

**MEDIA RELEASE**

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**Proposal from Expert Panel for Singapore to Develop Differentiating Advantages in Clean Energy**

1. Singapore, 20 November 2009 - The International Advisory Panel (IAP) on Clean Energy concluded its second meeting today. The IAP re-affirmed the strong market potential of Clean Energy and made the following recommendations to strengthen Singapore's competitiveness in the Clean Energy initiative and the broader Sustainable Development space:

- Promote test-bedding and innovation in Electric Vehicles, Smart Grids, Green Buildings and Districts, and Waste-to-Energy Solutions
- Develop systems integration as a differentiating advantage for Singapore
- Develop a framework for commercialising Singapore's expertise in Sustainable Development.

2. IAP Co-Chairman Lord Ron Oxburgh said, "Recent years have seen increased attention to areas such as electric vehicles, smart grids, green buildings and waste-to-energy. These opportunities have a good fit with Singapore's strong interdisciplinary capabilities and will bring with them a substantial amount of economic and environmental benefits."

3. IAP Co-Chairman Mr Leo Yip remarked, "The panel's endorsement of Singapore's progress in Clean Energy is very encouraging. Their recommendations on new growth areas for Singapore will help us accelerate our efforts to be a leader in Clean Energy and Sustainable Development, and create new opportunities for companies based here, and for our workers."

**Promote test-bedding and innovation in Electric Vehicles, Smart Grids, Green Buildings and Districts, and Waste-to-Energy**

4. The panel recommended that Singapore move quickly to capture the opportunities from the potential of Electric Vehicles (EV), Smart Grids, Green Buildings and Districts, and Waste-to-Energy. These sectors are poised for strong growth in the coming years and can leverage on Singapore's capabilities.

5. In the field of EV, Singapore can leverage on its infocomm technology, electronics and power engineering strengths, to develop competencies in EV charging infrastructure, power engineering, telematics, vehicle diagnostics and energy storage. The IAP also noted yesterday's announcement by the Energy Market Authority (EMA) to establish the Intelligent Energy Systems pilot test-bed programme, and opined that this would help advance the development of smart grid solutions in demand management, smart pricing and create export opportunities.

**Develop systems integration as a differentiating advantage for Singapore**

6. The IAP recommended that Singapore leverage its expertise in systems-level innovation to create a differentiating advantage in Clean Energy and Sustainable Development. They pointed to Singapore's success in Water technologies as an example. IAP members shared that these markets are driven by the interplay between technology advancements, market needs and policy choices.

7. The panel was thus pleased to note HDB's S\$31 million Solar Test-bed programme to build solar energy capabilities through trials at 30 HDB

precincts island-wide. The IAP encouraged the Government to expand this effort of providing large scale integrated living laboratories for novel Clean Energy and Sustainable Development solutions. Members opined that the Government can help grow this and other cleantech sectors by playing the role of a lead user and smart procurer. They also urged that attention be placed on developing commercially viable models for financing such activities in the private sector.

### **Develop a framework for commercialising Singapore's expertise in Sustainable Development**

8. The IAP observed that Singapore was regarded by many cities and countries in the region as a reference site for sustainable urban development. Members urged that Singapore capitalise on this and commercialise its expertise and knowhow, similar to how Singapore has done so in Water technologies. Such a commercialisation framework will entail an ecosystem of multipliers comprising testbeds, incubators and financing organisations.

### **Singapore's progress in growing the Clean Energy industry**

9. The IAP also commended the rapid progress made since the sector was identified as a key growth opportunity for Singapore in 2007. Panel members strongly endorsed Singapore's overall blueprint to grow the Clean Energy industry and pointed out that Singapore's existing industrial strengths in semiconductor, precision engineering and chemicals provided a strong base of capabilities and skilled manpower that Clean Energy players can tap into. Specifically for solar energy, Singapore also has an advantageous geographical position to tap on the Asian sunbelt market.

10. On a whole-of-government basis, Singapore has set aside funding of S\$350 million for Clean Energy research and development including \$170 million from the National Research Foundation (NRF). The IAP reviewed and endorsed the priorities of the Solar Energy Research Institute of Singapore (SERIS) located at the National University of Singapore (NUS). Panel members were pleased with the progress of SERIS and regarded the S\$130 million centre as a technology vanguard for Singapore in the areas of (i) wafer and thin-film silicon photovoltaic devices; (ii) novel photovoltaic devices and (iii) innovative materials for solar and energy-efficient buildings.

