting principles.

Office of the Auditor General draws the Board of Directors' attention to the Accompanying Note 3 relating to change in accounting policy, accounting estimates and fundamental error.

(Signed) Lakhana Bunyamanonukul
(Lakhana Bunyamanonukul)

Director of Audit Office No.5

(Signed) Launruk Thanee
(Launruk Thanee)

Auditor-in-Charge

Office of the Auditor General
December 23, 2002

ELECTRICITY GENERATING AUTHORITY OF THAILAND
BALANCE SHEETS
AS AT SEPTEMBER 30, 2002 AND 2001

	Remark	2002 Baht	2001 Baht (Restated)
ASSETS			
CURRENT ASSETS			
Cash and Bank Balances	4.1	22,617,048,415	14,183,460,317
Short-term investments in fixed deposits	4.2	8,987,109,782	10,550,567,936
Trade Accounts Receivable – Net	2.3, 4.3	30,890,798,205	29,351,617,638
Other Accounts Receivable – Net	2.3, 4.4	1,388,672,331	1,108,111,836
Materials and Supplies – Net	2.4, 4.5	5,618,542,733	7,945,914,096
Other Current Assets		<u>2,598,675,662</u>	<u>2,055,942,613</u>
Total Current Assets		<u>72,100,847,128</u>	<u>65,195,614,436</u>
INVESTMENT IN SUBSIDIARY AND ASSOCIATED COMPANIES			
	2.5, 4.6	<u>9,663,629,332</u>	<u>8,510,527,452</u>
FIXED ASSETS			
Land, Buildings, Plant and Equipment – Net	2.6, 2.7, 4.7	219,651,816,174	218,833,902,754
Works under Construction	4.8	<u>43,604,507,425</u>	<u>64,778,856,563</u>
Total Fixed Assets		<u>263,256,323,599</u>	<u>283,612,759,317</u>
INTANGIBLE ASSETS			
Deferred Charges	2.8, 4.9	19,789,110,979	21,475,624,083
Royalty on Real Property Services – Net	2.9, 4.10	<u>291,518,284</u>	<u>297,855,638</u>
Total Intangible Assets		<u>20,080,629,263</u>	<u>21,773,479,721</u>
OTHER ASSETS			
Sinking Fund for Redemption of Long Term Debts	2.10, 4.11	16,964,236,969	25,774,626,361
Loan to the Cooperatives Promotion Department	4.12	<u>20,462,684</u>	<u>34,762,684</u>
Total Other Assets		<u>16,984,699,653</u>	<u>25,809,389,045</u>
TOTAL ASSETS		<u><u>382,086,128,975</u></u>	<u><u>404,901,769,971</u></u>

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND
BALANCE SHEETS
AS AT SEPTEMBER 30, 2002 AND 2001

	Remark	2002 Baht	2001 Baht (Restated)
LIABILITIES AND EQUITY			
CURRENT LIABILITIES			
Short Term Loans	2.11	–	7,802,065,941
Electricity Purchased Payable	4.13	15,550,946,725	14,405,036,558
Accrued Remittance to the Ministry of Finance	4.14	9,555,000,000	7,514,000,000
Other Accounts Payable		14,533,263,087	21,823,332,264
Current Portion of Long Term Debts	2.11, 2.7	22,804,069,002	27,825,563,955
Accrued Borrowing Costs		3,070,079,795	3,846,231,678
Other Current Liabilities	4.15	<u>7,398,323,571</u>	<u>6,204,171,994</u>
Total Current Liabilities		<u>72,911,682,180</u>	<u>89,420,402,390</u>
LONG-TERM LIABILITIES	2.11, 2.7, 4.16	<u>159,489,337,059</u>	<u>183,721,889,879</u>
OTHER LIABILITIES			
Provident Fund	2.12, 4.17	23,517,984	22,935,046
Deferred Interest on Long Term Debts	4.16	8,036,900	8,371,800
Provision Liabilities for Mine Reclamation	2.13, 4.18	1,444,691,317	1,462,106,608
Deferred Contributions	2.14, 4.19	<u>2,127,162,103</u>	<u>2,057,567,760</u>
Total Other Liabilities		<u>3,603,408,304</u>	<u>3,550,981,214</u>
TOTAL LIABILITIES		<u>236,004,427,543</u>	<u>276,693,273,483</u>
EQUITY			
Contribution from the Government	4.20	10,396,746,864	10,459,079,626
Surplus from Contributions	2.6, 4.21	3,004,186,732	2,907,979,729
Surplus from Royalty on Real Property Service		474,767,280	474,767,280
Retained Earnings			
Appropriated			
Capital Expenditure Appropriation		80,186,366,913	80,186,366,913
Unappropriated		41,750,880,400	23,911,549,697
Welfare Fund	2.15, 4.22	256,192,450	256,192,450
Specific Purpose Funds	2.16, 4.23	<u>10,012,560,793</u>	<u>10,012,560,793</u>
TOTAL EQUITY		<u>146,081,701,432</u>	<u>128,208,496,488</u>
TOTAL LIABILITIES AND EQUITY		<u>382,086,128,975</u>	<u>404,901,769,971</u>

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

(Signed) SOMCHAI RICHUPAN
(SOMCHAI RICHUPAN)

Chairman

(Signed) SITTHIPORN RATANOPAS
(SITTHIPORN RATANOPAS)

Governor

ELECTRICITY GENERATING AUTHORITY OF THAILAND
STATEMENTS OF INCOME
FOR THE YEARS ENDED SEPTEMBER 30, 2002 AND 2001

	Remark	2002 Baht	2001 Baht (Restated)
OPERATING REVENUES			
Electric Energy Sales	2.1	207,198,062,905	185,194,069,863
Less : Social Contributions		<u>97,014,193</u>	<u>122,329,216</u>
Total Operating Revenues		<u>207,101,048,712</u>	<u>185,071,740,647</u>
OPERATING EXPENSES			
Electricity Purchased	4.24	93,889,753,334	84,436,995,439
Fuel	4.24	53,032,172,336	54,224,254,797
Other Energy Generating Expenses		9,791,423,890	9,920,593,785
Transmission Expenses		3,488,403,762	2,918,051,228
Administrative and General Expenses		5,622,759,726	4,535,153,689
Depreciation		<u>13,076,982,734</u>	<u>12,348,257,151</u>
Total Operating Expenses		<u>178,901,495,782</u>	<u>168,383,306,089</u>
		<u>28,199,552,930</u>	<u>16,688,434,558</u>
OPERATING INCOMES			
OTHER REVENUES			
Profit on Sale of Ratchaburi Power Plants Project	4.25	647,633,753	2,203,777,008
Bank Interests	2.2	830,017,725	1,580,880,911
Profit from Services		446,862,171	518,713,793
Gains on Foreign Exchange	4.26	4,224,926,625	2,226,366,670
Share of Profit from Subsidiary and Associated Companies	4.27	2,140,036,035	471,695,458
Others		<u>340,375,222</u>	<u>1,273,116,235</u>
Total Other Revenues		<u>8,629,851,531</u>	<u>8,274,550,075</u>
OTHER EXPENSES			
Loss on Disposal of Assets		178,637,017	158,591,119
Borrowing Costs	2.17, 4.28	8,777,543,245	9,983,958,929
Others	4.29	<u>522,893,496</u>	<u>549,108,014</u>
Total Other Expenses		<u>9,479,073,758</u>	<u>10,691,658,062</u>
NET INCOME	4.30	<u>27,350,330,703</u>	<u>14,271,326,571</u>

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

(Signed) SOMCHAI RICHUPAN
(SOMCHAI RICHUPAN)

Chairman

(Signed) SITTHIPORN RATANOPAS
(SITTHIPORN RATANOPAS)

Governor

ELECTRICITY GENERATING AUTHORITY OF THAILAND
STATEMENTS OF RETAINED EARNINGS
 FOR THE YEARS ENDED SEPTEMBER 30, 2002 AND 2001

	2002 Baht	2001 Baht (Restated)
UNAPPROPRIATED RETAINED EARNINGS		
AT BEGINNING OF YEAR	23,911,549,697	15,992,315,435
Add (Less): Adjustments		
Net profit of Specific Purpose Funds Year 2000	–	636,150,303
Share of Profit from Subsidiary Company and Associated Company Previous Year 2000	–	(2,436,242,612)
	<u>23,911,549,697</u>	14,192,223,126
Increase in Appropriation to the Ministry of Finance Year 2000	–	(38,000,000)
Decrease in Appropriation to the Ministry of Finance Year 2001	<u>44,000,000</u>	<u>–</u>
UNAPPROPRIATED RETAINED EARNINGS AT BEGINNING OF YEAR AFTER ADJUSTMENTS	23,955,549,697	14,154,223,126
Add: Net Income for the year	<u>27,350,330,703</u>	<u>14,271,326,571</u>
	51,305,880,400	28,425,549,697
Less: Provision for Appropriation to the Ministry of Finance	<u>(9,555,000,000)</u>	<u>(4,514,000,000)</u>
UNAPPROPRIATED RETAINED EARNINGS AT END OF YEAR	<u><u>41,750,880,400</u></u>	<u><u>23,911,549,697</u></u>

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND
STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED SEPTEMBER 30, 2002 AND 2001

