FACTSHEET
NUCLEAR ENERGY PRE-FEASIBILITY STUDY

Singapore's Energy Landscape

1. Singapore is a small country without any indigenous energy resources. Currently, about 80% of our electricity is generated using imported piped natural gas from Malaysia and Indonesia. While renewable sources such as solar energy can augment our energy supply, large-scale deployment of renewables to generate baseload electricity reliably and competitively remains a challenge, due to intermittency and space constraints. With these limitations, we have to ensure that energy does not become a barrier to our economic competitiveness, while managing the environmental impact of our energy decisions.

2. Singapore's overall energy policy framework thus aims to maintain a balance across three policy objectives – energy security, environmental sustainability, and economic competitiveness.

Pre-feasibility Study on Nuclear Energy

3. With this consideration in mind, the government, in 2010, embarked on a pre-feasibility study on nuclear energy in response to a recommendation by the Economic Strategies Committee. The study was part of our efforts to continually explore all options that could help us overcome our energy constraints and enhance our energy security.

4. The pre-feasibility study covered a range of areas, including nuclear safety, security and risk assessment, human resource development, and nuclear energy systems and demand. It involved several government agencies, external consultants and independent expert advisers (see Annex A for consultants and independent expert advisers).

Conclusions of Study

Nuclear energy technologies presently available are not yet suitable for Singapore

5. The study has concluded that nuclear energy technologies presently available are not yet suitable for deployment in Singapore. The latest designs of nuclear power plants are much safer than older designs which remain in use in many countries. However, the risks to Singapore, given that we are a small and dense city, still outweigh the benefits at this point. As we are planning for the very long term and not for our immediate energy needs, we prefer to wait for technology and safety to improve further before reconsidering our options. Over time, nuclear power plants with safer and more robust designs will be developed. Singapore needs to continue to monitor the progress of nuclear energy technologies to keep our options open for the future.

Strengthening capabilities to understand nuclear science and technology

6. Singapore needs to strengthen our capabilities to understand nuclear science and technology. This will enable us to assess the implications of evolving nuclear energy technologies and regional nuclear energy developments for Singapore, and enhance our operational preparedness. We will support research in relevant areas of nuclear science and engineering, and train a pool of scientists and experts through education programmes in local and overseas universities.

Global and regional cooperation is important to improve nuclear safety

7. With the future growth of nuclear energy in the region, Singapore should play an active role in global and regional cooperation on nuclear safety. This will facilitate sharing of best practices in nuclear safety, emergency planning and response; and support human resource development and a collective ability to respond to emergencies.

Ministry of Trade and Industry
15 October 2012

Annex A

Nuclear Energy Pre-Feasibility Study Consultants and Independent Expert Advisers

1. The pre-feasibility study was conducted by MTI with the assistance of two consultants, CH2M Hill and NERA Economic Consulting.

a. CH2M Hill is headquartered in Denver, Colorado, USA and provides consulting services for government, civil, industrial and energy clients. It has experience in the areas of water, transportation, environment, energy and power, and facilities and infrastructure.

b. NERA Economic Consulting is headquartered in New York City, New York, USA and provides consultancy services to government authorities, law firms and corporations. It has expertise in the areas of competition, regulation, public policy, strategy, finance and litigation.

2. In addition, three independent experts were engaged as advisers to the study, namely:

a. Dr Dennis L. Berry, Consultant in Nuclear Energy, and former Nuclear Energy Programs Director, Sandia National Laboratories, USA;

b. Mr Konstantin Foskolos, Consultant in Nuclear Technology, and former Deputy Head of Nuclear Energy and Safety Research, Paul Scherrer Institut, Switzerland; and

c. Dr Gail H. Marcus, Consultant in Nuclear Technology and Policy, and former Deputy Director-General, Nuclear Energy Agency, Organisation for Economic Cooperation and Development.