MARCH 2013

MEDIA FACTSHEET

Green Data Centre (DC) Forum
14 March 2013, 9am, Mapletree Business City Auditorium

1) Background

As Singapore's commercial data centre space is projected to increase by 50% from 2010 to 2015, it is important to look at how green and sustainable data centres are, given their heavy energy consumption. Data centres are also growing in size and complexity, which increase cost for businesses; improving their energy efficiency has hence become a business imperative to remain cost-competitive.

The Green Data Centre (DC) Forum 2013 is a one-day forum organised by the Infocomm Development Authority (IDA) in collaboration with the Building and Construction Authority (BCA), aimed at promoting the importance of energy efficiency of data centres in Singapore. This is the second time the forum has been held since the inaugural forum in 2011. The Green Data Centre (DC) Forum is a full-day event that brings together leading experts and industry practitioners from the data centre community to learn and share their knowledge on standards, best practices, and innovations that will lead to greener, more energy-efficient data centres.

During the event, the pioneer batch of data centres which were successfully certified under the BCA-IDA Green Mark for Data Centre scheme will be presented certificates to recognise their achievements.

The event will also cover case study presentations by local data centres that have participated in the IDA Green DC Innovation Challenge. In the afternoon, there will be an introductory workshop on the Green Mark for DCs scheme.

More information can be found at the website www.greeninfocomm.sg.

2) BCA-IDA Green Mark for Data Centres Scheme

The BCA-IDA Green Mark for Existing Data Centres scheme was launched in October 2012. The scheme covers both data centres that may occupy a purpose-built data centre building or are part of a larger building. It assesses data centres based on five key criteria - energy efficiency, water efficiency, sustainable construction & management, indoor environment quality as well as other green features. BCA will release more information of the assessment criteria on their website soon. *(criteria for existing DCs launched in Oct 2012*

are already available on BCA's website. BCA will upload the criteria for new DCs after 15 March).

Based on the combined scoring, the data centres will be awarded Green Mark Platinum, Gold^PLUS, Gold or Certified status. The scheme is applicable to existing data centres that have been built and operated by adopting energy-efficient design, technologies and practices.

The BCA-IDA Green Mark for New Data Centres is an expansion of the scheme covering data centres that are still in planning / design phase. Unlike the existing data centre scheme that requires onsite measurements of operating performance, the criteria for new data centres relies on a simulated approach through the use of energy modeling to assess the performance of proposed designs.

The new data centres category will be launched at the Green Data Centre (DC) Forum 2013. The assessment criteria and application process will be made available under BCA's Green Mark website http://www.bca.gov.sg/GreenMark/green_mark_buildings.html .

3) Green Mark Certified Data Centres

The following pioneer batch of data centres have been certified under the BCA-IDA Green Mark for Data Centres scheme:

Existing Data Centres

1. Credit Suisse Regional Data Centre - Platinum

2. Equinix SG2 Data Centre - Gold^PLUS

3. Singapore Tourism Board Data Centre - Gold

New Data Centre

1. Abbott Data Centre - Gold

For more information on these data centres, please see Annex A.

4) Green Data Centre Innovation Challenge

In 2011, IDA issued a Call for Collaboration (CFC) to facilitate joint collaborations between data centre operators and their business partners to develop and deploy holistic and innovative solutions. More than just point solutions, these solutions will comprise a combination of technologies that will significantly improve DC energy efficiency such that they can be used as a

showcase. The CFC allowed DC operators/vendors to choose their own partners, and have ownership of their "Green DC" pilot deployment, so as to help them to understand and assess the technology and business viability of Green DC solutions. This lowers the risk of failure of commercial deployment. Furthermore, with co-funding from the government on the pilot implementations, DC operators can try out new and innovative Green DC solutions.

The winners of the challenge were supported by a grant for a pilot implementation of their proposed solutions, and they have conducted pilot deployments of Green DC technologies in their own data centres, or even at their partners' premises. The four winning consortiums are led by Equinix Singapore Pte Ltd, Toshiba Asia Pacific Pte Ltd, ClearManage Pte Ltd and 1-Net Singapore Pte Ltd.

The industry sharing on 14 March 2013 is for the winning consortiums to share results and experience of their pilot implementation. IDA hopes that this will help raise the bar for the whole data centre sector. Information on the four consortiums can be read here. https://www.ida.gov.sg/About-Us/Newsroom/Media-Releases/2012/Data-Centres-and-Companies-can-Benefit-from-Innovative-Green-ICT-Solutions.aspx

FOR MORE INFORMATION

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Green Mark Certified Data Centres

The following pioneer batch of data centres have been certified under the BCA-IDA Green Mark for Data Centres scheme:

Existing Data Centres

1. Credit Suisse Regional Data Centre - Platinum

   The building is a purpose built facility for use as a financial institution regional data centre. The facility was awarded a Platinum Green Mark rating under the special building category in 2009, as well as a Platinum Green Mark rating in 2010 under the office interior category, and is now pursuing a similar rating under the new Green Mark for Data Centre rating.

