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Subject: (Embargoed) Speech by Mr Koo Sai Kee, 23 May 2000, 9.15 am

Singapore Government

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OPENING ADDRESS BY MR KOO TSAI KEE, SENIOR PARLIAMENTARY SECRETARY, MINISTRY OF NATIONAL DEVELOPMENT, AT THE "GERMANY-SINGAPORE ENVIRONMENTAL TECHNOLOGY AGENCY (GSETA): ASIA-PACIFIC REGIONAL WORKSHOP ON ENERGY EFFICIENCY", 23 MAY 2000 AT 9.15 AM AT SHERATON TOWERS SINGAPORE, BALLROOM 2

IMPORTANCE OF ENERGY EFFICIENCY AND SINGAPORE'S EFFORT TO IMPROVE ITS ENERGY EFFICIENCY PERFORMANCE

Distinguished Guests, Ladies and Gentlemen,

Introduction

1 I am very pleased to join you this morning at the "Asia-Pacific Regional Workshop on Energy Efficiency". Energy efficiency is a subject of much interest in many countries, including Singapore. It is a necessary tool for

optimising resource utilisation as a nation pursues its development as well as environmental objectives. This workshop on energy efficiency is, therefore, very timely in helping to create greater awareness in energy efficiency in Singapore and the region.

Importance of Energy Efficiency

2 In this global environment, where the economic well-being of nations is increasingly determined by their ability to adapt to keener international competition, an excessively high energy expenditure would lower their cost competitiveness. Using energy inefficiently also diverts limited economic resources of a nation away from efforts that could further underpin the resilience of the state.

3 We also have to recognise that oil and gas reserves are scarce resources. There may be periods of low oil prices like during the Asian financial crisis. However, such situations are temporary and deceptive aberrations. Oil and gas are exhaustible resources. Energy prices will rise in the long run to reflect their relative scarcity and high cost of exploration and extraction. Indeed, during the Asian financial crisis, the price of oil dropped to around US$15 per barrel but it has since peaked near US$30 a barrel and is now fluctuating at around US$25 per barrel. Moreover, any political and economic uncertainties will create short-run price shocks, which will hit energy importing countries like Singapore. Many of us can still remember the oil shocks of the 1970s and 1980s when OPEC cut supply and pushed up prices.

4 Another important consideration is the environmental concern of the effects of carbon dioxide on the world's climate. Carbon dioxide is closely correlated to the energy consumption of a nation. Hence, the 1998 Kyoto Protocol of the United Nations Framework Convention on Climate Change was established to reduce emissions of greenhouse gases in signatory countries.

Singapore's Efforts to Improve Energy Efficiency

5 Turning to Singapore, over the years, we have developed policies and implemented many measures to improve the energy efficiency in the different sectors. Energy consumption in Singapore can be attributed to three main sectors, namely industries, residential and commercial buildings and transport. Each of them is responsible for roughly one third of the total energy consumed in Singapore.

Industrial Sector

6 For the industrial sector, the Public Utilities Board has been providing

energy audit services and advice on energy conservation to the manufacturing plants. It also has an on-going programme to assist and encourage industries in setting up an energy auditing system.

7 There is a tax incentive scheme under which companies can claim accelerated depreciation allowance in one year for their capital expenditure on energy efficient equipment instead of the normal three years. The purpose of the scheme is to encourage companies to conserve energy by replacing the older energy inefficient equipment and investing in new energy saving technologies such as heat recovery systems and variable speed drive motors.

Building Sector

8 In the building sector, efforts to improve energy efficiency started in 1979. Since then, energy conservation standards for design of buildings have been incorporated in the local building code. The energy conservation standards prescribe a maximum Overall Thermal Transfer Value (OTTV) to reduce heat transfer into a building. The current Building Control Regulations include specific requirements on energy conservation such as zoning of air-conditioned space for temperature control and having an automatic control for each hotel room to regulate lighting and air-conditioning when the room is not used.

9 85% of the Singapore's population are housed in apartments built by the Housing and Development Board (HDB). The HDB spares no effort in adopting energy saving measures in the design of public housing. The apartments are designed for natural ventilation to minimise the need for air-conditioning, a major energy consumer in the local hot and humid weather conditions. For newer flats, sun-shades are provided to reduce direct sunlight into the living areas.

Transport Sector

10 In the case of the transport sector, Singapore actively promotes the use of public transport. A comprehensive range of efficient public transport is available, such as the Mass Rapid Transit (MRT), the Light Rail Transit (LRT) and public buses. It is well proven that public transport uses significantly less energy to move people than cars. Singapore also has in place many measures to manage the growth and usage of private vehicles. For example, the Vehicle Quota System, which was introduced in 1990, has moderated the growth of the vehicle population at a sustainable rate.

