
Sadara – enabling world's largest petrochemical complex built in a single phase

Improving efficiency, cutting costs and mitigating risks



The challenge

In 2007, a major petrochemical company embarked on a key strategic project to develop and serve the Middle East market with chemical products never before produced in the region. The project aim is to enable the Kingdom of Saudi Arabia to become self-sufficient, reduce imports and boost exports within GCC (Gulf Cooperation Council) and wider Gulf region.

The facts



\$20 Billion project with several integrated systems that will power, automate and manage the entire facility - **26** manufacturing plants



Producing **3 million** metric tons of plastics and high value added chemicals every year



The project involves over **15 different** EPCs, **19** key stakeholders, from **8** countries
1 ABB



The solution - includes state based control philosophy which supports unusual situation management and operational excellence



ABB is central to the success of Sadara

The complete automation and electrical system for Sadara is very complex and is central to the success of the whole facility. ABB being Main Automation Contractor (MAC) touches all levels of the project from concept through long lifecycle of the plant. With its unique combination of domain and digital expertise ABB facilitates much better economies of scale, while delivering cutting-edge optimization that helps keep costs in line without sacrificing innovation. Also, at the heart of everything is ensuring zero accidents and injuries, despite the scale and size of the project.

Building by numbers



70 Operator consoles across
5 control rooms, operating
18 distributed control systems (DCS)



450 servers, **210** workstations,
260 redundant controllers
installed in **890** system/IO cabinets
320 marshalling cabinets



150,000 I/O ~ **30%**
Foundation Fieldbus;
(130,000 hard + 20,000 soft)



Orders received by ABB:
\$600+ million worth of
power and automation



Service magnitude during execution
phase: **275+** ABB people
supporting (180 on site)

The benefits – ABB's main automation contractor (MAC) approach



A **single operator** is able to take on a range of complex, interlinked tasks that are central to the **operation** of facility



Access to **ABB** process expertise



Scalable design allows the facility to meet future needs and integrate new technologies in a **digital environment**



Improved operations: Digital technologies allow for change simulation and standard software for improved **uptime** and **minimal** plant disturbances (Load Evaluate Go)



Improved economies of scale



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