TIHAMA IPP – COGENERATION OF POWER & STEAM FOR SAUDI ARAMCO

SAUDI ARABIA

COMBINED HEAT AND POWER (CHP): AN ENERGY EFFICIENT TECHNOLOGY IN SUPPORT OF INDUSTRIES

CHP is an energy efficient technology that generates electricity and captures the heat that would otherwise be wasted to provide useful thermal energy—such as steam or hot water—that can be used for space heating, cooling, domestic hot water and industrial processes. CHP is typically located at facilities where there is a need for both electricity and thermal energy.

Nearly two-thirds of the energy used by conventional electricity generation is wasted in the form of heat discharged to the atmosphere. Additional energy is wasted during the distribution of electricity to end users.

By capturing and using heat that would otherwise be wasted, and by avoiding distribution losses, CHP can achieve efficiencies of over 80 percent, compared to 50 percent for typical technologies (i.e., conventional electricity generation and an on-site boiler).

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TIHAMA CHP PROJECT – POWER & STEAM FOR SAUDI ARAMCO

The Tihama Combined Heat & Power project comprises four plants at Ras Tanura, Ju'aymah, Shedgum and Uthmaniyah. All are located in the Eastern Province of Saudi Arabia.

Natural gas is supplied by Saudi Aramco and the power and steam generated by the plants are used by Saudi Aramco for its processing plants.

The project (1,063 MW and 2,000 tons/hr steam) awarded in 2003 and commissioned in 2006, was a **landmark project for KSA**, as it was the first large-scale Independent Power Project (IPP) to be undertaken in the Kingdom by the private sector.

In 2012, a 532 MW and 868 tons/hr steam **extension** at Ju'aymah, Shedgum and Uthmaniyah was awarded backed by long-term Energy Conversion Agreements through to 2026.

In early 2020, ENGIE commissioned a similar CHP project, **Fadhili IPP**, which today produces 1,447 tons/hr of steam and 768.8 tons/hr of feed water for Saudi Aramco. The electricity generated by the plant will be equivalent to the consumption of 1.4 million people

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