



**Can the Customers Afford to Use Gas?**



## **Challenges in Industrial Utilization**

**WOC 5 - Study Group 5.1**

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## Industrial Utilization – Past, Present, and Future



### ■ Past

- Natural gas is considered as the fuel for economic growth
- Customers, large and small, adopt natural gas
- Natural gas becomes an environmentally friendly alternative... that is there to stay

### ■ Present

- Liberalization has led to a “climate change for natural gas”
- Winds of environmental compliance, energy efficiency, and cost reduction are blowing through the industrialized world

### ■ Future

- Considerable challenges ahead for industrial utilization
- The interest of the natural gas business in research and development for industrial utilization is difficult to visualize and to sustain



## Challenges in Industrial Utilization



- **Rules of the modern industrial game**

- Maintain a license to operate subject to tight environmental rules
- Steady rise in energy prices
- Great demand for flexibility
- Complexity of the energy market, multiple fuels

Main trend: rising energy prices are there to stay

- **Challenges identified by the gas business**

- Gas quality issues due to flexibility of supply and other gases
- Focus on energy management in order to rationalize energy cost

- **Challenges identified by industry**

- High investments required to implement energy efficiency projects
- Difficult to design energy systems tailored to the production process



## Challenges in Industrial Utilization - Continued



### ■ Weaknesses

- Lack of visibility of natural gas technology
- Lack of funds for research and development
- Decreasing involvement of energy companies
- Short-term vision of energy companies

### ■ Opportunities

- Trends in technology: miniaturization, new materials, Stirling-engines, dual-fuel applications
- Collaboration between research institutes
- Focus of the government on CO<sub>2</sub>-reduction

Main question:

How should the gas business get its act together in the liberalized world?



## Challenges for the Gas Business



- The focus of the gas business is turning away from its “bread and butter” market towards niche markets such as natural gas vehicles and micro-CHP
- If energy prices rise further, there is a risk that the gas industry loses industrial customers to other fuels, such as coal, or to other parts of the world
- Due to unbundling, research and development in industrial utilization falls in between newly-formed, legally separate companies
- Only the biggest end-users can take up research and development of natural gas applications. The process industries as a whole lack expertise in natural gas and they are also focusing on short-term cost



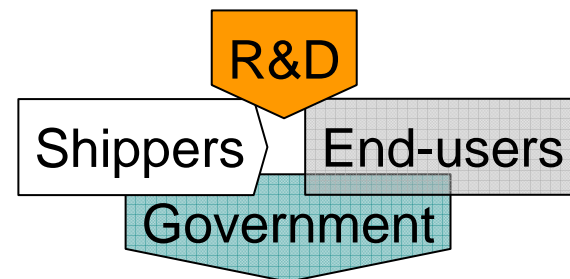
## Round Table Discussion



**Discuss mechanisms to preserve the climate for industrial utilization**

**Panel members:**

- An industrial end-user: Dr. Arjan van den Hoogen, CORUS
- A shipper/gas-merchant: Mr. Guy Verkest, Distrigas-Suez
- A researcher: Dr. Marc Florette, Gaz de France
- An equipment manufacturer: Mr. Tom Robertson, The North American Manufacturing Company





## Statements for Discussion



Existing gas technologies are mature. If no efforts are done, they will become obsolescent and we will lose valuable know-how.

How can we manage this?



## Statements for Discussion



Does R&D provide the answer?

In that case, we have to determine what type of organization, public or private, would be best equipped to carry out research and development.

Moreover, some fund-raising scheme will have to be devised.





## Statements for Discussion



What is the best energy mix for industrial customers?

What is the role of the gas business as an energy company?



## Statements for Discussion



Energy efficiency is a matter of strategic importance because it determines the competitiveness of the region, nation, or trade block.

How can we help our energy-intensive industrial activities in their race for the lowest production cost?



## Statements for Discussion



Who is going to be responsible?



**Thank you for your  
attention !!**