Securing Gas Supplies to Europe:
Role of Energy Companies & Regulatory Authorities

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LEADING THE ENERGY CHANGE

The IEA's WEO 2008 estimated that from 2007 to 2030, Europe needs to invest 3.1 $ Trillion in its energy markets *(0.4 $ Trillion in gas)*

….with an increasing need to secure new supplies for Europe

- Indigenous gas production in Europe is declining
- Some of Europe’s existing coal and fuel oil power plants will be decommissioned around the 2015 horizon (due to Large Combustion Plant Directive and some plants reaching the end of their life), which would increase the need for gas in Europe’s generation mix;
  - Some of the existing old coal-fired and peaking power plants will be decommissioned (mainly in UK and France)
    - Up to 6 GW of CCGT to be built by 2015 to replace coal generation in France
    - ~ 9 GW of coal generation capacity in UK to be replaced by CCGTs by 2015
  - ~ Two thirds (~30GW) of the generation capacity under construction in Western Europe is gas-fired
- EDF Group fleet of CCGTs
  - Edison has 8.5 GW of CCGT installed capacity *
  - EDF plans to develop 3 in France, 3 to 6 in Belgium, 1 in the Netherlands and 1 in UK
- Despite the uncertainties in gas demand
  - …the outturn demand level will need to be supplied
  - ...investments need to be made now to supply it

* includes Edipower (50% Edison)

Role of Energy Companies

Utilities are…

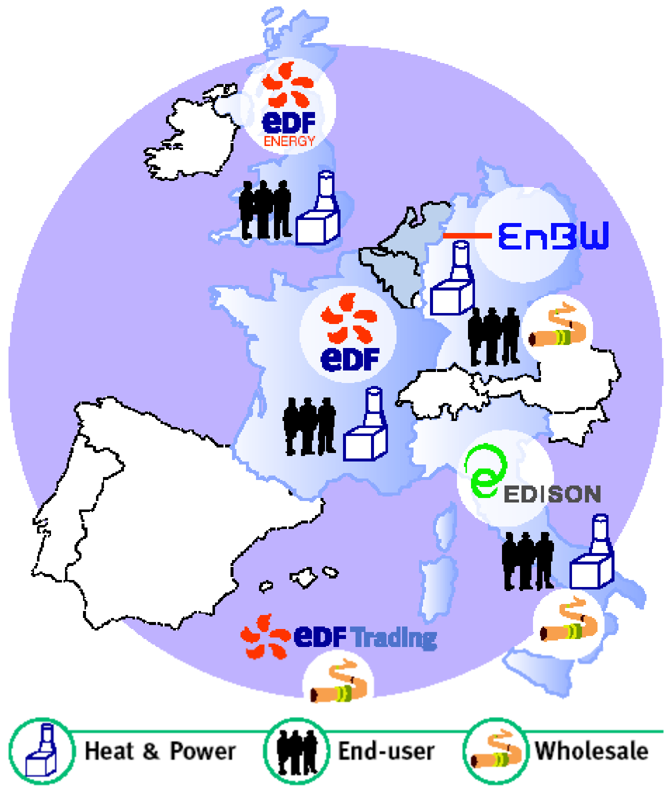
….aware of the need to invest in Europe's energy industry

….are ready to take on the responsibility to secure gas supply to Europe by investing in gas infrastructure:

- Creating new entry points into Europe
  - To provide new routes to Europe and access to new sources of supply
- Developing flexibility assets
  - To offset declining indigenous European gas production swing
  - To manage increasing reliance on imports, especially LNG, in a global market
  - To improve the flow of gas around Europe
- Developing efficient use of CCGTs in relation to energy efficiency

