

24th World Gas Conference

## The Role of Natural Gas in Climate Change Mitigation

*This will be one of the main issues to be addressed during the Strategic Panel "Natural Gas and the Sustainability Question: How Many Answers can we Provide?" at the 24th World Gas Conference*

Climate change is a key challenge for the global community and, in this context, natural gas may be part of the solution to mitigate its effects.

Furthermore, the world faces the additional challenge of supplying a total population of 6.7 billion (with a projection of 9 billion by 2050), who will be in need of energy to develop their economies and maintain an adequate quality of life.

The favourable attributes of natural gas have led to its consideration as the most appropriate energy source for the combined solution of these challenges.

In effect, its advantages in terms of efficiency and emissions, the potential of the gas industry to combine supplies with some of the renewable energy sources, as well as the possibility of using its infrastructure and know-how to contribute to CO<sub>2</sub> mitigation have placed it in an ideal position to contribute to a sustainable energy future.

In this context, during the 2006-2009 triennium, a special study was conducted on sequestration and mitigation of CO<sub>2</sub> and other contributions of the natural gas industry to reduce the impact on climate change, the findings of which will be delivered in the **Strategic Panel "Natural Gas and the Sustainability Question: How Many Answers can we Provide?"** at the 24th World Gas Conference.

The Panel shall be a forum for discussion with the following environmental and climate change specialists:

Pablo Canziani (*Intergovernmental Panel on Climate Change – IPCC*), Juan Carlos Villalonga, Political Director (*Greenpeace Argentina*), Jayant Sathaye, Senior Analyst for Climate Change and Sustainable Development (*Lawrence Berkley Laboratories*) and Olav Karstad, Senior Advisor on CO<sub>2</sub>, Technology and New Energy (*Statoilhydro*).

### **A few considerations about the future for natural gas**

Natural gas is considered the cleanest fossil fuel. Indeed, it helps reduce the climate change footprint owing to its capacity to substitute coal and oil. Its importance may grow in upcoming decades by:

- Expanding the geographical availability of natural gas for customers seeking low-carbon solutions
- Developing technology and marketing strategies that promote the use of natural gas in sectors such as transportation (by land and sea)
- Co-operating with renewable energy sources such as biogas and intermittent sources such as solar and wind
- Utilising the expertise and depleted reserves of the gas industry with the purpose of developing a geological space for the storage of carbon dioxide (CO<sub>2</sub>), which represents a global climate solution

### **About natural gas**

- Natural gas, the cleanest fossil fuel, is a highly efficient form of energy. It is mostly made up of methane. A simple chemical composition of natural gas consists of one molecule of carbon atoms and four of hydrogen atoms
- When methane is burnt completely, the outcome of its combustion is one molecule of carbon dioxide and two molecules of water vapour
- The natural gas delivered to customers is free from impurities, less chemically complex and, thus, its combustion is more environmentally friendly compared to other fuels
- In most applications, natural gas produces close to zero sulphur dioxide (the main precursor of acid rain), low levels of nitrogen oxides (the main precursor of smog) and low levels of particles in suspension (which may affect health and visibility) compared to the levels produced by oil and coal
- Natural gas is highly efficient. Close to 90% of the natural gas production is delivered to customers as usable energy. Conversely, an average of only 27% of the energy converted into electricity ever reaches consumers