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Media Release

A*STAR's Experimental Power Grid Centre to spur R&D collaborations for future energy and smart grid solutions

Centre provides compelling value propositions for research partnerships with public and private sectors to tackle global energy challenges

1. **Singapore, 1 November 2011.** The Experimental Power Grid Centre (EPGC), one of the largest experimental power grid facilities in the world was officially opened in Singapore, today, by Mr. S. Iswaran, Minister in the Prime Minister's Office and Second Minister for Home Affairs and Trade & Industry.
2. Located on Jurong Island, EPGC, the Agency for Science, Technology and Research's (A*STAR's) centre for energy research is established to support Singapore's goal toward developing a smart energy economy. The facility will pave the way for cutting-edge research and research collaborations with local and international partners to develop future energy technologies in areas of electrical power networks and energy distribution and renewable energy resources, for eventual commercialisation.
3. At the opening today, A*STAR's EPGC signed a research collaboration agreement with SP PowerGrid and three MOUs respectively with Housing Development

Board (HDB), Meidensha Corporation Japan and National Instruments. These agreements span research in varied fields, including renewable energy integration, advanced high efficiency inverters and smart grid control, with the aim of developing robust, cutting-edge solutions that can be quickly adopted and implemented.

4. The research collaboration with SP PowerGrid will study how to improve the reliability of the grid to enable SP PowerGrid to continue delivering world-class power reliability and quality. “SP PowerGrid is pleased to work with EPGC, a leading research institute in electricity grid-related technologies, to explore and develop new smart grid technologies that are robust and yet cost-effective for our operations,” said Sim Kwong Mian, Managing Director, SP PowerGrid.

5. HDB is another local partner that is leveraging EPGC’s R&D capabilities to jointly explore the integration of renewable energy for public housing.

6. Beyond local partners, EPGC has also attracted the interest of international companies like National Instruments and Meidensha. US-based company National Instruments will be collaborating with EPGC to develop advanced measurement and control technologies for smart grids. Chandran Nair, Managing Director, National Instruments, said, “National Instruments sees EPGC as a valuable research partner for developing advanced solutions for distribution automation and real-time smart grid controllers to cater for high renewable energy penetration.”

7. Meidensha, a leading Japanese manufacturer in the heavy electric industry, will engage in research with EPGC to develop high efficiency control technology for advanced medium voltage inverters that are used in industrials pumps and fans.

8. This latest public-private partnerships will add to existing collaborations forged with Vestas and Rolls Royce, during the centre's groundbreaking in July 2010.

9. Vestas, the world leader in wind technology, has already completed a project with EPGC to co-develop technologies to enhance the capabilities of wind turbines. Rolls Royce, a global power systems provider, has begun research on marine grid system with EPGC.

10. Mr Lim Chuan Poh, Chairman, A*STAR, said, "The launch of EPGC is timely with the increasing global demand for renewable energy and innovative energy transmission and networks. EPGC provides a unique research platform for public-private partnerships to develop future energy and smart grid solutions. The collaborations that we have developed signal the immense potential EPGC offers to industry partners and public agencies to translate research into novel energy solutions to create value for Singapore. These will not only transform Singapore into a smart energy economy, but also make an impact in the international energy landscape, establishing Singapore as Asia's Innovation Capital."

11. EPGC is also working closely with local stakeholders such as its partner agencies including the Economic Development Board, Energy Market Authority (EMA), JTC Corporation and National Environment Agency to create Singapore's smart grid value chain from R&D initiation to commercial test-bedding and eventual technology adoption.

12. Mr. Chee Hong Tat, Chief Executive, EMA, said, "EMA will continue to work closely with EPGC to conduct research and analysis on smart grid technologies. Examples of collaboration projects include the Intelligent Energy System pilot and the

Pulau Ubin Micro-grid Test-bed. These efforts will help to enhance our grid operations, which would support the deployment of intermittent renewable energy sources and provide greater scope for consumers to reduce their energy consumption. ”

13. Associate Professor Ashwin Khambadkone, Programme Director, EPGC said, “The EPGC focuses on research to develop solutions for quick adoption. It is designed to be flexible to allow various power networks to be configured within the facility. In addition, EPGC can facilitate research in the integration of renewables with its unique ability to replicate the power output of renewable energy sources at any time and any place through its wind turbine and solar PV emulators. At 1 Megawatt, power sufficient for 500 households, near grid-like conditions can be created in EPGC, making it a preferred platform for researchers, industry and public agencies to find solutions for a cleaner, more efficient and reliable electric power.”

For media enquiries, please contact:

Ms Caroline Chia

Tel: +65 6796 3884

Mobile: +65 91703988

Fax.: +65 6873 4805

Email: chialic@scei.a-star.edu.sg

Mr. Jimmy Lim

Tel.: +65 6419 1162

Mobile: +65 9008 9425

Fax.: +65 6873 4805

Email: limjkm@scei.a-star.edu.sg

Mrs. Vivian Heng

Tel: +65 68266441

Mobile: +65 9831965

Fax.: +65 64789593

Email: Vivian_heng@ a-star.edu.sg

About the Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is the lead agency for fostering world-class scientific research and talent for a vibrant knowledge-based and innovation-driven Singapore. A*STAR oversees 14 biomedical sciences and physical sciences and engineering research institutes, and six consortia & centres, located in Biopolis and Fusionopolis as well as their immediate vicinity.

A*STAR supports Singapore's key economic clusters by providing intellectual, human and industrial capital to its partners in industry. It also supports extramural research in the universities, hospitals, research centres, and with other local and international partners.

For more information about A*STAR, please visit www.a-star.edu.sg.

About Experimental Power Grid Centre (EPGC)

The EPGC is a programme under A*STAR's Institute of Chemical and Engineering Sciences, with the mission to undertake research and development activities in defined core areas for intelligent and decentralised power distribution, interconnection and utilisation, and to promote quick adoption and implementation of innovative technologies. These activities will foster collaboration with A*STAR's research institutes, universities, industry and Singapore's public agencies, to which EPGC will offer:

- Research excellence in core areas (Intelligent/decentralised power distribution networks, Control and management of distributed energy resources, Smart and interactive energy utilisation)
- Advanced Lab facilities and tools
- High value-add R&D activities integrated in A*STAR framework and capable of delivering proof of concept prototypes
- The benefit from working together with partner agencies to facilitate test bedding and technology trials of developed products, in the "Singapore as a living lab" framework.