EDF has a responsibility to invest in gas infrastructure

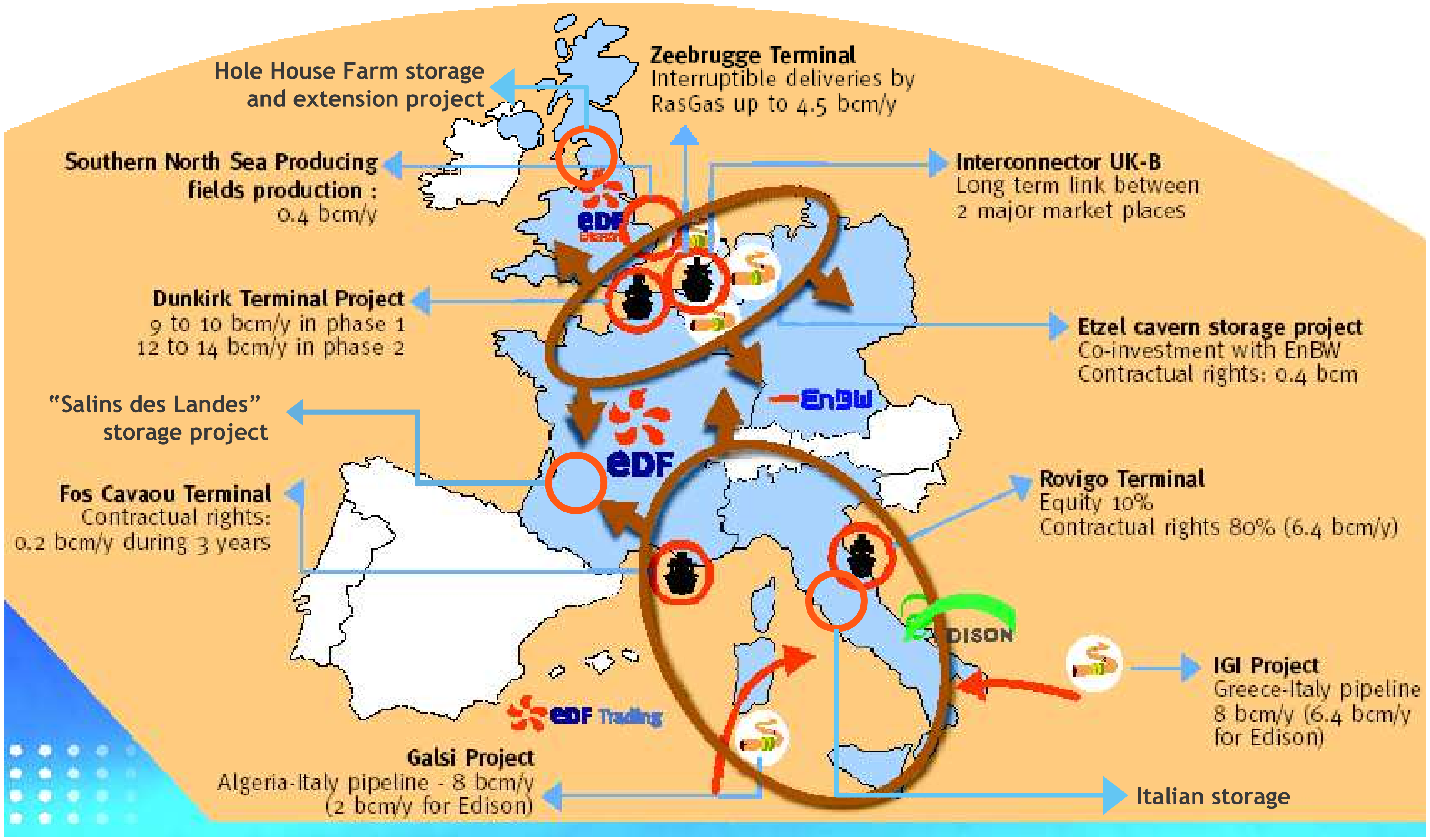
- EDF's gas portfolio was **26 bcm in 2008**
  - Selling gas to end-user customers and to supply its own gas-fired power plants
  - Active in the 4 main European markets



