

SIEMENS

Ingenuity for life

Totally Integrated Power

Reliable power supply, transparent control

Totally Integrated Power
for Evonik Me5 plant in Singapore

Customer

Evonik SEA Pte. Ltd., Singapore

Location

Jurong Island, Singapore

Project/system

Complete power supply for Evonik's methionine plant in Singapore

EPC

Jacobs Engineering Singapore Pte Ltd.

Implementation period

- Project start: August 28, 2012
- First critical milestone energization of 66-kV GIS: February 26, 2014
- Complete energization of electrical network: July 2014

Scope of products and services

- 66-kV GIS – 8DN8 (7 bays)
- 10-kV GIS – 8DB10 (55 units)
- GEAFOL cast-resin distribution transformer (13 units)
- Substation automation system Sicam PAS (1 lot)
- 12-kV busduct (1 lot)
- Neutral ground resistor (4 units)
- SIPROTEC 4 protection relays

Methionine is an indispensable amino acid for healthy and sustainable animal nutrition – and Evonik is the market leader for this product. The company strengthened this position with the largest investment in its history: a new methionine production complex costing roughly €500 million. The plant boasts an annual capacity of 150,000 metric tons and produces not only the amino acid methionine but also all important raw materials required for the production process. The most essential “raw material” is, of course, a reliable power supply that not only keeps the production up and running but precisely meets the demands of complex chemical production processes. And that's what Totally Integrated Power is all about.

The challenge:

designing a fully integrated energy management solution for power supply, monitoring, control, and automation

A greenfield project this size comes with a lot of challenges. Right from the start, an enormous amount of strategic planning was needed to keep up with the very ambitious timing.



The plant in Singapore is Evonik's largest chemical investment in the company's history

“We were greatly impressed by the product quality, expertise, customer service, and dedication Siemens demonstrated throughout the entire project. Even under difficult and critical conditions, the project management kept things running with a great personal touch. We never had the slightest doubt that Siemens would deliver.”

James A. Ledger
Project Manager Electrical
Evonik Methionine SEA Pte. Ltd.

“Thanks to a global account and project team, we were able to provide a comprehensive solution in a close collaboration with EVONIK.”

Frank Matzke
Global Account Manager
Siemens AG

The biggest challenge was to find a holistic approach for developing a fully integrated energy management solution for power supply, monitoring, control, and automation that would meet all of the customer's requirements: a stable and reliable power supply and control system, highest product quality, and prompt and accurate support. The components required for the solution in Singapore came mainly from factories all over Germany. Before shipping to Singapore, an integrated and combined factory acceptance test ensured the flawless operation of the entire system. This called for the early involvement of local Project Managers to ensure maximum transparency in terms of delivery, costs, and logistics. Equally challenging: the diverse cultural and organizational backgrounds of the globally acting project partners, which required a great deal of understanding and constructive collaboration on both sides.

**The solution:
Totally Integrated Power's one-stop shop**

A power supply solution made to order, efficient global project management, and close collaboration were the ingredients of a successful solution. Siemens Energy Management acted as a one-stop shop for Evonik in Singapore, from engineering, fabrication, and delivery to work at the construction site, system integration, and testing and commissioning of the entire electrical network system. The 66-kV gas-insulated switchgear transforms the power from Singapore's power grid down to 10 kV with four power transformers. A further step down to 400 V is provided by 13 dry-type distribution transformers. The entire network is remote-controlled by the substation automation system SICAM PAS. To get this solution up and running, a global project management team efficiently managed the collaboration between Siemens' project partners from various countries, the end client, and the EPCM contractor. Local project management and an experienced project team on site guaranteed transparent and close relations with the customer at every project stage.

**The benefits:
reliable power for honing Evonik's competitive edge**

With Totally Integrated Power, Evonik can count on a holistically developed power supply system that allows the company to strengthen their leading position in a growing market. Siemens supplied products that provide both a reliable and safe power supply and low maintenance effort. Thanks to our early involvement, we were able to support and consult on major decisions concerning budget, planning, and process. The project team started in Marl, Germany, and the ongoing collaboration and great customer relationship throughout the project realization were extended globally: These were major elements of this successful project. The collaboration is continuing to provide optimal support to Evonik. Our global footprint is another key factor in Evonik's reliance on Siemens.

Another success factor was the consistent global account management out of one hand; this involvement continued throughout the entire project, working hand-in-hand with the Project Managers.

Published by
Siemens AG 2016

Energy Management Division
Freyeslebenstrasse 1
91058 Erlangen, Germany

For more information, please contact our Customer Support Center.
Phone: +49 180 524 70 00
Fax: +49 180 524 24 71
(Charges depending on provider)
E-mail: support.energy@siemens.com

Article No. EMCG-B10017-00-7600
Printed in Germany
Dispo 30406
TH 050-160049 DA 0516X.X

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