	Remark	2002 Baht	2001 Baht (Restated)
CASH FLOWS FROM OPERATING ACTIVITIES			
Net income		<u>27,350,330,703</u>	<u>14,271,326,571</u>
Adjustments to reconcile net income to net cash provided by operating activities			
Operating activities			
Depreciation		13,770,810,326	13,115,353,897
Amortization of land rights		623,883,769	300,462,820
Amortization of deferred charges of the lignite mine		4,211,224,593	3,895,609,079
Amortization of royalty on real property services		6,337,354	6,337,354
Bad and doubtful debts		(85,262,534)	99,410,472
Allowance for obsolescence on materials and supplies		194,281,343	228,212,332
Share of profit from subsidiary and associated companies		(2,140,036,035)	(471,695,458)
Loss on disposal of assets		178,637,017	158,591,119
Profit on sale of Ratchaburi Power Plants project		(647,633,753)	(2,203,777,008)
Revenue from deferred contributions		(52,799,293)	(53,834,944)
Gains on foreign exchange		(4,590,196,008)	(1,475,986,201)
Decrease (Increase) in assets			
Trade accounts receivable		(1,453,367,632)	2,148,677,446
Other accounts receivable		(281,116,002)	34,660,703
Materials and supplies		612,616,875	(1,493,197,735)
Other current assets		(607,560,972)	(320,145,360)
Deferred charges of the lignite mine		(2,590,578,551)	(2,633,936,222)
Loan to the Cooperatives Promotion Department		14,300,000	-
Increase (Decrease) in liabilities			
Electricity purchased payable		1,145,910,167	5,099,531,360
Other accounts payable		(3,856,430,896)	(897,360,722)
Accrued borrowing costs		(776,486,783)	(779,658,012)
Other current liabilities		1,194,837,791	(665,692,662)
Provident fund		582,938	2,191,181
Provision liabilities for mine reclamation		(17,415,291)	49,379,819
Remittance to the Ministry of Finance payable		(7,470,000,000)	(16,620,000,000)
		<u>(2,615,461,577)</u>	<u>(2,476,866,742)</u>
Net cash inflows from operating activities		<u>24,734,869,126</u>	<u>11,794,459,829</u>

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND
STATEMENTS OF CASH FLOWS
FOR THE YEARS ENDED SEPTEMBER 30, 2002 AND 2001

	Remark	2002 Baht	2001 Baht (Restated)
CASH FLOWS FROM INVESTING ACTIVITIES			
Decrease in short-term investments in fixed deposits		1,563,458,153	1,112,827,522
Dividend received		986,934,155	401,320,986
Cash on sale of common shares		–	2,175,000,000
Cash on disposal of assets		100,796,273	163,191,622
Cash on sale of Ratchaburi Power Plants project		18,715,965,000	30,453,414,259
Capital expenditure (including interest)		(13,885,028,195)	(19,273,327,011)
Consumers contribution		122,393,637	51,490,592
Surplus from contributions		<u>70,253,777</u>	<u>80,631,220</u>
Net cash inflows from investing activities		<u>7,674,772,800</u>	<u>15,164,549,190</u>
CASH FLOWS FROM FINANCING ACTIVITIES			
Decrease (Increase) in sinking fund for redemption of long term debts		8,810,389,392	(9,207,640,741)
Repayment of short term loans		(7,761,045,773)	(15,598,940,350)
Short term loans received		–	21,608,423,500
Repayment of long term liabilities		(37,084,599,388)	(41,130,015,055)
Long term liabilities received		12,065,441,732	7,952,103,866
Repayment of finance lease liabilities		<u>(6,239,791)</u>	<u>–</u>
Net cash outflows from financing activities		<u>(23,976,053,828)</u>	<u>(36,376,068,780)</u>
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS		8,433,588,098	(9,417,059,761)
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR		<u>14,183,460,317</u>	<u>23,600,520,078</u>
CASH AND CASH EQUIVALENTS AT END OF YEAR	2.18, 4.1	<u>22,617,048,415</u>	<u>14,183,460,317</u>
ADDITIONAL CASH FLOWS INFORMATION:			
Cash payment during the year			
Interest expenses		12,443,359,422	14,388,769,790

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

ELECTRICITY GENERATING AUTHORITY OF THAILAND
NOTES TO FINANCIAL STATEMENTS
FOR THE YEARS ENDED SEPTEMBER 30, 2002 AND 2001

1. GENERAL INFORMATION

Electricity Generating Authority of Thailand (EGAT) was established by the Electricity Generating Authority of Thailand Act 1968 and subsequent amendments. EGAT is a juristic person with the following objectives:

1.1 To generate, acquire, transmit or distribute electric energy to:

- The Metropolitan Electricity Authority (MEA), the Provincial Electricity Authority (PEA) or other electricity authorities under the law thereon;
- Other electric energy consumers as prescribed by a Royal Decree;
- Neighbouring countries.

1.2 To undertake various activities concerning electric energy, energy sources deriving from natural resources and undertake business concerning electric energy and other businesses concerning or related to the activities of EGAT, or collaborate with other persons for the said activities.

1.3 To produce and sell lignite, or chemicals derived from lignite.

All properties, debts, rights and liabilities as well as other activities of the Yanhee Electricity Authority, the Lignite Authority and the Northeast Electricity Authority were transferred to EGAT. The said properties, when net of debts, became the capital of EGAT.

2. SIGNIFICANT ACCOUNTING POLICIES

2.1 REVENUE FROM ENERGY SALES

Revenue from energy sales is recognized according to metered delivery units at the selling point under the contract.

2.2 INTEREST RECEIVED

Interest received is recognized on a proportional basis according to the time and rate of return on assets.

2.3 ALLOWANCE FOR DOUBTFUL ACCOUNTS

The allowance for doubtful accounts is assessed by reference to the estimated losses arising from irrecoverable debts, exclusive of government agencies and state enterprises, which have been based on historical results of collection and the present events pertaining to trade accounts receivable at the end of the period. The allowance for doubtful accounts has been calculated on the following basis.

Time Overdue	Percentage of Allowance for Doubtful Accounts
Over 6 months – 1 year	50%
Over 1 – 2 years	75%
Over 2 years	100%

2.4 INVENTORIES

2.4.1 Fuel Oil is shown at average cost.

2.4.2 Lignite is shown at average cost.

2.4.3 Major spare parts are shown at average cost less provisions designed to write off the parts on a straight line basis over the useful lives of the plant.

2.4.4 Spare parts for mine equipment are shown at average cost less provisions for obsolescence of stocks which have not moved for one year or more. The provisions have been calculated at the following rates:

No movement within	Valued ≤ Baht 100,000	Valued > Baht 100,000
1 – 2 years	5%	5%
Over 2 – 5 years	15%	10%
Over 5 – 7 years	25%	20%
Over 7 – 10 years	75%	35%
Over 10 years	100%	50%

2.4.5 General materials and supplies are shown at average cost less provisions for obsolescence of stocks which have not moved for one year or more. The provisions have been calculated at the following rates:

No movement within	Valued ≤ Baht 40,000	Valued > Baht 40,000
1 – 2 years	15%	10%
Over 2 – 5 years	25%	20%
Over 5 – 7 years	50%	30%
Over 7 – 10 years	75%	40%
Over 10 years	100%	50%

2.5 INVESTMENT IN SUBSIDIARY AND ASSOCIATED COMPANIES

EGAT accounts for investment in its subsidiary and associated companies by the equity method.

2.6 LAND, BUILDINGS, PLANT AND EQUIPMENT - NET

Fixed assets are shown at cost on the date of acquisition or completion of construction after deduction of accumulated depreciation.

Depreciation of fixed assets is provided on a straight-line basis by reference to historical cost over their estimated useful lives. No allowance is made for residual value or decommissioning costs.

The principal rates of depreciation used are:

Dams	1.25%	to	1.33%
Power plants	4%	to	7.5%
Structures	4%	to	10%
Transmission system	2.5%	to	4%
Mining equipment	4%	to	20%
Other plants and equipment	5%	to	25%

Depreciation of the Srinagarind, Bang Lang, Vajiralongkorn, Rajjaprabha and Pak Mun dams is included in the statement of income only to the extent that it relates to power generation. The remaining portion relating to irrigation is deducted from capital contribution for supporting construction of these dams.

Donated assets are accounted for as fixed assets and the credit included under surplus from contributions.

Depreciation of donated assets are recognized as an operating expense in the statement of income if the assets generate income or are debited against surplus from contributions if they are non revenue generating.

2.7 ASSETS AND LIABILITIES UNDER FINANCING LEASE AGREEMENT

Assets and liabilities under financing lease agreements are stated at a fair price on the date that the agreement is signed or the present value of the minimum amount to be paid under the agreement, whichever is lower. A portion of lease payments is recognized as a financial expense and the remaining part deducted from the principle over the lease term. Finance lease assets are depreciated by the straight-line method over the estimated useful lives of each asset provided that, if the ownership of the assets is not transferred by the end of the lease term, depreciation is based on the lower of the useful life of the asset and the lease term.

2.8 DEFERRED CHARGES

2.8.1 Land Rights

Land rights, which confer the right, to use areas of land but which do not give title to EGAT, are presented as deferred charges and amortized over the expected useful lives of the related assets.

2.8.2 Deferred Charges of the Lignite Mine

2.8.2.1 Overburden Removal Costs

Overburden removal costs include depreciation of related equipment and a proportion, based on the ratio that the volume of overburden removed bears to lignite production, of the administrative expenses at the mine site.

The costs of overburden removal expended in each year are calculated as the product of the weighted average cost per cubic metre of overburden removed, the quantity of lignite extracted from the mine and the stripping ratio of 6.8:1 which is the ratio that the total volume of calculated overburden for the whole deposit bears to the total economically mineable reserves.

