



“When dealing with the fluidity and dynamism of the market, the need to maintain data integrity and confidentiality is crucial. Given that our entire business model is built on our data being reliable and accurate, we only depend on proven technologies to drive our systems. We have worked with Hitachi Data Systems closely over the past five years, and we value their technology and storage expertise for our continued success.”

James Ng
 Vice President
 Market Operations and Information Technology
 Energy Market Company Pte Ltd (EMC)

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INDUSTRY Energy

SOLUTIONS **Business Continuity and Replication**
Hardware — Hitachi Universal Storage Platform® VM
Software — Hitachi TrueCopy® Synchronous and Hitachi In-System Heterogeneous Replication bundle



Energy Market Company Taps Hitachi Storage Technology to Power a Nation

All of Singapore's electricity is bought and sold through Energy Market Company Pte Ltd (EMC). This company's key business challenges are to ensure the availability of the IT market systems, accuracy of pricing and security of settlement, provision of market information, compliance to market rules and the evolution of the market framework.

To address these challenges EMC turned to the enterprise-level capabilities of Hitachi Universal Storage Platform® VM with Hitachi TrueCopy® Synchronous and Hitachi In-System Heterogeneous Replication software bundle.

EMC operates Singapore's wholesale electricity market, completing the connection between those who produce electricity in Singapore and those who use it. The National Electricity Market of Singapore (NEMS) opened for trading in 2003.

EMC's team of about 60 professionals works closely with all parties involved in the energy market, from generation companies to retailers.

One key aspect of EMC's continuous operation is to establish prices and quantities every half hour for the energy, reserve and regulation products traded in the NEMS. This half-hourly discovery process plus other critical

processing generate data, which are stored in the centralized production database.

This database is currently about 460GB in size and needs to be constantly archived, accessible and online to maintain the optimal performance and minimize the growth in size.

As the energy market in Singapore matures and evolves, enhancements to the IT systems and applications are implemented to meet growing business needs. EMC must operate a 24/7 IT infrastructure that can fulfill stringent processing demands as well as support the growing complexity of changes required to answer the business needs of the NEMS market.

Challenges

The challenges facing EMC are significant:

- Support a business model built around 24/7 critical business processing.
- Enable increasingly complex systems and computations as the IT systems and applications need to evolve and change to meet the business needs.
- Employ a flexible system that can evolve with the NEMS and at the same time continue to operate seamlessly on 24/7 basis.
- Minimize downtime and disruption to the wholesale electricity market systems.
- Run a system that is simple enough to be managed efficiently with minimal IT resources.
- Reduce capital expenditure (CAPEX) and operating expense (OPEX).

Best-of-class Solution Addresses Enterprise's Specific Requirements

The data-intensive nature of EMC's business requires it to have a robust IT back end capable of keeping up with the required time-sensitive market analysis and report generation. With the world focused on energy and energy markets, EMC has to look to best-of-class technology to ensure minimal market disruption and seamless energy trading round the clock.



"Reliable and local support from Hitachi Data Systems helps to pinpoint and solve technical issues in a matter of minutes, resulting in efficient troubleshooting and a high level of availability of the overall NEMS systems."

*James Ng
Vice President
Market Operations and Information Technology
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Not only is a modern IT back end associated with fewer malfunctions and failures, but the newer technology employed also means that data and system management are streamlined.

Given the high availability yet mid-volume needs of EMC, it was logical for them to consider a tried and tested storage solution with minimal to zero risk post implementation.

The need for simplicity and standardization in both management and administration was another priority for EMC.

It was also key for EMC to look for a vendor that provides not only robust hardware, but also reliable and local support. Hitachi Data Systems helped to pinpoint and solve technical issues in a matter of minutes, and provided a high level of efficiency for troubleshooting and a high level of availability for the overall NEMS systems.

The Winning Hitachi Combination

The Hitachi Universal Storage Platform VM, Hitachi TrueCopy Synchronous and Hitachi In-System Heterogeneous Replication bundle provide a continuous, nondisruptive, host-independent remote data replication solution for disaster recovery or data migration over any distance.

The In-System Heterogeneous Replication bundle supports cloning and was chosen based on the following criteria:

- Proven solution that can be easily standardized and simplified to suit EMC's specific business needs.
- Consistent, reliable replication system.
- Direct and personalized support from Hitachi Data Systems.
- Cost-effectiveness.
- High availability that exceeds the overall target of 99.90%, achieved through the deployment of Hitachi storage hardware and software with other IT infrastructure.

Measurable Results

The Hitachi Lightning 9970V™ enterprise storage system was installed in 2006 in a well-managed implementation that met EMC's planned timeline. The migration to the Universal Storage Platform VM with TrueCopy Synchronous software and In-System Heterogeneous Replication software bundle was completed in 2010. This implementation aligns with EMC's objective to have a robust and integrated storage solution that would be capable of supporting intensive data usage for the other IT infrastructure systems and applications.

Measurable results include:

- The solution has helped EMC to leverage the existing UNIX administrator to manage the storage setup, which efficiently uses EMC's IT resources.
- The IT infrastructure has the ability to support the switchover and switchback mechanisms.
- Reliable, local Hitachi Data Systems support helps to pinpoint and solve technical issues in a matter of minutes, freeing the EMC system administrator to focus on the half-hourly price discovery process.
- Upgrading EMC's previous system, the Lightning 9970V, to the current one, the Universal Storage Platform VM, was completed seamlessly, with minimal business impact.

Ultimately, the key factors that gave Universal Storage Platform VM, TrueCopy Synchronous and In-System Heterogeneous Replication the edge were measurable cost-effectiveness, simplicity in management and high performance.

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