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Dr Su Guanng, President, Nanyang Technological University
Prof Ng Wun Jern, Executive Director, Nanyang Environment & Water Research
Institute
Distinguished guests
Ladies & Gentlemen

It is my pleasure to be here this morning for the official launch of the three Nanyang Environment & Water Research Institute (NEWRI) Centres.

2 Achieving sustainable development enables us to grow our economy whilst safeguarding our living and natural environment.

3 Today, Singaporeans enjoy a high quality environment in a vibrant and prosperous city state. This was achieved as a result of strong political commitment supported by good planning, constant innovation and effective implementation.

Growth of Singapore's EWT R&D Industry

4 Environmental innovations to meet our constraints, such as the Marina Barrage, Deep Tunnel Sewerage System and Semakau Landfill, have won international acclaim. Singapore's investments in our own environmental infrastructure as well as research and development have put us in good stead to harvest increasing international business opportunities, and the Environment & Water Technologies sector has become a key driver for economic growth.

5 To facilitate technology development in this sector, the government has put in place a range of grants addressing all aspects of R&D, from basic research, to applied research, prototyping, test-bedding, and even commercialisation. As part of this R&D network, NTU's NEWRI ecosystem plays a major role in the development of the environment and water industry in Singapore.

Relevance of NEWRI to Singapore's Environment & Water Industry

6 One of the challenges that Singapore faces as we rapidly scale up environment and water technology development, is the lack of suitably trained manpower. Hence, it is vital for universities to maintain its close communication links with industry, so as to better understand and equip their graduates with the knowledge and skills that best serve the marketplace.

7 Likewise, it is equally important for the research conducted by the universities to be relevant to the needs of the industry. I am pleased to note that NTU has been making every effort to ensure this. In fact, a major Japanese membrane manufacturer,

Toray, decided to set up their R&D office in Singapore after NEWRI proved that it could support their R&D work. Local companies have also found it useful to tap on NEWRI. For instance, local conglomerate, Sembcorp, signed an agreement with NEWRI during this year's Singapore International Water Week, to develop a system to remove organic matter from industrial wastewater. NEWRI's comprehensive R&D ecosystem and its strategic approach towards industry collaboration will be a major resource for Singapore's environment and water industry.

Relevance of Centres of Excellence to the Global Environment & Water Industry

8 The three centres being launched today – the Singapore Membrane Technology Centre, or SMTC, the Residues and Resource Reclamation Centre, or R3C, and the DHI-NTU Centre – are centres of excellence in a range of fast-growing niche areas.

Singapore Membrane Technology Centre (SMTC)

9 With population growth and increased urbanization, many of the world's natural freshwater sources have become strained by pollution and over-exploitation. Cities are therefore looking to alternative water sources, most of which require more complex purification processes. Once seen as cost-prohibitive, de-salted seawater and recycled water are now commonplace due to innovations in membrane technology. SMTC aims to bring down the cost of water production even further, by studying novel membrane technologies such as forward osmosis, membrane distillation, and functionalized membranes.

Residues and Resource Reclamation Centre (R3C)

10 Like water, waste management issues have arisen due to rising affluence and people consuming more. Beyond treating waste as unwanted matter to be disposed off, recycling of waste is now seen as a profitable resource creation enterprise in its own right. However, challenges still exist in the extraction of certain resources such as nutrients, and finding applications for typically unwanted waste like sludge. Through R3C's research, Singapore could get a larger foothold in this lucrative industry.

DHI-NTU Centre

11 The DHI-NTU Centre's expertise is in the overall planning and management of water and waste, which is no less important. For example, the development of a modeling software for water quality and water quantity in a reservoir, could help optimize our water capture, storage and distribution needs.

Concluding remarks

12 I would like to congratulate NTU and NEWRI for setting up these three important Centres Of Excellence. I am sure that they will contribute significantly to the manpower supply and scientific backbone of our environment and water industry. Your

work will provide Singapore with the impetus to grow economically as a global water and environment hub and contribute towards global sustainable development.

13 It gives me great pleasure now to declare the launch of the 3 centres. Thank you.

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