2.8.2.2 Exploration and Preliminary Development Costs

The exploration and preliminary development costs are written off in the year in which they are incurred except where they relate to a project included in the Power Development Plan and Long-Term Mining Plan. In such cases, these costs are deferred charges and amortized over the life of the mine in the proportion that the quantity of lignite extracted during the year bears to the total usable lignite reserve.

2.8.2.3 Resettlement Costs

Resettlement costs expended in each year are calculated by dividing the total actual resettlement costs by the total lignite mineable reserves over the useful lives of the power plants multiplied by the quantity of lignite extracted during the year.

2.8.2.4 Maintenance Expenses

Expenditures on reconditioning of 85 tonne dump trucks are deferred charges and amortized in the proportion that hours of usage bear to the total hours of usage in one life cycle of reconditioning.

2.9 ROYALTY ON REAL PROPERTY SERVICES - NET

With the approval of the Ministry of Finance, EGAT has been entitled to use the Sirikit dam and surrounding area without charge and in 1990 set up a Royalty on Real Property Services account recognizing partial cost of the dam at Baht 474.77 million. The amount which has been debited to the account equates to the benefits derived from power generation and the accumulated depreciation of Baht 100.86 million written off up to 1989 has been deducted from this amount. The balance of Baht 373.91 million is being amortized over 59 years which was the remaining balance of the estimated useful life of the dam.

2.10 SINKING FUND FOR REDEMPTION OF LONG TERM DEBTS

EGAT has set up a sinking fund for the redemption of certain loans which are repayable in large sums. Payments into the fund are made on a planned basis, taking into account EGAT's financial and economic circumstances. Funds are held in fixed deposit accounts separate from operative accounts. By a resolution of the Board of Directors, if EGAT faces liquidity problems it needs not make payments into the fund and may borrow from the fund if necessary.

2.11 FOREIGN CURRENCIES

Transactions dominated in foreign currencies are translated into Thai Baht at the Bank of Thailand's reference exchange rates prevailing on the transaction dates. Assets and liabilities in foreign currencies are translated into Baht at the exchange rates at the end of accounting period. Gains or losses from foreign exchange are recognized as either revenue or expense in the year in which they are incurred.

2.12 PROVIDENT FUND

The Provident Fund was established to help employees when they leave employment of EGAT. EGAT makes monthly payments to the fund at the rate of 10% of salary of employees who are members. This amount is recognized as an expense in the statement of income and the accounting transactions of the fund have been consolidated in the financial statement. The fund's revenues and expenses are recognized as revenues and expenses of EGAT.

2.13 PROVISION LIABILITIES FOR MINE RECLAMATION

Provision Liabilities for Mine Reclamation was established to ensure that there is a fund available for reclamation work at lignite mine in Mae Moh district, Lampang province. According to the Mining Act, EGAT is obliged to carry out reclamation work when the mine is closed and because of the certainty of its occurrence, amounts set aside for this work are recognized as provisions. Such provisions are recognized as expense in EGAT's statement of income and are calculated by taking that proportion of the total estimated cost of reclamation work, adjusted by the annual CPI (Consumer Price Index) rate of inflation, that the quantity of lignite extracted during the year bears to the total economically mineable reserves.

2.14 DEFERRED CONTRIBUTIONS

2.14.1 Contributions for Construction Projects

Cash contributions received from EGAT's direct customers towards the cost of certain construction projects, which will belong to EGAT after completion of the projects, are accounted for as Deferred Contributions and released to revenue over the useful lives of the related assets.

Cash contributions received from independent power producers towards the cost of certain construction projects, which will belong to EGAT after completion of the projects, are accounted for as Deferred Contributions and released to revenue over the period of the power purchase contracts.

The value of contributed assets constructed by independent power producers which have been transferred to EGAT are accounted for as EGAT's assets and contra with Deferred Contributions which are released to revenue over the period of the power purchase contracts.

2.14.2 Foreign Grants

Grants received for expenditures are recognized as revenues when the expenditures are incurred.

Grants received for acquisition of fixed assets or inventories are accounted as deferred grants and are recognized as revenues over the useful lives of the assets or as the inventory is used.

2.15 WELFARE FUND

The Welfare Fund is established for the employee's welfare with EGAT making payments to the fund. Such payments are recognized as expenses in the statement of income and the accounting transactions of the fund have been consolidated in the financial statements. The fund's revenues and expenses are recognized as revenues and expenses of EGAT.

2.16 SPECIFIC PURPOSE FUNDS

EGAT has established a number of specific purpose funds, namely the Property Self Insurance Sinking Funds, EGAT Fund for Developing Affected People's Quality of Life after Project Construction, Human Resource Management Fund and Fund for Conferences on the Electric Power Supply Industry. The assets, liabilities and balances of these funds have been included in the balance sheets, and the revenues and expenses of the funds have been consolidated in the statement of income.

2.16.1 Property Self Insurance Sinking Funds

EGAT has set up Property Self Insurance Sinking Funds to cover insurance for material damage to power plant, heavy equipment, aeroplane, vehicle, building, and for employees who encounter with hazards or illnesses by performing their duties. The premiums are calculated so as to approximate to premiums that would be payable to an insurance company.

2.16.2 EGAT Fund for Developing Affected People's Quality of Life after Project Construction

EGAT Fund for Developing Affected People's Quality of Life after Project Construction was established in 1995, for helping affected people after completion of dams, mines, power plants and transmission lines constructed by EGAT. The interest earned from the Fund is utilized for this purpose. The initial amount transferred to the Fund in 1996 of Baht 40 million was recognized as expense in EGAT's statement of income.

2.16.3 Human Resource Management Fund

The Human Resource Management Fund was set up in 1998 by making a provision of 10% (Baht 874 million) of the profit realized on the sale of shares in Electricity Generating Public Company Limited. The Fund is utilized for compensation payable to employees who are affected by the Government's privatization policy and who join the Mutual Separation Scheme.

2.16.4 Fund for Conferences on the Electric Power Supply Industry

In November 1998, the 12th Conference on the Electric Power Supply Industry (CEPSI) was organized by EGAT on behalf of the host nation Thailand. CEPSI is a biennial conference and is hosted on a rotational basis by the countries in the Association of the Electricity Supply Industry of East Asia and Western Pacific (AESIEAP).

The Board of Directors of EGAT resolved that the surplus revenue of Baht 31.82 million realized from the conference should be deposited in a separate bank account to finance any costs incurred by EGAT in organizing or attending future power conferences.

2.17 BORROWING COSTS

Interest, commitment charges, and other expenses on long term debts incurred during works under construction period are capitalized while those incurred after the completion of construction period are expensed.

Interest, commitment charges, and other expenses on debts incurred for working capital are expensed.

2.18 CASH AND CASH EQUIVALENTS

Cash and cash equivalents as presented in the cash flow statement comprise cash in current accounts, saving accounts and short term fixed deposits (not more than 3 months) to which EGAT has full access without any restriction.

3. CHANGE IN ACCOUNTING POLICY AND ACCOUNTING ESTIMATES AND FUNDAMENTAL ERROR

3.1 CHANGE IN ACCOUNTING POLICY

For the year 2002, EGAT reclassified its Mine Reclamation sinking Fund from a specific purpose sinking fund in Equity to a provision for mine reclamation, so as to be in conformity with generally accepted accounting principles, as the liability was certain to occur because according to the Mining Act, EGAT has to carry out reclamation work when the mine is closed. In accordance with generally accepted accounting principles, EGAT has retroactively adjusted this change in the comparative financial statements for the year 2001. This has resulted in an increase in net profit at September 30, 2001 of Baht 40.51 million by the inclusion of the fund's bank interest in revenue in EGAT's Statement of Income. The September 30, 2002 brought forward-retained earnings balance has been increased by the same amount.

3.2 CHANGE IN ACCOUNTING ESTIMATES

For the year 2002, EGAT has changed accounting estimation as the following:

3.2.1 Exploration and Preliminary Development Costs

EGAT has changed the calculation for the annual charge of exploration and preliminary development cost, for units 1 - 13 of Mae Moh power plant, from taking that proportion of the quantity of lignite extracted to the total remaining amount of lignite to the proportion of the quantity of lignite extracted to the total usable lignite reserve. The change in accounting estimate has resulted in an increase in net profit of Baht 11.74 million for the accounting period ended September 30, 2002.

3.2.2 A Provision for Mine Reclamation

Formerly, a provision was calculated by taking the proportion of the total estimated cost of reclamation work to the total economically mineable reserve. For the year 2002, EGAT revised the amount of the total estimated cost of reclamation work and the total economically mineable reserves. Thus, provision for mine reclamation work in a unit per tonne for Mae Moh mine decreased from Baht 7.52 to Baht 6.07 and increased for Krabi mine from Baht 4.25 to Baht 8.63. The provision for the current year for Mae Moh mine and a balance of provision for Krabi mine were reduced by Baht 21.31 million and Baht 28.24 million respectively, which resulted in an increase in net income of Baht 49.55 million for the accounting period ended September 30, 2002.

3.3 FUNDAMENTAL ERROR

In prior years, EGAT did not deduct the gain on sale of power plants to subsidiary and associated companies from the share of profit from those companies, which being intercompany transactions, should have been eliminated to accord with revenue recognition under the equity method.

