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SINGAPORE: MEETING THE ENERGY CHALLENGE

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As in the other Asean nations, a major area of concern in Singapore is to reduce its dependence on oil and diversify its energy sources. But while countries like Indonesia and Malaysia, and to a lesser extent, Thailand and the Philippines, can hope to broaden their fuel base by developing all alternative energy resources available to them, Singapore's options are limited. It has no energy sources on its small territory. The limited range of options available is also constrained by genuine environmental concerns.

The Republic's energy policy is basically limited to responding to market forces while at the same time making sure of flexibility, for instance, by building power plants with dual fuel-firing capacity - oil and coal.

The efforts so far to meet the energy challenge of the future have been in energy conservation, putting energy to its best use, fuel diversification and power network interconnection among the Asean nations.

The real impetus to formulating a specific energy policy did not come about until 1979. There was then a real fear that the Iran-Iraq war would cause a disruption of national supply.

Wholly dependent on imported oil, Singapore feared the consequences of oil rationing on an international basis. It is only too conscious of the fact that being the third largest oil refining centre in the world does not mean that it will be insulated from a sudden shortage in oil supply or from sudden oil price increases.

The oil refineries in Singapore, as Singaporeans are constantly reminded, belong to multi-national companies. And their priorities may not at all times coincide with the Republic's national priorities.

The government's answer was the setting up of the Singapore National Oil Company -- to ensure energy supply security. There began a build-up of a strategic crude oil stockpile which is sufficient for 90 days' consumption.

But with the present so-called oil glut, the government scrapped the crude oil stockpile earlier this year, moving instead towards product stockpiles by major users. For example, the Public Utilities Board, the largest consumer of fuel oil in Singapore, (burning over 1.5 tonnes annually), is building its own strategic storage to store fuel oi for its power stations.

In the search for alternative sources of primary energy, the SNOC has been holding talks with Malaysia and Indonesia with the aim of tapping their offshore natural gas to Singapore.

Agreement was reached in principle earlier this year for Malaysia to supply natural gas to partially meet Singapore's energy requirement.

Petronas, Malaysia's national oil company, estimates that it can supply the natural gas by 1988. Ultimately it is estimated that by 1990 30 to 50 percent of Singapore's power stations' fuel could be met by Trengganu gas. Singapore's daily gas consumption is projected to be between 150 and 2000 million cubic feet).

Both sides are now working out the details, such as pricing and who should pay for the link between Johore and Singapore.

The gas pipeline proposal to bring natural gas from Trengganu to Singapore, which was first raised by Mr Lee Kuan Yew with Malaysian Prime Minister Datuk Seri Dr Mahathir Mohamad last August when Mr Lee visited Kuala Lumpur, inyolves Singapore linking up to a Malaysian gas pipeline grid at Johore.

The scope on energy cooperation also extends to linking Johore's Pasir Gudang power station to Singapore's Senoko Station. Under the arrangement, the two countries will help each other during major power breakdowns. It will also allow plants to be serviced without disruption to supply on either side.

To diversify fuel usage, coal was also seriously considered up to last year, even though it was not without its problems, chief of which is associated with pollution. The other drawback for land-scarce countries is the fact that coal-fired stations require a large land area to accommodate coal stockpiles, wastes to be disposed, and handling facilities for coal shipments.

Despite the fact that the capital cost of a coal-fired power station could be 30 percent more than an oil-fired one, it was felt that the lower fuel cost would more than off-set the high capital cost. But with the recent arrangement with Kuala Lumpur to supply Singapore with gas, coal use has been temporarily put on the back burner. But it still remains an option, according to government officials.

A third alternative energy option is nuclear energy. The reasons for its attraction are that it is cheap in terms of power generation, and it is clean. But because of the danger to human life in the event of radiation leakages it is unlikely to be seriously considered for the foreseeable future.

Although the save-energy campaign is not as well publicised today as it was in the 1973-74 oil crisis period, nevertheless there is continuous stress on energy conservation and better and more effective use of energy, and a continuing crackdown on energy wasters.

Perhaps the most notable action taken by the authorities to promote energy conservation is the introduction in July 1979 of the Building Control Regulations, which set out guidelines for the space, lighting and ventilation requirements for buildings.

As an incentive, expenditure incurred in bringing the building to the standards stipulated by the Building Control Regulations is allowed accelerated write-off in one to three years for tax purposes. For the careless who do not comply with the regulations, the PUB slaps a hefty surcharge on their PUB bill. As for motor gasoline prices, it has always been the policy to let market forces dictate the price. Since 1979 there have been several increases in the price of fuel at the pumps.

Other actions taken to conserve energy include the re-vamping of the entire bus system, the setting up of an Energy Unit within the Ministry of Trade and Industry to co-ordinate and look into all energy matters, as well as the stationing of energy controllers to act as watchdogs on the proper use of energy in public and commercial buildings and factories. Additionally, the government will consider granting investment allowances to help industries install more energy efficient equipment, plants and buildings.

As a mini state, Singapore supports the development of regional cooperation in the development and use of conventional power plants. Understandably, it regards the interconnection of the power supply network of the Asean nations as another energy option. There can be technical benefits from the pooling of generation resources which can lead to better plant utilisation; fuel diversification due to the different types of fuels used by member utilities; greater system reliability and economy through cooperation under normal conditions, and mutual assistance in time of network malfunction. There is also the possiblity of reducing capital investments through joint participation in power plant construction, and a more logical generation system development sequence. The Republic has in mind the resources in some of the more remote areas of some Asean countries, for example, the vast hydro potential areas of Sarawak. If they could be developed and the energy transmitted to the nearest grid, regional power can then be used to the mutual benefit of the Asean utilities.