11. In addition, the panel welcomed the establishment of the S\$60 million Centre for Sustainable Energy Research (CSER) at the Nanyang Technological University (NTU). CSER will focus on wind and marine renewables, green buildings, energy storage, and fuel cells. Leveraging on NTU's strong, existing capabilities in power engineering, power electronics, materials and aeromechanical capabilities, CSER will diversify Singapore's clean energy landscape and help Singapore develop a more comprehensive industry cluster.

12. The IAP also lauded Singapore's efforts to invest in the training of Singaporeans and attract international talent - such as the leadership of SERIS - in the Clean Energy field. This manpower pool will become a key differentiator for Singapore, given the shortage of expertise globally as a result of the industry's rapid growth in the last few years.

### **Conclusion**

13. The Panel concluded that Singapore is well on track in its efforts to develop a robust and competitive Clean Energy industry. The economic growth in Asia is attracting many international companies to establish operations in the region and the IAP believed that Singapore is well-placed to

attract these investments. Members also advised Singapore to be the gateway between India and China. They encouraged Singapore to remain on course and implement its comprehensive developmental blueprint to position itself as a leading global Clean Energy hub.

## Annex 1 - Clean Energy IAP Members

The full list of IAP members is as follows:

- a) Lord Ronald Oxburgh (Co-Chairman Clean Energy IAP)
  - Member, House of Lords, UK
  - Former Chairman, Shell Transport & Trading PLC, UK
- b) Mr. Leo Yip (Co-Chairman Clean Energy IAP)
  - Chairman EDB, Singapore
- c) Dr. Dan Arvizu
  - Director, National Renewable Energy Laboratory (NREL), USA
- d) Dr. Alf Bjorseth
  - Chairman, Scatec, Norway
- e) Mr. Nicholas Parker, Canada
  - Executive Chairman, Cleantech Group, Canada
- f) Professor Koen Steemers
  - Head, Department of Architecture, University of Cambridge, UK
  - President, Passive and Low Energy Architecture (PLEA) International Association, UK
- g) Mr. Ole Enger\*
  - President & CEO, Renewable Energy Corporation (REC), Norway
- h) Dr. Winfried Hoffmann, Germany\*
  - Vice President & Chief Technology Officer, Energy and Environmental Solutions, Applied Materials, USA
  - President, European Photovoltaic Industry Association (EPIA)

\*: Not able to attend 2009 Clean Energy IAP meeting

## Annex 2

### About Clean Energy Programme Office (CEPO)

The Clean Energy Programme Office (CEPO) is Singapore's key inter-agency workgroup responsible for planning and executing strategies to develop Singapore into a Global Clean Energy Hub where clean energy solutions are developed here for the global market.

Set up in April 2007, CEPO leverages the strengths of various government agencies - the Economic Development Board (EDB), Building & Construction Authority (BCA), Agency for Science, Technology and Research (A\*Star), Energy Market Authority (EMA), National Environment Agency (NEA), International Enterprise Singapore (IE Singapore) and Ministry of Trade and Industry (MTI).

Through the various agencies, CEPO grows and nurtures local and foreign Clean Energy companies through comprehensive cluster development, targeted internationalisation efforts, fostering of world-class research and technology development, and long-term manpower planning.

### About the Singapore Economic Development Board

The Economic Development Board (EDB) is the lead government agency responsible for planning and executing economic strategies to enhance Singapore's position as a global hub for business and investment. We are the one-stop agency that facilitates and supports local and foreign investors in both the manufacturing and services sectors as they seek more value-creating operations, higher sustainable returns and new business opportunities.

Singapore commands global leadership positions in many areas. EDB is expanding and extending existing industry clusters, as well as exploring new growth areas to create good jobs and secure Singapore's future competitiveness. Our emphasis is on capital-intensive, knowledge-intensive and innovation-intensive activities. EDB is also expanding our geographical reach, such as Middle East, in addition to North America, Europe, Japan, China, India and ASEAN.

For more information on how EDB can help in your business and investment, please visit [www.sedb.com](http://www.sedb.com).

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