For comparative purposes, in 2002, EGAT has added back the gain on sale of power plants from the share of profit from subsidiary and associated companies under the equity method and retroactively adjusted the comparative financial statements for the year 2001. The adjustment has resulted in a decrease in investment in subsidiary and associated companies, net income and brought forward retained earnings as at September 30, 2002 of Baht 4,839.55 million, Baht 410.63 million and Baht 4,428.92 million respectively and as at September 30, 2001 of Baht 4,428.92 million, Baht 1,992.68 million and Baht 2,436.24 million respectively.

4. SUPPLEMENTARY INFORMATION

4.1 CASH AND BANK BALANCES

	(Unit : Million Baht)	
	2002	2001
Cash in hand	12.88	14.46
Cash at banks		
Current accounts	(63.97)	(83.08)
Saving accounts	12,574.86	11,662.56
Fixed deposits not more than 3 months		
without any restriction	<u>10,093.28</u>	<u>2,589.52</u>
Total	<u>22,617.05</u>	<u>14,183.46</u>

For the year 2002, cash and bank balances of Baht 22,617.05 million related to working capital of EGAT, provident fund and welfare fund and specific funds in the amounts of Baht 17,489.62 million, Baht 2.79 million, Baht 30.09 million, Baht 5,094.55 million respectively.

4.2 SHORT-TERM INVESTMENTS IN FIXED DEPOSITS

(Unit : Million Baht)

	2002	2001
Cash at banks		
Fixed deposits		
– more than 3 months to 6 months	8,277.46	7,117.92
– more than 6 months	<u>709.65</u>	<u>3,432.65</u>
Total	<u>8,987.11</u>	<u>10,550.57</u>

As at September 30, 2002 and 2001 the above fixed deposits of Baht 8,987.11 million and Baht 10,550.57 million included Baht 508.74 million and Baht 3,112.21 million of 6 month fixed deposits for the Property Self Insurance Sinking Funds with Krung Thai Bank Public Company Limited which are pledged at Bang Krui branch as collateral for overdraft facilities of Baht 508 million and Baht 3,000 million respectively.

4.3 TRADE ACCOUNTS RECEIVABLE - NET

(Unit : Million Baht)

	2002	2001
Energy sales receivable – state enterprises and government agencies		
Metropolitan Electricity Authority	7,206.28	8,225.97
Provincial Electricity Authority	13,280.89	11,648.86
Government agencies	<u>46.67</u>	<u>62.83</u>
	20,533.84	19,937.66
Energy sales receivable – private companies	447.24	591.01
Services and others receivable – government agencies	27.01	27.21
Services and others receivable – private companies	<u>304.54</u>	<u>241.42</u>
Total	21,312.63	20,797.30
Less : Allowance for doubtful accounts	<u>5.15</u>	<u>90.96</u>
	21,307.48	20,706.34
Automatic energy price adjustment (Ft) receivable	<u>9,583.31</u>	<u>8,645.28</u>
At September 30,	<u>30,890.79</u>	<u>29,351.62</u>

For the year 2002, trade accounts receivable - net of Baht 30,890.79 million can be analyzed as follows:

(Unit : Million Baht)

Outstanding Period	State enterprises and Government Agencies		Private Companies		Total		2002	2001
	Energy Sales	Services and Others	Energy Sales	Services and Others	Energy Sales	Services and Others		
Current portion	20,533.41	16.36	427.33	225.94	20,960.74	242.30	21,203.04	–
Not more than 6 months	0.07	3.18	19.85	72.58	19.92	75.76	95.68	20,689.42
Over 6 months - 1 year	0.36	–	–	1.05	0.36	1.05	1.41	12.12
Over 1 year - 2 years	–	3.38	0.06	0.13	0.06	3.51	3.57	4.02
Over 2 years	–	4.09	–	4.84	–	8.93	8.93	91.74
	20,533.84	27.01	447.24	304.54	20,981.08	331.55	21,312.63	20,797.30
Less : Allowance for doubtful accounts	–	–	0.05	5.10	0.05	5.10	5.15	90.96
	<u>20,533.84</u>	<u>27.01</u>	<u>447.19</u>	<u>299.44</u>	20,981.03	326.45	21,307.48	20,706.34
Automatic energy price adjustment (Ft) receivable					9,583.31	–	9,583.31	8,645.28
At September 30,					<u>30,564.34</u>	<u>326.45</u>	<u>30,890.79</u>	<u>29,351.62</u>

4.4 OTHER ACCOUNTS RECEIVABLE - NET

(Unit : Million Baht)

	2002	2001
Employee accounts receivable	643.74	633.16
Other accounts receivable	848.12	577.59
Less : Allowance for doubtful accounts	<u>103.19</u>	<u>102.64</u>
At September 30,	<u>1,388.67</u>	<u>1,108.11</u>

4.5 MATERIALS AND SUPPLIES - NET

(Unit : Million Baht)

	2002	2001
Fuel oil	1,772.74	1,804.12
Lignite stock	315.34	307.50
Spare parts, other materials and supplies	6,294.92	8,404.47
Less : Allowance for obsolescence	<u>2,764.46</u>	<u>3,530.46</u>
At September 30,	<u>5,618.54</u>	<u>7,945.91</u>

4.6 INVESTMENT IN SUBSIDIARY AND ASSOCIATED COMPANIES

(Unit : Million Baht)

Company	Business	Relationship		Paid - Up		Investment		Investment				Dividend	
		2002	2001	Share Capital	2002	2001	Portion	2002	2001	Cost Method	Equity Method	2002	2001
Ratchaburi Electricity Generating Holding Public Company	Investment in other companies	Subsidiary	Associate	14,500.00	14,500.00	45.00%	45.00%	6,525.00	6,525.00	6,763.97	6,397.06	652.50	-
Electricity Generating Public Company	Investment in other companies	Associate	Associate	5,264.65	5,259.47	25.47%	25.43%	<u>1,587.55</u>	<u>1,587.55</u>	<u>2,899.66</u>	<u>2,113.47</u>	<u>334.43</u>	<u>401.32</u>
								<u>8,112.55</u>	<u>8,112.55</u>	<u>9,663.63</u>	<u>8,510.53</u>		

4.6.1 Investment in Ratchaburi Electricity Generating Holding Public Company Limited

On November 30, 1999, the Cabinet approved a resolution on EGAT's private participation plan for the Ratchaburi Power Project. According to the plan, EGAT would set up the Ratchaburi Electricity Generating Holding Company Limited (RHCO) with EGAT holding 100% equity. RHCO would then set up a wholly owned subsidiary, the Ratchaburi Electricity Generating Company Limited (RGCO) to acquire the power plant and related assets of the Ratchaburi Power Project including thermal power plant, combined cycle power plant, common facilities and land. EGAT would be required to mobilize funds from the public by listing RHCO's share in the Stock Exchange of Thailand (SET) by September 2000. Its shareholding in RHCO would thereafter be reduced to between 44.99% and 49.99%.

On March 7, 2000, RHCO was registered as a limited company with powers to invest in other companies of similar objectives and activities. RHCO had an initial registered capital of Baht 300 million fully paid up at par value of Baht 10 per share. On March 20, 2000, RGCO was registered as a limited company with objectives to operate as electric power generator and undertake other related business. RHCO holds 100% of the fully paid common shares in RGCO.

On August 18, 2000, RHCO was registered as a public company and increased its registered capital of Baht 300 million by Baht 14,200 million to make a total capital of Baht 14,500 million. On August 23, 2000, RHCO issued 840 million common shares of Baht 10 each fully paid which provided further capital of Baht 8,400 million.

As at September 30, 2000, RHCO had an authorized capital of Baht 14,500 million. The issued and fully paid share capital was 870 million common shares. EGAT has effective control over RHCO and EGAT accounts for the investment in RHCO is an investment in subsidiary company.

In October 2000, EGAT had 870 million common shares of Baht 10 each amounting to Baht 8,700 million in RHCO and then EGAT sold 217.50 million common shares of Baht 10 each amounting to Baht 2,175 million to EGAT employees and their Registered Provident Fund. EGAT has retained 652.50 million common shares of Baht 6,525 million.

Between October 18 and 20, 2000, RHCO issued 580 million common shares at par value of Baht 10 per share by way of an Initial Public Offering (IPO) at Baht 13 per share. On October 26, 2000, all 1,450 million common shares were registered on the Stock Exchange of Thailand.

As at September 30, 2002, RHCO has registered common shares amounting to Baht 14,500 million comprising 1,450 million fully paid common shares. EGAT owns 652.50 million common shares (par value Baht 10 per share or Baht 6,525 million) which is 45% of the total fully paid common shares. EGAT has effective control over RHCO and EGAT accounts for the investment in RHCO is an investment in subsidiary company.

4.6.2 Investment in Electricity Generating Public Company Limited

As at September 30, 2002, Electricity Generating Public Company Limited (EGCO) had 525.47 million fully paid common shares in issue of Baht 10 each amounting to Baht 5,300 million. EGAT's investment at that date was 133.77 million common shares (cost was Baht 1,587.55 million) or 25.47% of the fully paid issued common shares. EGAT has significant influence but has not effective control over EGCO and EGAT accounts for the investment in EGCO is an investment in associated company.