- Driven by new demand for gas, EDF's gas portfolio is set to grow to **45 bcm by 2015** *(~7% of European demand)*

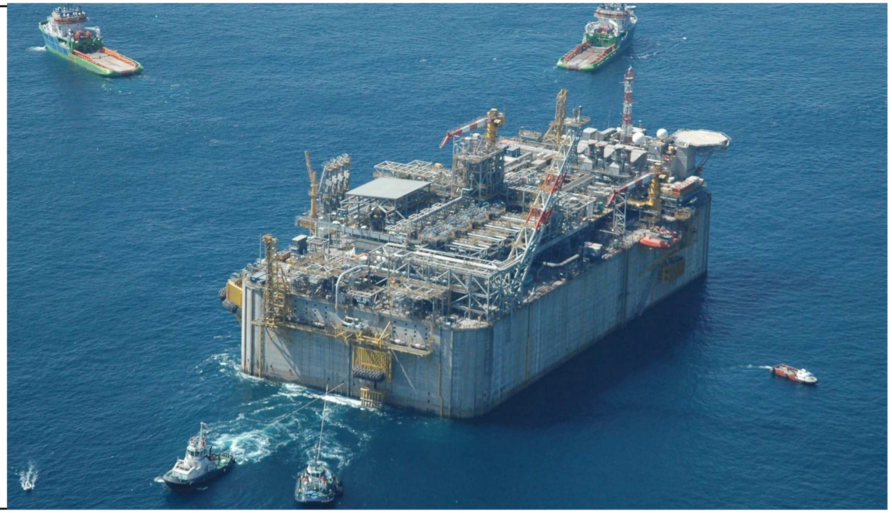
- EDF has recognised its responsibility to meet this new demand by creating and developing new infrastructure

EDF's European gas assets and projects



EDF Group in the European gas market

Rovigo LNG re-gasification terminal



Dunkerque LNG re-gasification terminal

Role of Regulatory Authorities

- Utilities recognise their role of meeting new gas demand by developing new entry points and new flexibility assets that are connected to the European regulated network

- Utilities need the help of Regulatory Authorities to ensure that the European regulated network works efficiently

- An efficient European regulated network is key to achieving security of supply for Europe allowing
  - Gas Index
  - Network resilience to supply disruptions (gas can flow freely to where it is most needed)

Role of Regulatory Authorities

- Enforce the regulatory rules across Europe
  - To avoid the “Contractual” capacity constraints, which further compound limited “physical” capacity constraints
  - To apply “Use it or lose it” capacity regimes, which remove “network islands” and allows gas to move freely based on price signals
- Create regulatory framework encouraging network integration and infrastructure investments
  - To reduce the number of market zones
  - To avoid “regulatory” capacity constraints by harmonising regulatory frameworks of existing networks
  - To integrate some of the existing transit pipelines that remain separate from local / regional networks
  - To avoid delays in infrastructure projects related to regulatory issues
- Provide third party access to new infrastructure
  - To avoid dominant positions and remove “network islands”
- Reduce uncertainties and reinforce Europe’s attractiveness by facilitating the emergence of a European gas index

The need for a European Gas Index

- Now is the right time for creating a European Gas Index, because the historical rationale for oil indexation is disappearing

- Europe's existing hubs have not, to date, provided the solution for the gas to flow freely to where it is most needed

  - Low physical transit volumes in comparison to overall European gas demand
  - Very poor market depth with low levels of liquidity and churn ratios

- The emergence of a European gas index would provide

  - Greater visibility on the « real » value of gas in Europe
  - Greater understanding and predictability of gas demand and, therefore supply needs for Europe
  - Greater certainty for physical delivery of gas, allowing investments to be made

Summary

- The financial crisis has deferred a number of investments in the energy industry

- To achieve "Security of Supply for Europe" by tomorrow requires:
  - Utilities to make the necessary investments today
  - Regulatory Authorities to create the framework that allows an efficient regulated European network to be formed and these investments to be made