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Mr Peter Ho, Governing Board Chairman, Singapore Centre on Environmental Life Sciences Engineering,

Professor Freddy Boey, Deputy President and Provost of Nanyang Technological University,

Professor Barry Halliwell, Deputy President of National University of Singapore,

Ladies and gentlemen,

## Introduction

It gives me great pleasure to be here today at the opening of the Singapore Centre on Environmental Life Sciences Engineering, or SCELSE (pronounced “cel-see”). As a Research Centre of Excellence, SCELSE’s vision is to become one of the world’s top research centres in the emerging area of environmental life sciences engineering, through the conduct of cutting-edge research into microbial biofilm communities for the purpose of harnessing their powers for water and environmental sustainability. This is timely, as cities around the world are now confronted with increasingly complex challenges related to growing urban populations, providing a clean water supply and proper sanitation, and the provision of high quality environmental services.

## SCELSE'S contribution to water & environmental sustainability

2 Singapore, in particular, is a small city-state with limited natural resources. It is therefore critical for us to carefully manage our water resources, as well as to continue to develop in an environmentally sustainable manner. Unfortunately, urbanisation and economic development stresses the environment, and if left checked="checked"="checked"="checked"="checked"="checked"="checked", will inevitably affect the ecosystems of our rivers and environment.

3 The science and technology that SCELSE promises can meet these complex challenges that a modern society like Singapore faces today. By delivering an advanced understanding of our planet's key microbial systems, SCELSE's work will enable greater engineering control of the biological processes encountered in the provision of environment and water services, such as in:

- the treatment of water and used water in the water cycle,
  - the development of novel environmental bioprocesses with reduced carbon footprints,
  - the discovery of innovative bio-remediation processes to eliminate pollutants from the environment, and
  - the delivery of new bio-technologies that benefit industry and public health.

4 Such a thorough understanding of water and environmental sustainability requires multi-disciplinary research and close collaboration with public-private sector partners. I am happy to note that SCELSE has started off well on both fronts. Indeed, it is heartening to note SCELSE's close affiliation with two of Singapore's foremost universities, the Nanyang Technological University and the National University of Singapore, which allows it access to the best technology as well as scientists and researchers that the two institutions have to offer. Although hosted at NTU, SCELSE is really a unique research venture between the two universities to harness complementary academic strengths and research capabilities. With the nexus of multi-disciplines, I am confident that SCELSE will push the boundaries of science and advance the understanding of many bioengineering systems.

5 I also encourage SCELSE to proactively collaborate with the public sector and industrial partners, because this will accelerate the translation of scientific findings into pragmatic solutions. For example, the collaboration between SCELSE and PUB, the national water agency, to analyse the microbial communities in membrane bioreactors is a good first step. This project, which aims to correlate changes in microbial functions with changes in operating parameters, will go a long way towards improving the performance of used water treatment using membrane bioreactors. With similar collaborations with industrial partners, SCELSE can provide the competitive edge to Singapore's companies in clean technology, environmental management and pharmaceutical drug development, and ultimately contribute towards enhancing Singapore's job market and economic development.

### **Conclusion**

6 I would like to wish SCELSE every success as it embarks on the development of novel biotechnologies for water and environmental sustainability. This is indeed a truly exciting initiative. I believe your unique endeavour will see you take on an increasingly important role, a role that will benefit all.

7 Thank you.

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