4.7 LAND, BUILDINGS, PLANT AND EQUIPMENT - NET

(Unit : Million Baht)

	2002			2001
	Cost	Accumulated Depreciation	Net Book	Net Book
Land	6,968.27	–	6,968.27	6,963.61
Structure	15,232.99	8,858.01	6,374.98	6,196.58
Reservoir, dam and waterway	21,802.84	5,471.06	16,331.78	16,608.56
Power plant	191,491.12	83,221.26	108,269.86	117,018.63
Transmission system	103,539.42	27,848.53	75,690.89	65,700.02
Communication system	5,427.22	3,447.86	1,979.36	2,088.71
Coal handling system	4,587.49	2,868.33	1,719.16	1,877.86
Mine equipment	2,237.97	2,016.23	221.74	259.41
Aeroplane and helicopter	49.99	49.99	–	1.46
Transportation equipment				
– Transportation equipment	2,264.44	2,130.71	133.73	136.52
– Transportation equipment of financial lease	7.80	7.01	0.79	–
Other equipment				
– Other equipment	9,108.35	7,155.60	1,952.75	1,982.54
– Other equipment of financial lease	11.60	3.09	8.51	–
Total	<u>362,729.50</u>	<u>143,077.68</u>	<u>219,651.82</u>	<u>218,833.90</u>

Depreciation for the year 2002 amounting to Baht 13,961.12 million has been allocated as follows:

(Unit : Million Baht)

	2002	2001
Depreciation as shown in statement of income	13,076.98	12,348.26
Included in other lines on statement of income	448.92	488.90
Included in fuel cost in respect of items relating to lignite production	244.91	278.20
Capitalized in respect of items relating to projects under construction	57.04	81.57
Capitalized and charged against lignite mine development costs	66.94	96.94
Debited against capital contribution for benefits of multi-purpose dams	62.33	62.33
Debited against provision liabilities for mine reclamation	4.00	4.70
Total	<u>13,961.12</u>	<u>13,360.90</u>

4.8 WORKS UNDER CONSTRUCTION

Project	(Unit : Million Baht)	
	2002	2001
Lam Takhong Pumped Storage Project units 1 - 2	11,905.40	11,135.09
Ratchaburi Combined Cycle Power Plant Project block 3	7,112.70	22,066.49
Krabi Thermal Power Plant Project unit 1	9,746.24	7,971.93
Transmission System	11,066.56	21,106.82
Others	<u>3,773.61</u>	<u>2,498.53</u>
Total	<u>43,604.51</u>	<u>64,778.86</u>

For the year 2002, the works under construction relating to Ratchaburi Combined Cycle Power Plant Project blocks 1 - 3 had brought forward balances of Baht 22,066.49 million and during the year the works under construction increased net by Baht 1,502.51 million, bringing the total Baht 23,569 million. All of the completed Ratchaburi Combined Cycle Power Plant Project blocks 1 and 2 were transferred to Ratchaburi Electricity Generating Company Limited in accordance with the asset purchase agreement dated October 9, 2000 in the amount of Baht 16,456.30 million.

4.9 DEFERRED CHARGES

	Land Rights	Deferred Charges of the Lignite Mine	(Unit : Million Baht)	
			2002	Total 2001
At October 1,	14,919.62	6,556.00	21,475.62	22,054.42
Add: Increase during the year	<u>491.08</u>	<u>2,657.52</u>	<u>3,148.60</u>	<u>3,617.27</u>
	15,410.70	9,213.52	24,624.22	25,671.69
Less: Amortized/Charged to production	<u>623.89</u>	<u>4,211.22</u>	<u>4,835.11</u>	<u>4,196.07</u>
At September 30,	<u>14,786.81</u>	<u>5,002.30</u>	<u>19,789.11</u>	<u>21,475.62</u>

The deferred charges of the lignite mine of Baht 5,002.30 million are as follows:

	Overburden Removal Costs	Exploration and Preliminary Development			Maintenance Costs	(Unit : Million Baht)	
		Costs	Resettlement Costs	Costs		2002	Total 2001
At October 1,	5,125.65	469.18	951.08	10.09	6,556.00	7,720.73	
Add : Increase during the year	<u>2,657.52</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>2,657.52</u>	<u>2,730.88</u>	
	7,783.17	469.18	951.08	10.09	9,213.52	10,451.61	
Less : Charged to production	<u>4,146.55</u>	<u>12.50</u>	<u>48.94</u>	<u>3.23</u>	<u>4,211.22</u>	<u>3,895.61</u>	
At September 30,	<u>3,636.62</u>	<u>456.68</u>	<u>902.14</u>	<u>6.86</u>	<u>5,002.30</u>	<u>6,556.00</u>	

4.10 ROYALTY ON REAL PROPERTY SERVICES - NET

	(Unit : Million Baht)	
	2002	2001
Royalty on real property services in 1990	474.77	474.77
Less : Accumulated depreciation 1974 – 1989	<u>100.86</u>	<u>100.86</u>
Net book value of royalty on real property services	373.91	373.91
Less : Accumulated amortization since 1990	76.06	69.72
Amortization for the year	<u>6.34</u>	<u>6.34</u>
At September 30,	<u>291.51</u>	<u>297.85</u>

4.11 SINKING FUND FOR REDEMPTION OF LONG TERM DEBTS

	(Unit : Million Baht)	
	2002	2001
At October 1,	25,774.63	16,566.99
Add : Payments into the fund	6,883.17	10,867.95
Interest received	421.78	639.71
Gains from foreign exchange rate	–	227.22
	<u>33,079.58</u>	<u>28,301.87</u>
Less : Withdrawals to meet debt repayment	15,809.74	2,527.24
Losses from foreign exchange rate	305.60	–
	<u>16,964.24</u>	<u>25,774.63</u>

4.12 LOAN TO THE COOPERATIVES PROMOTION DEPARTMENT

The loan to the Cooperatives Promotion Department arose because EGAT financed the Cooperatives Promotion Department to operate a number of specific cooperatives. Cooperative groups at 3 of EGAT's project sites received interest-free loans from the Cooperatives Promotion Department to support their members affected by the project construction.

	(Unit : Million Baht)	
	2002	2001
Cooperative group at Vajiralongkorn Project	7.76	7.76
Cooperative group at Mae Moh Mine Expansion Project for Mae Moh Power Plant units 8 and 9	0.70	15.00
Cooperative group at Lam Takhong Pumped Storage Project	<u>12.00</u>	<u>12.00</u>
Total	<u>20.46</u>	<u>34.76</u>

Cooperative groups at Vajiralongkorn and Mae Moh Mine Expansion Projects were financed with interest-free loans of Baht 13 million and Baht 15 million respectively with a payback period of 10 years from the date on which the Cooperative groups received the first amount from the Cooperatives Promotion Department. The cooperative groups at Vajiralongkorn Project and Mae Moh Mine Expansion Project have repaid Baht 5.24 million and Baht 14.30 million respectively.

In accordance with the agreement dated June 26, 1996, the Cooperative group at Lam Takhong Pumped Storage Project, would be financed with a total interest-free loan of Baht 23 million with a payback period of 15 years from the date on which the Cooperatives Promotion Department received funds from EGAT. Since 1996, EGAT has financed Baht 12 million to Cooperatives Promotion Department.

4.13 ELECTRICITY PURCHASED PAYABLE

	(Unit : Million Baht)	
	2002	2001
Neighbouring Countries' Supply		
Tenaga Nasional Berhad	13.75	10.05
Electricite du Laos	277.08	277.71
Houay Ho Power Company Limited	152.65	160.17
Theun Hinboun Power Company Limited	484.82	527.39
Independent Power Producers (IPP)		
Ratchaburi Electricity Generating Company Limited	5,126.31	3,694.33
Rayong Electricity Generating Company Limited	828.56	869.87
Khanom Electricity Generating Company Limited	762.32	683.96
Independent Power (Thailand) Company Limited	1,009.92	1,041.47
Tri Energy Company Limited	1,708.10	1,390.40
Bowin Power Company Limited	183.64	–
Small Power Producers (SPP)	<u>5,003.80</u>	<u>5,749.69</u>
Total	<u>15,550.95</u>	<u>14,405.04</u>

4.14 ACCRUED REMITTANCE TO THE MINISTRY OF FINANCE

The provision for appropriation to the Ministry of Finance for the year 2002 was Baht 9,555 million.

(Unit : Million Baht)

	Balance at Oct. 1, 2001	Current Year		Balance at Sept. 30, 2002
		Appropriation	Remitted	
Unpaid remittance for				
Net income for the year 2000	3,000.00	–	(3,000.00)	–
Net income for the year 2001	4,514.00	(44.00)	(4,470.00)	–
Net income for the year 2002 (Provision)	–	9,555.00	–	9,555.00
Total	<u>7,514.00</u>	<u>9,511.00</u>	<u>(7,470.00)</u>	<u>9,555.00</u>

4.15 OTHER CURRENT LIABILITIES

For the year 2002, there are included in other current liabilities of Baht 7,398.32 million the estimated costs to complete Ratchaburi Power Plant Project of Baht 849.57 million and deferred income of Baht 1,100.76 million relating to items which EGAT has not yet transferred to Ratchaburi Electricity Generating Company Limited comprising a fuel oil transportation system of Baht 400 million, which EGAT has still to construct, spare parts for the Ratchaburi Power Plant Project of Baht 516.85 million and fuel of Baht 183.91 million.

