

Hitachi Group's Activities in Oil and Gas Industry



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Various topics related to energy derived from oil and gas resources have been in the news in recent times. Major subjects often covered by the media include the rapid expansion of the world's population, the growing demand for energy and announcements of investment plans for untapped resources. In addition, the possible exhaustion of fossil fuels by the end of this century has accelerated the development of a wide variety of resources and alternative energy sources while new global challenges have emerged.

On the other hand, the world faces an urgent need to reduce CO₂ emissions in every aspect of energy production and usage because global warming is largely due to the significant increase in CO₂ emissions from fossil fuels such as coal, oil, and gas. In order to address the global issue of radical environmental changes caused by global warming, various measures have been taken all over the world, including the development and introduction of energy saving technologies. Various efforts are made on a global basis to address the conflicting challenges surrounding the oil and gas industry, such as globally increasing energy demand and growing concerns about global warming and the environment.

The oil and gas market covers a wide range of business sectors, extending from upstream oil and

natural gas development through to mid-stream industries such as LNG (liquefied natural gas), GTW [gas to wire, utilizing wellhead power generation and HVDC (high-voltage direct current) transmission] and pipeline transportation, and the refinery industry. These business sectors have an increasing demand for production facilities, power supply equipment and technology development, and provide the Hitachi Group's social infrastructure business with opportunities to make a worthwhile contribution. Meanwhile, it is necessary to take prompt action to reduce CO₂ emissions in the oil and gas industry because this industry has not yet introduced energy saving measures in most of the processes from development through to end-product production. The Hitachi Group has developed and delivered products and systems that provide energy saving technologies to various industries over the years. Energy saving solutions based on this experience and on group synergies will create opportunities to help customers in the oil and gas industry solve environmental issues.

The Hitachi Group has delivered a diversity of products to the oil and gas market, including compressors and other rotating machinery, distribution equipment, gas turbine generators, and utility equipment. In addition to improving the efficiency of equipment and facilities to meet

growing demand and enhancing product value through technology development, the Hitachi Group will, as a total solution partner, make contributions by addressing (1) the trend to introduce electric motor drive in order to improve plant utilization and maintainability and to make plant designs more flexible, (2) the need to introduce all-electric systems in response to the increasing demand to develop small- and medium-sized gas fields and to explore the subsea resources, (3) the need to introduce inverters and to use electrical systems to drive mechanical equipment to save energy and reduce CO₂ emissions

in new and existing plants as an environmentally friendly measure, and (4) the need to develop energy saving systems across entire plants.

This issue of the Hitachi Review outlines some of these activities conducted by the Hitachi Group. This industry requires collaboration between customers, engineering companies and manufacturers over long periods of time during which these participants identify local needs in particular plants, develop technologies, and introduce products and systems. The Hitachi Group will meet these market needs by taking advantage of its group synergies.