

## Efficient Use of Energy through Incorporation of a Gas Turbine in Methanol Plant

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**Abstract :** A techno-economic evaluation for efficient use of energy in a large scale industrial plant of methanol is carried out. This assessment is based on integration of a gas turbine with an existing plant of methanol in which the outlet gas products of exothermic reactor is expanded to power generation. Also, it is decided that methanol production rate is constant through addition of power generation system to the existing methanol plant. Having incorporated a gas turbine with the existing plant, the economic results showed total investment of MUSD 16.9, energy saving of 3.6 MUSD/yr with payback period of approximately 4.7 years.

**Keywords :** energy saving, methanol, gas turbine, power generation

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