4.16 LONG-TERM LIABILITIES

(Unit : Million Baht)

	Long-Term Liabilities	Current Portion of Long-Term Liabilities	Balance	
			2002	2001
Long Term Debts	177,010.74	22,597.81	154,412.93	178,200.14
Suppliers' Credit	5,275.90	203.09	5,072.81	5,521.75
Finance Lease Liabilities	6.77	3.17	3.60	–
Total	<u>182,293.41</u>	<u>22,804.07</u>	<u>159,489.34</u>	<u>183,721.89</u>

The details of long term debts are:

(Unit : Million Baht)

	2002	2001
Local sources		
EGAT Bonds	79,452.91	84,652.91
Government Saving Bank	3,022.33	6,351.41
Ministry of Finance	129.71	133.21
Total – Local sources	<u>82,604.95</u>	<u>91,137.53</u>
Foreign sources		
Ministry of Finance	48.39	3,692.37
Bank and Commercial Institutions	16,750.97	29,600.56
Export – Import Banks	48,416.24	53,415.17
Commercial Banks	15,925.92	14,281.55
Floating Rate Bonds	219.37	224.66
EGAT's Bonds	13,044.90	13,359.21
Total – Foreign sources	<u>94,405.79</u>	<u>114,573.52</u>
Total	<u>177,010.74</u>	<u>205,711.05</u>
Less : Current portion of long term debts	<u>22,597.81</u>	<u>27,510.91</u>
Balance at September 30,	<u>154,412.93</u>	<u>178,200.14</u>

The local and foreign interest rate for the years 2002 and 2001 are in the range between 0.63% and 14.45%.

Included in the loans from the Ministry of Finance at September 30, 2002 is Baht 129.71 million of loans originating from KFW. By a resolution of the Cabinet, the repayment terms of these loans were deferred for eight years from 1975. Instalments of principal have been repaid since 1983. The payment of interest in respect of those eight years has also been deferred and is being paid by equal instalments over the remaining terms of the loans commencing in the year 1985. The amount of interest deferred at September 30, 2002 was Baht 8.04 million.

The details of outstanding foreign debts of the bank and commercial institutions and the export-import banks are as follows:

	(Unit : Million Baht)	
	2002	2001
Bank and Commercial Institutions		
International Bank for Reconstruction and Development (IBRD)	5,189.08	12,535.38
Japan Bank for International Cooperation (JBIC – OECF)	10,546.34	12,057.79
Asian Development Bank (ADB)	–	3,710.25
Kuwait Fund for Arab Economic Development (KFAED)	98.33	288.24
Nordic Investment Bank (NORDIC)	917.22	1,008.90
Total	<u>16,750.97</u>	<u>29,600.56</u>
Export–Import Banks		
Kreditanstalt Fur Wiederaufbau (KFW)	3,561.12	3,634.72
Japan Bank for International Cooperation (JBIC – EXIM Bank of Japan)	34,468.13	38,053.47
Export Development Corporation (EDC)	569.30	784.40
Swiss Mixed Credit II	134.45	189.63
Natexis Banques Populaires	9,683.24	10,752.95
Total	<u>48,416.24</u>	<u>53,415.17</u>

4.17 PROVIDENT FUND

	(Unit : Million Baht)	
	2002	2001
Assets		
Cash at banks	23.79	22.67
Accrued interest receivable	0.13	0.01
Account receivable – EGAT	0.07	0.27
Total	<u>23.99</u>	<u>22.95</u>
Liabilities and fund		
Provident fund	23.52	22.94
Revenues over expenses	0.47	0.01
Total	<u>23.99</u>	<u>22.95</u>
Retirement liabilities (if all members left)	23.99	22.95

4.18 PROVISION LIABILITIES FOR MINE RECLAMATION

	(Unit : Million Baht)			
	Mae Moh	Krabi	2002	2001
At October 1,	1,432.76	29.35	1,462.11	1,412.72
Add : Provision during the year	<u>92.54</u>	<u>1.56</u>	<u>94.10</u>	<u>111.70</u>
	1,525.30	30.91	1,556.21	1,524.42
Less : Mine reclamation expenses	79.28	–	79.28	57.61
Depreciation	<u>4.00</u>	<u>–</u>	<u>4.00</u>	<u>4.70</u>
	1,442.02	30.91	1,472.93	1,462.11
Less : Adjustment for Provision Liabilities				
Krabi Mine	<u>–</u>	<u>28.24</u>	<u>28.24</u>	<u>–</u>
At September 30,	<u>1,442.02</u>	<u>2.67</u>	<u>1,444.69</u>	<u>1,462.11</u>

4.19 DEFERRED CONTRIBUTIONS

	(Unit : Million Baht)			
	Consumers Contribution	Foreign Contribution	Total 2002	Total 2001
At October 1,	2,056.85	0.72	2,057.57	2,059.91
Add : Received during the year	<u>122.39</u>	<u>–</u>	<u>122.39</u>	<u>51.49</u>
	2,179.24	0.72	2,179.96	2,111.40
Less : Recognized to other revenue	<u>52.08</u>	<u>0.72</u>	<u>52.80</u>	<u>53.83</u>
At September 30,	<u>2,127.16</u>	<u>–</u>	<u>2,127.16</u>	<u>2,057.57</u>

4.20 CONTRIBUTION FROM THE GOVERNMENT

	2002		(Unit : Million Baht)	
			2002	2001
Capital		<u>7,201.17</u>		<u>7,201.17</u>
Contribution for supporting construction of the Srinagarind, Bang Lang, Vajiralongkorn, Rajjaprabha and Pak Mun Dam		4,364.75		4,364.75
Less : Accumulated depreciation	1,106.84		1,044.51	
Depreciation for the year	<u>62.33</u>	<u>1,169.17</u>	<u>62.33</u>	<u>1,106.84</u>
		<u>3,195.58</u>		<u>3,257.91</u>
At September 30,		<u>10,396.75</u>		<u>10,459.08</u>

4.21 SURPLUS FROM CONTRIBUTIONS

Surplus from contributions is assets or cash received from foreign governments and financial institutions in the form of discount, special interest rate loans and grants to finance development activities of EGAT specifically identified by donors.

	(Unit : Million Baht)				
	Donated Assets	Discount Interest	Grants	Total 2002	Total 2001
At October 1,	407.17	1,810.34	690.47	2,907.98	2,827.35
Add : Received during the year	<u>27.07</u>	<u>70.25</u>	<u>–</u>	<u>97.32</u>	<u>80.63</u>
	434.24	1,880.59	690.47	3,005.30	2,907.98
Less : Depreciation	<u>1.11</u>	<u>–</u>	<u>–</u>	<u>1.11</u>	<u>–</u>
At September 30,	<u>433.13</u>	<u>1,880.59</u>	<u>690.47</u>	<u>3,004.19</u>	<u>2,907.98</u>

4.22 WELFARE FUND

	(Unit : Million Baht)	
	2002	2001
Assets		
Cash at banks	30.09	44.57
Account receivable – employees	197.34	175.00
Accrued interest receivable	–	0.02
Building and equipment – net	54.29	58.44
Works under construction	<u>0.35</u>	<u>–</u>
Total	<u>282.07</u>	<u>278.03</u>
Liabilities and Fund		
Accrued expenses	0.02	0.06
Account payable	6.01	4.41
Welfare Fund	256.19	256.19
Revenues over expenses for the prior years	17.37	13.68
Revenues over expenses	<u>2.48</u>	<u>3.69</u>
Total	<u>282.07</u>	<u>278.03</u>

4.23 SPECIFIC PURPOSE FUNDS

	(Unit : Million Baht)					
	Property Self Insurance Sinking Funds	EGAT Fund for Developing Affected People's Quality of Life after Project Construction	Human Resource Management Fund	Fund for Conferences on the Electric Power Supply Industry	Total	
					2002	2001
Assets						
Cash in hand	0.27	–	–	–	0.27	0.29
Cash at banks	11,991.98	47.47	428.32	23.43	12,491.20	11,086.67
Accrued insurance premium	212.76	–	–	–	212.76	1,337.54
Accrued interest receivable	47.13	0.05	5.58	0.09	52.85	26.08
Other accounts receivable	<u>–</u>	<u>1.77</u>	<u>–</u>	<u>–</u>	<u>1.77</u>	<u>5.94</u>
Total	<u>12,252.14</u>	<u>49.29</u>	<u>433.90</u>	<u>23.52</u>	<u>12,758.85</u>	<u>12,456.52</u>
Liabilities and Funds						
Accrued claim	163.18	–	–	–	163.18	451.49
Provision for claim	675.59	–	–	–	675.59	433.57
Specific purpose funds	9,302.18	52.12	626.23	32.03	10,012.56	10,012.56
Revenues over (under)						
expenses year 2000 – 2001	1,772.67	(1.71)	(203.39)	(8.67)	1,558.90	636.15
Revenues over (under)						
expenses 2002	<u>338.52</u>	<u>(1.12)</u>	<u>11.06</u>	<u>0.16</u>	<u>348.62</u>	<u>922.75</u>
Total	<u>12,252.14</u>	<u>49.29</u>	<u>433.90</u>	<u>23.52</u>	<u>12,758.85</u>	<u>12,456.52</u>

4.24 ELECTRICITY PURCHASED AND FUEL

For the year 2002, the cost of purchased power of Baht 93,889.75 million and fuel expenses of Baht 53,032.17 million included interest arising out of Take or Pay contracts of Baht 34.71 million and Baht 106.21 million respectively in connection with the delays in completing the Ratchaburi Power Plants Project by EGAT and the delay in completing the natural gas pipeline from Ratchaburi to Wang Noi by Petroleum Authority of Thailand (PTT). In addition, the demand for natural gas was below the minimum quantity stipulated in the natural gas fuel supply agreement between PTT and the supplier of natural gas from Yadana natural gas field. Consequently, PTT had to prepay for the shortfall in gas supplied to the Ratchaburi Power Plants and incurred interest on the funds required to meet the prepayments. The Cabinet, by a resolution dated July 25, 2000, ordered EGAT, PTT, the Government and the economy to bear the interest costs in the proportion of 12.80%, 11.40%, 27.80% and 48% respectively. For the year 2002, PTT invoiced EGAT with the interest arising from the Take or Pay provision in the agreement amounting to Baht 140.92 million.