2. Equinix SG2 Data Centre - Gold^{PLUS}
   Equinix, Inc. (Nasdaq: EQIX), connects more than 4,000 companies directly to their customers and partners inside the world's most networked data centers. Today, businesses leverage the Equinix interconnection platform in 31 strategic markets across the Americas, EMEA and Asia-Pacific. www.equinix.com.

   While data centers are traditionally known for being energy-intensive facilities, Equinix sought to break the norm with its SG2 facility, which was designed with the aim of operating as energy-efficiently as possible.

   For example, Equinix deploys cold aisle containment infrastructure to support higher power density installations in its sites, which uses a physical barrier to reduce the mixing of cold supply air and hot exhaust air in data center aisles to deliver lower energy consumption and more efficient cooling. In addition, an automated system of electrically commutated fans was installed to improve air flow and air distribution, while reducing noise levels.

   Other green features include the use of motion-activated LED lights across the entire SG2 site, as well as using recycled NEWater for cooling purposes. Equinix is committed to continually evaluating new technologies, alternative energy options and new designs to operate its IBX data centers as efficiently as possible while maintaining the reliability its customers expect.

Following the implementation of these eco-friendly practices, Equinix has seen a 10% reduction in electricity for SG2, which translates to a saving of 4.3 million kilowatts hours annually.

3. Singapore Tourism Board Data Centre – Gold
The data centre supports the entire IT infrastructure that spans across the STB building. It is integral to STB's network and systems infrastructure, supporting IT operations, Intranet and applications. It was designed and built based on green technologies, with the objective of achieving a better Power Usage Effectiveness. Power savings of approximately 280,022.4 kW were brought about directly as a result of the data centre redesign. The data centre also achieved a Power Usage Effectiveness (PUE) of 1.74, an improvement of more than 50 per cent from previous PUE.

The following sections are a highlight of some of the methods used in STB's green data centre:

Reducing power usage
- Selection of data centre that has high power efficiency – Data Centre TIER II Level with N+1 redundancy and UPS efficiency at 94.5%.
- UPS output loads are balanced by distributing the load to each equipment rack equally.
- Installation of motion sensor activated lights; lights used are T-5 fixtures, which are Greenmark certified.

Efficient cooling methods
- Airflow regulation through:
- Raised floors (underfloor air distribution).
- Hot aisle /cold aisle configuration.
- Cooling units aligned with hot aisle (optimise cooling efficiency).
- Perforated tiles placed exclusively in cold aisles and solid tiles placed in hot aisles.
- Blanking panels installed on unused space in racks to seal unnecessary perforation.
- Higher perforation rate for rack doors.
- Optimised space utilisation.
- Precision cooling system for high density equipment racks.
- With these methods, the data centre's room temperature is set at 25 degrees Celsius.

1. Abbott Data Centre – Gold
   Abbott Singapore
   Abbott is a global healthcare company devoted to improving life through the development of products and technologies that span the breadth of healthcare. With a portfolio of leading, science-based offerings in diagnostics, medical devices, nutritionals and branded generic pharmaceuticals, Abbott serves people in more than 150 countries and employs approximately 70,000 people.

   Abbott has been operating in Singapore since 1970 and has approximately 900 employees working in manufacturing, research & development, training & education, sales and marketing. They are located across Abbott's headquarters offices, as well as its manufacturing, research & development and training facilities in Singapore.

   For more information, visit Abbott at www.abbott.com or www.abbott.com.sg and connect with us on Twitter at @AbbottNews.

   Abbott's Green Initiatives
   Abbott works diligently to reduce our global environmental impacts – from the sourcing of raw materials, to the manufacture and distribution of our products, to the use and disposal of our products by patients, consumers and health care providers. Our environmental stewardship initiatives help protect the planet while improving efficiency, reducing costs and preserving our ability to do business in the future.

   We have three environmental priorities: climate change adaptation, water conservation, and product stewardship. We have developed comprehensive management and governance systems to ensure that environmental considerations are fully integrated into our day-to-day planning and business processes.

   Abbott is increasing efforts to integrate green engineering technologies and concepts into our regularly scheduled projects, as well as new building design. In 2010, we implemented a front-end planning process and assessment tool for evaluating the energy and environmental impacts of capital projects. This front-end planning tool gives project managers a checkpoint and processes for assuring the evaluation of best environmental and energy practices suitable for the project. The tool also estimates energy usage and costs over a building's useful life. In addition, our assessment tool provides carbon footprint reporting and optimization alternatives that can improve a building's carbon neutral potential.

We are committed to using green building guidelines when planning or evaluating each construction project, whether it involves a new building or renovations to an existing building.