# "Gas to Power - Global Outlook"

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### The Gas Paradox

Historically, Natural Gas was too noble to be "wasted" in a power plant

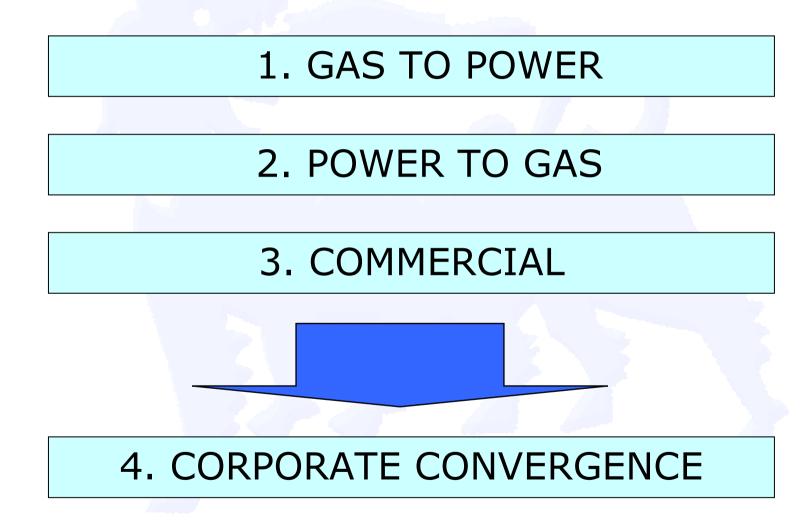


New technology plants have become "noble", reaching 55% efficiency

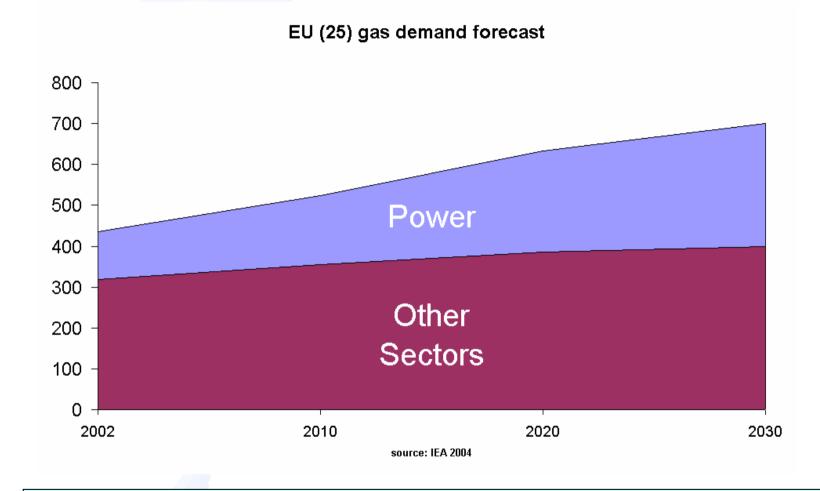


CCGTs will account for 50 to 80% of growth in the European gas market

## **Gas and Power Convergence**



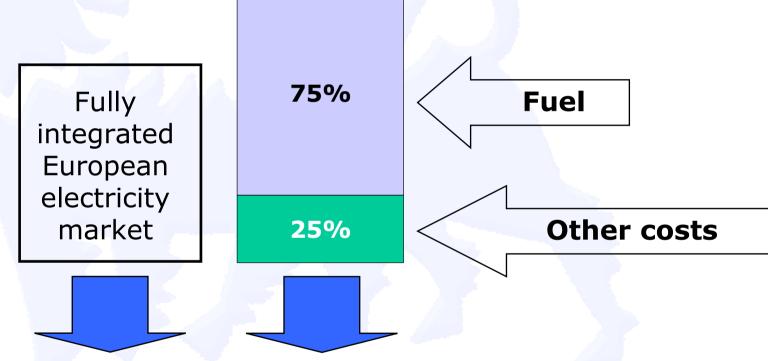
## 1. Gas to Power Convergence



The electricity market is over-reliant on gas

## 2. Power to Gas Convergence

Cost of a kWh produced with a typical CCGT



Gas price and flexibility are crucial for any CCGT operator

## 3. Commercial Convergence

### **Supply Side**

- Power Producers ask for:
  - indexation to power
  - volume flexibility for arbitrage
- Gas Sellers:
  - develop more sophisticated risk management tools to cover price risk
  - transfer inside contract schemes the cost of flexibility

convergence

# Retail Sales' Side ("Dual Offer")

- Potential opportunity to double the sales per customer
- Increase of life-time value
- More efficiency in the "cost to serve"



# 4. Corporate Convergence



# **Conclusion 1**



# The electricity and gas markets in Europe are increasingly over-reliant upon each other

#### **Volatility**

- •Shift towards peak consumption (most CCGTs are used for mid to peak production)
- •Small changes in electricity prices will have big effect on gas consumption
- •Small changes in gas prices will influence pool merit order

#### **Gas pricing**

- Pressure to move from proxies to highly volatile pool prices
- •Risk of a "loop" in pricing mechanisms
- Continuous arbitrage opportunities

#### **Infrastructure**

- •Risk of overbuilding of CCGTs in booming cycles
- Pressure to invest in more "stable" technologies (Nuclear/Coal)

# **Conclusion 2**



# **Corporate convergence will continue**

Local

- Gas and power distribution networks' overlap
- Dual offer

**National** 

- National champions
- Synergies
- Gas and power integration

**International** 

- Supernational company vision
- Growth in new markets
- Stronger EBIT

## Corporate convergence will continue

"Creates a leading world class integrated gas and power company with a customeroriented business model / Addresses regulatory concerns, making the Spanish energy sector more competitive / Strong and balanced positions in high growth markets / Significant synergy potential" (Tender offer for 100% of the share capital of Endesa by Gas Natural - Key transaction benefits - "Creating a leading, fully integrated global energy company" - Corporate presentation, September 2005)

"The combination of E.ON and Endesa will create a leading competitive player with operations in all key European countries. It represents an important step towards creating a single European energy market." (W.H. Bernotat, E.ON's CEO, announcing E.ON's cash offer for Endesa, February 2006)

"The plan to merge SUEZ and Gaz de France derived from the shared objective of becoming a major player in the energy and environment sector.

The work accomplished jointly by SUEZ and Gaz de France teams over last month has already resulted in identifying more than 1 billion euros in synergies. The upward revision confirms our conviction that this merger is based on a sustainable industrial project which will create significant value for shareholders, clients and employees of the two groups." ("MERGER PROJECT" - joint press release SUEZ/Gaz de France - May 2006)