4.25 PROFIT ON SALE OF RATCHABURI POWER PLANTS PROJECT

On April 18, 2002, EGAT received Baht 18,715.97 million from Ratchaburi Electricity Generating Company Limited under the asset purchase agreement dated October 9, 2000 for the sale of the Ratchaburi Combined Cycle Power Plant units 1 and 2. EGAT subsequently refunded Baht 76.47 million, since Ratchaburi Electricity Generating Company Limited requested to self-supply Recommended Spare Parts. Ratchaburi Combined Cycle Power Plant units 1 and 2 facilities were transferred to Ratchaburi Electricity Generating Company Limited at Baht 17,942.44 million. The remaining deferred income of Baht 697.06 million relates to items which have not yet been transferred.

The details of Ratchaburi Power Plant project fixed assets which were transferred to Ratchaburi Electricity Generating Company Limited are as follows:

	(Unit : Million Baht)
Selling price of Ratchaburi Combined Cycle Power Plants Project blocks 1 and 2	17,942.44
Selling price of other equipment for Ratchaburi Thermal Power Plant units 1 and 2	<u>6.20</u>
	17,948.64
Less : Cost of fixed assets	<u>17,301.01</u>
Profit on sale of Ratchaburi Power Plants project	<u><u>647.63</u></u>

Cost of fixed assets sold amount of Baht 17,301.01 million comprises:

	(Unit : Million Baht)
Land, supplies and equipment	0.90
Spare parts	1,521.13
Works under construction of Ratchaburi Power Plant project (Reference Note 4.8)	16,456.30
Estimated costs for the completed works of Ratchaburi Combined Cycle Power Plant units 1 and 2	141.11
Decrease in estimated costs for the previous year	(231.86)
Compensation for late transfer from contractor	<u>(586.57)</u>
Total	<u><u>17,301.01</u></u>

4.26 GAINS (LOSSES) ON FOREIGN EXCHANGE

For the year 2002, an amount of Baht 4,267.45 million is recorded as gains on foreign exchange.

(Unit : Million Baht)

	Shown in Statement of Income		Total	
	Fuel Cost	Gains (Losses) on Foreign Exchange	2002	2001
Gains (Losses) arising on repayment of loans	12.21	790.74	802.95	516.33
Gains (Losses) on rate of exchange from refinancing	–	10.59	10.59	(152.63)
Gains (Losses) on translation at the end of years	29.49	3,747.17	3,776.66	1,112.29
Gains (Losses) on exchange – others	<u>0.82</u>	<u>(323.57)</u>	<u>(322.75)</u>	<u>628.70</u>
Total	<u><u>42.52</u></u>	<u><u>4,224.93</u></u>	<u><u>4,267.45</u></u>	<u><u>2,104.69</u></u>

4.27 SHARE OF PROFIT FROM SUBSIDIARY AND ASSOCIATED COMPANIES

For the year 2002, EGAT recognized the share of profit from its subsidiary and associated companies under the equity method at the amount of Baht 1,142.36 million from Ratchaburi Electricity Generating Holding Public Company Limited and Baht 997.68 million from Electricity Generating Public Company Limited, bringing totally Baht 2,140.04 million.

4.28 BORROWING COSTS

For the year 2002, the total borrowing costs of Baht 11,366.80 million has been allocated as follows:

	Interest Expenses	Commitment Charges	Other Expenses Relating to the Loans	(Unit : Million Baht)	
				2002	Total 2001
Capitalized to projects under construction	2,178.99	7.99	18.98	2,205.96	3,398.29
Included in fuel costs in the statement of income	361.06	–	22.24	383.30	299.56
Shown as borrowing costs in the statement of income	8,610.64	5.55	161.35	8,777.54	9,983.96
Total	<u>11,150.69</u>	<u>13.54</u>	<u>202.57</u>	<u>11,366.80</u>	<u>13,681.81</u>

4.29 OTHER EXPENSES

	(Unit : Million Baht)	
	2002	2001
Interest expenses (Loans for working capital)	521.62	548.21
Other expenses relating to the loans (Loans for working capital)	0.32	0.32
Interest for bank overdraft	<u>0.95</u>	<u>0.58</u>
Total	<u>522.89</u>	<u>549.11</u>

4.30 OPERATING RESULTS

The operating results for the years ended September 30, 2002 and 2001 are as follows:

	2002	2001 (Restated)	(Unit : Million Baht)	
			Increase/(Decrease) Amount	%
Operating revenues	207,101.05	185,071.74	22,029.31	11.90
Operating expenses	<u>178,901.50</u>	<u>168,383.30</u>	10,518.20	6.25
Operating incomes	28,199.55	16,688.44	11,511.11	68.98
Other revenues	8,629.85	8,274.55	355.30	4.29
Other expenses	<u>9,479.07</u>	<u>10,691.66</u>	(1,212.59)	(11.34)
Net income	<u>27,350.33</u>	<u>14,271.33</u>	13,079.00	91.65

The net income for the year 2002 increased by Baht 13,079 million. The operating incomes increased by Baht 11,511.11 million, due principally to an increase in electric energy sales of Baht 22,029.31 million but offset by an increase in electricity purchases of Baht 9,452.75 million. In 2001 electricity energy sales were depressed by Baht 12,915.42 million to compensate for the accrued automatic energy price adjustment (Ft) receivable under the former calculation of electricity energy rate for the period July to September 2000. Other revenues increased by Baht 355.30 million, due to the share of profit in subsidiary and associated companies decreasing in 2001 by Baht 1,992.68 million as a result of the restatement of the 2001 financial statements. Other expenses decreased by Baht 1,212.59 million.

4.31 RECLASSIFICATION IN FINANCIAL STATEMENTS

For the year 2002, EGAT amended the classification in its financial statements. Where necessary, comparative figures in the year 2001 have been adjusted to conform with those changes.

4.32 LONG-TERM POWER PURCHASE AGREEMENTS

As a result of decreasing the government's investment and encouraging private companies to be involved in generating electricity, the Government approved an investment programme for the generation of electricity by private companies as Independent Power Producers (IPP) who would sell power to EGAT.

EGAT has entered into 43 Power Purchase Agreements at September 30, 2002 with total commitments amounting to approximately Baht 3,374,712 million and total production capacity of 13,789 megawatts.

Power Producers	Company	Capacity (Megawatt)	Years	Contract Period	Amount (Million Baht)	Availability Payment (AP) (Million Baht)	Energy Payment (EP) (Million Baht)	
Power Project Developers in Lao People's Democratic Republic								
	Theun Hinboun Power Company Limited	1	214	20	(2003 – 2022)	54,458	–	54,458
	Houay Ho Power Company Limited	1	126	27	(2003 – 2029)	31,104	–	31,104
Independent Power Producers (IPP)								
	Rayong Electricity Generating Company (REGCO)	1	1,174	12	(2003 – 2014)	155,053	46,625	108,428
	Khanom Electricity Generating Company (KEGCO)	1	818	14	(2003 – 2016)	118,568	42,303	76,265
	Tri Energy Company Limited (TECO)	1	700	18	(2003 – 2020)	138,140	41,649	96,491
	Eastern Power Electric Company Limited (EPEC)	1	350	20	(2003 – 2022)	86,213	33,486	52,727
Independent Power (Thailand)								
	Company Limited (IPT)	1	700	23	(2003 – 2025)	181,301	50,924	130,377
	Ratchaburi Electricity Generating Company (RGCO)	1	3,546	25	(2003 – 2027)	888,563	241,067	647,496
	Bowin Power Company Limited (BOWIN)	1	713	25	(2003 – 2027)	204,661	63,095	141,566
	GULF Power Generation Company Limited (GULF)	1	734	26	(2004 – 2029)	210,598	115,670	94,928
Union Power Development								
	Company Limited (UPDC)	1	1,400	26	(2005 – 2030)	346,548	173,624	172,924
	BLCP Power Company Limited (BLCP)	1	1,347	26	(2007 – 2032)	379,587	211,152	168,435
Small Power Producers (SPP)								
		31	1,967	15 – 25 Years		579,918	224,645	355,273
Total		43	13,789			3,374,712	1,244,240	2,130,472

FINANCIAL REVIEW

I. Operating Performance

For the year 2002, operating income before other revenues and expenses, of Baht 28,199.55 million increased from the previous year by 68.98% or Baht 11,511.11 million (2001: Baht 16,688.44 million).

Net income of Baht 27,350.33 million increased from the previous year by 91.65% or Baht 13,079.00 million (2001: Baht 14,271.33 million) as follows:

Operating Revenues

In 2002, Electricity Generating Authority of Thailand (EGAT) had electric energy sales of Baht 207,101.05 million, which increased from the previous year by 11.90% or Baht 22,029.31 million (2001: Baht 185,071.74 million). The energy sales volume of 102,485.69 million kWh increased from the previous year by 5.21% or 5,073.24 million kWh (2001: 97,412.45 million kWh). Average energy sales price increased by 6.32% to Baht 2.02 per kWh (2001: Baht 1.90 per kWh). The 2001 electric energy sales and average sales prices were lower than those of 2002 due to the absorption of irrecoverable Ft adjustment costs during the period of July - September 2000 of Baht 12,915.42 million under the new base tariff structure.