<u>Current Efforts not Enough</u>

11 However, Singapore's current efforts are not enough. Over the period 1980 to 1995, our average GDP growth was about 7.6% per annum.

However, our energy demand over the same period averaged 11.9% per annum.

12 We have not kept up with developed countries in the efficient use of energy. The Year 2000 World Competitiveness Yearbook, compiled by the World Economic Forum, ranked Singapore 25th out of 45 countries in energy intensity or the amount of commercial energy consumed per dollar GDP, behind most developed countries. This could be contributed by the fact that Singapore is a tropical city-state unlike the higher-ranked countries, which have temperate climates. Singapore depends heavily on air-conditioning to cool its buildings all year round. In temperate countries, heating is usually used only in late autumn and winter, and air-conditioning in summer only during very hot weather. Furthermore, Singapore is an urban and indusrialised city-state with no rural base.

13 Nevertheless, there is ample room for Singapore to improve on its energy efficiency performance. Figures from a study by our Ministry of the Environment show that by replacing less energy efficient refrigerators and air-conditioning units, which are the major domestic electricity consumption sources, with more energy efficient ones over a ten-year period, energy savings of 26% and 8% can be achieved respectively. Likewise, energy savings of similar magnitudes can also be achieved in commercial, institutional and industrial buildings.

14 Another example is in the manufacturing sector where motors are estimated to use three-quarters of the industry's electricity. Every factory has motors pumping essentially against friction. At a leading American carpet maker's factory in Shanghai, the initial pumping power was reduced by 92%, representing a 12-fold energy saving, after some of its processes were re-engineered. As a result, the company's capital cost was also reduced. There is thus great potential for savings and increased cost-competitiveness even in the competitive manufacturing sector. The return on investment in this case can be significantly larger than other cost-cutting measures that may not add to the competitive structure of the company, such as retrenchment of experienced staff.

15 Singapore's overall electricity consumption is projected to increase at an average rate of 5.3% per annum. To meet the projected growth in demand, we will need to increase our generating capacity by 60% before 2007. This requires heavy capital investment. Assuming that Singapore's direct expenditure on electricity can be reduced by 20%, the amount of cost savings can be more than $600 million annually (electricity sale of Singapore Power in 1997 amounted to $3.21 billion), not to mention other benefits such as land savings. Over the next 40 years, an estimated 570 to 720 ha of land will have to be set aside for power plants and transmission stations. If electricity growth can be curtailed, the opportunity costs of setting aside land for such use will

be reduced. Furthermore, the impact of power plants on the air quality in Singapore – a significant element of the quality of life in Singapore – will be minimised.

16 There are, therefore, strong economic and environmental imperatives for Singapore to become more energy efficient. The challenge will be how we can achieve this and yet ensure continued economic growth for Singapore.

Formation of IACEE and Release of Report

17 Recognising this need, the Government formed an Inter-Agency Committee on Energy Efficiency (IACEE) in 1998 to address the concerns over the increasing energy consumption of Singapore and to recommend policy measures to improve energy efficiency in Singapore. The IACEE is chaired by myself and comprises members from key Ministries, Statutory Boards and the academic institutions.

18 The IACEE completed its report in 1999. The report was originally meant as an internal working document to provide a framework for a more concerted effort by the key Government agencies to raise energy efficiency in Singapore. Nevertheless, the Government decided to make the Report public so as to educate and promote greater awareness amongst the professionals and Singaporeans on the need to take energy efficiency seriously.

19 However, back in 1999, Singapore was just recovering from the economic crisis in the region, and the main concern of the Government was to help Singapore tide over the crisis. It was felt then that it would not be a good time to release the Report. However, now that the Singapore economy has picked up, I am pleased to inform you that the IACEE will be releasing the report at a press conference this afternoon.

Concluding Remarks

20 There is part for everyone when it comes to promoting energy efficiency. The Government cannot do it alone. Consumers can play a part by embracing energy efficient products and practices. Building owners, architects and engineers can play a part, too, by incorporating energy efficiency measures when design and develop buildings. Research scientists, manufacturers and suppliers can also do their part by developing, introducing and promoting new and advanced energy-saving products and processes.

21 I am, therefore, glad to see a gathering of senior policy-makers, scientists, environmental experts, energy specialists and industry players from Germany and the Asia-Pacific economies at this workshop. I wish all participants a fruitful experience over the next 3 days. To the foreign delegates and visitors, I wish them a rewarding and enjoyable stay in Singapore. Thank you.

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