Operating Expenses

Operating expenses of Baht 178,901.50 million increased from the previous year by 6.25% or Baht 10,518.20 million (2001: Baht 168,383.30 million), detailed as follows:

- Expenses for electricity purchase increased by 11.20% or Baht 9,452.75 million whereas the volume of the purchased electricity grew by 13.81% or 5,717.03 million kWh from the previous year. However, in terms of price, the average electricity purchase price decreased by 2.45% or Baht 0.05 to Baht 1.99 per kWh in 2002. (2001: Baht 2.04 per kWh).
- Fuel cost decreased by 2.20% or Baht 1,192.08 million as electric energy generated by EGAT declined by 0.80% or 493.00 million kWh.
- Other energy generating expenses decreased by 1.30% or Baht 129.16 million.
- Transmission expenses increased by 19.55% or Baht 570.36 million, partly due to the incremental amortization of land rights and depreciation expense resulting from the transfer of land rights and completed transmission work as assets.
- Administrative and general expenses increased by Baht 1,087.61 million due to an increase of reserve for bonus by Baht 933.72 million from the previous year.

Other Revenues

Other revenues of Baht 8,629.85 million increased from the previous year by 4.29% or Baht 355.30 million, detailed as follows:

- Profit on sale of Ratchaburi Power Plant Project decreased by 70.61% or Baht 1,556.15 million to Baht 647.63 million (2001: Baht 2,203.78 million).
- Share of profit from subsidiary and associated companies in 2002 increased by 353.69% or Baht 1,668.34 million.
- Bank interests decreased by 47.50% or Baht 750.86 million.
- Others revenue decreased by 73.26% or Baht 932.74 million since in 2001 EGAT received penalty fee of Baht 832.00 million from Independent Power (Thailand) Company Limited for the shortfall from plan in power supplied.
- Net gain on foreign exchange increased by 89.77% or Baht 1,998.56 million as the Baht had appreciated against the US dollar and Japanese Yen by 2.35% and 4.45% respectively from the previous year.

Other Expenses

Other expenses of Baht 9,479.07 million decreased from the previous year by 11.34% or Baht 1,212.59 million, detailed as follows:

- Borrowing costs decreased as long-term debts declined by 13.19% or Baht 24,233 million in connection with the prepayment of debt out of the proceeds from sales of Ratchaburi power plants in 2001 and 2002.
- Working capital decreased by 16.85% or Baht 1,232.64 million which was translated into interest saving of Baht 26 million.
- Loss on disposal of assets increased by 12.64% or Baht 20.05 million.

II. Financial Position for the Year Ended September 30, 2002

EGAT's assets of Baht 382,086.13 million decreased from the previous year by 5.63% or Baht 22,815.64 million (2001: Baht 404,901.77 million) due to the transfer of the Ratchaburi Combined Cycle Power Plant blocks 1 and 2 to Ratchaburi Electricity Generating Company Limited under the asset purchase agreement. Proceeds from the sale of power plants were used to prepay debt of Baht 9,499.27 million.

Trade accounts receivable increased by 5.24% or Baht 1,539.18 million to Baht 30,890.80 million, which also included the accrued automatic energy adjustment (Ft) of Baht 9,583.31 million that EGAT billed four months in arrears in accordance with the disbursement process.

EGAT's liabilities of Baht 236,004.43 million decreased from the previous year by 14.71% or Baht 40,688.84 million (2001: Baht 276,693.27 million), partly due to the decrease in long term liabilities of Baht 24,232.55 million (including the debt prepayment of Baht 9,499.27 million) and the decrease in short term loan and debt with maturity date of 1 year of Baht 12,824 million.

EGAT's equity of Baht 146,081.70 million increased from the previous year by 13.94% or Baht 17,873.20 million (2001: Baht 128,208.50 million).

Cash Flow

Cash flow activities of EGAT for the year 2002 and 2001 are as follows:

	2002 (Million Baht)	2001 (Million Baht)
Cash flow from operating activities	24,734.87	11,794.46
Cash flow from investing activities	7,674.77	15,164.55
Cash flow from financing activities	<u>(23,976.05)</u>	<u>(36,376.07)</u>
Net increase (decrease) in cash and cash equivalents	8,433.59	(9,417.06)
Cash and cash equivalents at beginning of year	<u>14,183.46</u>	<u>23,600.52</u>
Cash and cash equivalents at end of year	<u><u>22,617.05</u></u>	<u><u>14,183.46</u></u>

ELECTRICITY GENERATING AUTHORITY OF THAILAND
FIVE YEAR SUMMARY

At September 30:	2002 Baht (Millions)	2001 Baht (Millions)	2000 Baht (Millions)	1999 Baht (Millions)	1998 Baht (Millions)
Assets:					
Current assets	72,101	65,196	66,010	54,690	46,361
Fixed assets	263,256	283,613	318,661	308,388	285,274
Net assets of specific sinking funds	–	–	12,062	11,321	9,128
Intangible assets	20,081	21,773	–	–	–
Other assets (Note 1)	26,648	38,749	37,678	21,963	17,682
Total assets	<u>382,086</u>	<u>409,331</u>	<u>434,411</u>	<u>396,362</u>	<u>358,445</u>
Liabilities and equity					
Liabilities:					
Current liabilities (Note 2)	72,912	89,421	93,592	66,763	63,744
Long-term liabilities (Note 3)	159,489	183,722	216,410	210,560	164,217
Other liabilities	3,603	2,089	2,089	1,377	849
Total liabilities	<u>236,004</u>	<u>275,232</u>	<u>312,091</u>	<u>278,700</u>	<u>228,810</u>
Equity :					
Capital:					
Contribution from the government	10,397	10,459	10,522	10,584	10,646
Surplus from contributions	3,004	2,908	2,827	2,719	2,594
Royalty on Real Property Services - Net	475	475	475	475	475
Retained earnings:					
Capital expenditure appropriation	80,186	80,186	80,186	80,186	80,186
Unappropriated	41,751	28,300	15,992	12,377	43,811
Welfare Fund	256	256	256	–	–
Specific Purpose funds	10,013	11,515	12,062	11,321	10,603
Deferred losses from use of Managed Float systems	–	–	–	–	(18,680)
Total equity	<u>146,082</u>	<u>134,099</u>	<u>122,320</u>	<u>117,662</u>	<u>129,635</u>
Total liabilities and equity	<u>382,086</u>	<u>409,331</u>	<u>434,411</u>	<u>396,362</u>	<u>358,445</u>
For the Years Ended September 30:					
	kWh (Millions)	kWh (Millions)	kWh (Millions)	kWh (Millions)	kWh (Millions)
Electricity generated and purchased	108,389	103,165	96,781	90,414	92,134
Electricity sales	102,486	97,412	90,725	84,512	85,598

ELECTRICITY GENERATING AUTHORITY OF THAILAND
FIVE YEAR SUMMARY - CONTINUED

For the Years Ended September 30:		2002 Baht (Millions)	2001 Baht (Millions)	2000 Baht (Millions)	1999 Baht (Millions)	1998 Baht (Millions)
Electricity sales	(Note 4)	207,101	185,072	160,992	134,335	146,572
Operating expenses	(Note 5)	174,677	166,157	132,168	149,510	124,085
Net income (loss) before interest charges		36,128	26,207	31,289	(13,023)	31,422
Interest charges		8,778	9,984	11,114	11,238	11,112
Net income (loss)		27,350	16,223	20,175	(24,261)	20,310
Remittance to Ministry of Finance (paid)		7,470	16,620	7,975	5,837	2,000
Loan repayment		37,085	41,130	34,339	11,760	7,562
Capital expenditure	(Note 6)	13,885	19,273	22,203	35,728	47,628
Net income (loss) as a percentage of sales		13.21%	8.77%	12.53%	(18.06)%	13.86%
Net income (loss) before interest charges as a percentage of sales		17.44%	14.16%	19.44%	(9.69)%	21.44%
Net income (loss) as percentage of equity	(Note 7)	18.72%	12.10%	16.49%	(20.62)%	15.67%
Net income (loss) before interest charges as a percentage of equity	(Note 7)	24.73%	19.54%	25.58%	(11.07)%	24.24%
Net income (loss) as a percentage of total assets		7.16%	3.96%	4.64%	(6.12)%	5.67%
Net income (loss) before interest charges as a percentage of total assets		9.46%	6.40%	7.20%	(3.29)%	8.77%
Operating ratio		82.56%	89.78%	82.10%	111.30%	84.66%
Current ratio		0.99:1	0.78:1	0.71:1	0.91:1	0.77:1
Debt equity ratio		1.09:1	1.37:1	1.77:1	1.98:1	1.19:1
Debt service coverage		1.31	0.57	1.07	1.23	2.55
Self financing ratio						
– Annual		26.23%	(25.91%)	23.54%	29.61%	43.60%
– 3 years average		23.33%	(24.27%)	18.61%	27.14%	50.23%

- Notes:
1. Includes investment in associated company
 2. Includes current portion of long-term debts
 3. Excludes current portion of long-term debts
 4. After deducting promotion of exports, industrial estate discount and natural disaster discount
 5. Includes losses/(gains) from foreign exchange
 6. Excludes mine development expenditures
 7. Equity – excludes deferred foreign exchange adjustment