

The challenges of a changing international energy market

Vienna, 8th November 2007

The interface between Electricity and Gas Markets

Roberto Potì

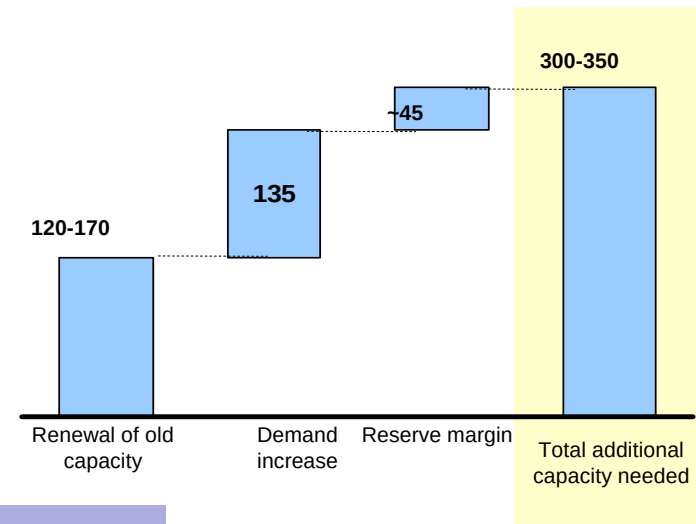
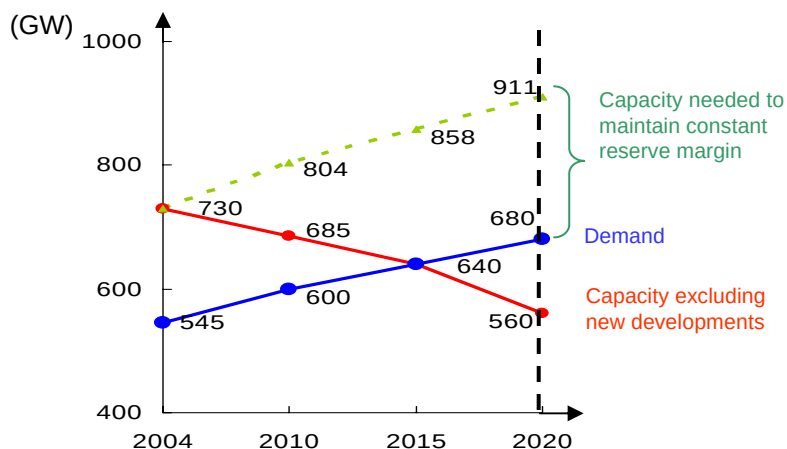


Agenda

- 1. Electricity Market**
- 2. Gas Market**
- 3. Edison's investments in electricity and gas**

Meeting Power Demand

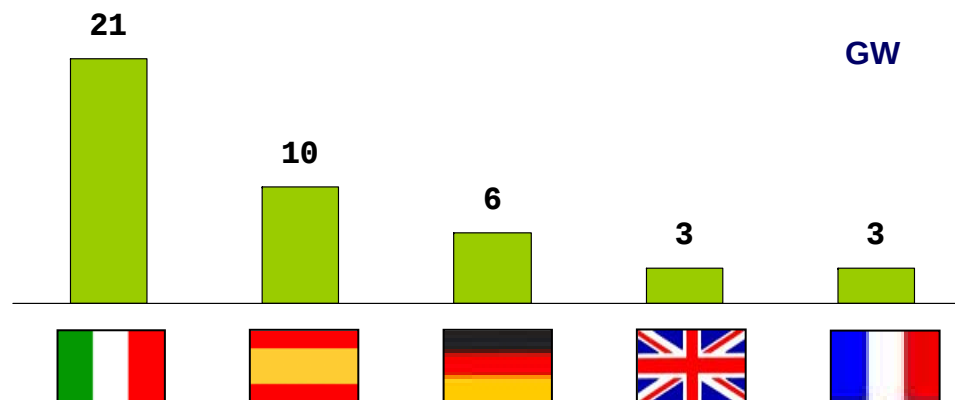
Need for 300-350 GW of new capacity across Europe over the next 15 years



Source: IEA, Platts

Estimated investments for 250-300 bln €

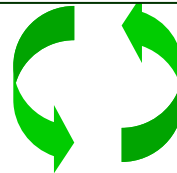
Italy is the major investor in additional capacity in Europe in 2002-2010



European Energy Policies: The View Of An Operator

COMPETITIVENESS

The internal market needs to be further opened through liberalisation and competition, but energy has to remain affordable.



SECURITY OF SUPPLY

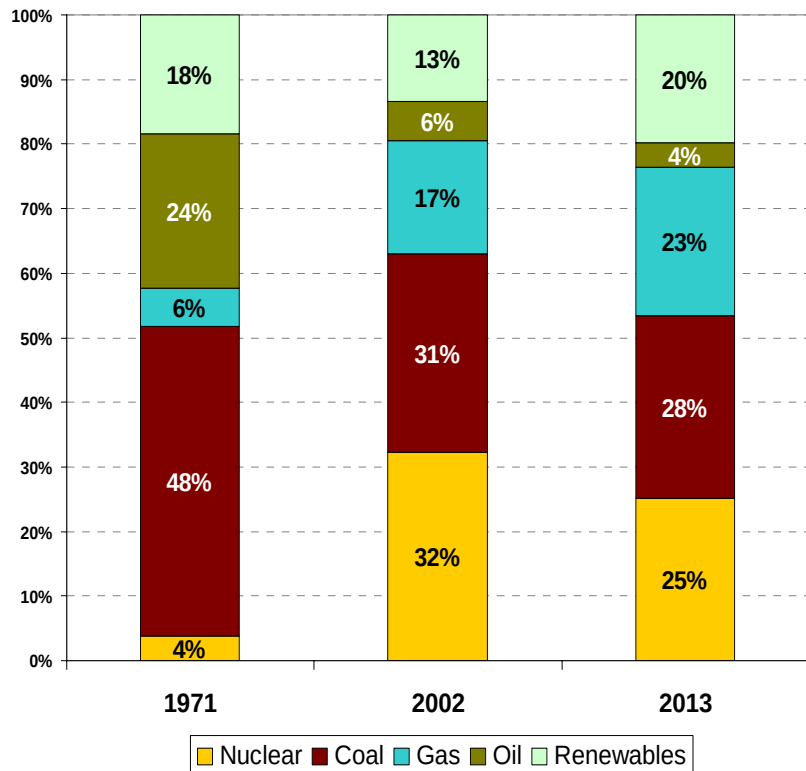
New investments are strongly needed, and the negotiation power of EU companies vis-à-vis external suppliers has to be safeguarded.

SUSTAINABILITY

New targets impose a strong technological effort, without prejudice on security of supply and choosing the most cost-effective mechanisms.

Europe needs more Power

FUEL MIX FOR POWER GENERATION



Eu15, Source: IEA, Edison estimates

EMISSIONS BY FUEL

Energy sources	Technology considered for the cost estimate	GHG emissions (Kg CO2Eq/MWh)
Natural gas	Open cycle gas turbine	440
	CCGT (Combined Cycle Gas turbine)	400
Oil	Diesel engine	550
Coal	PF (Pulverised Fuel with fuel gas desulphurisation)	800
	CFBC (Circulating Fluidised Bed Combustion)	800
	IGCC (Integrated Gasification Combined Cycle)	750

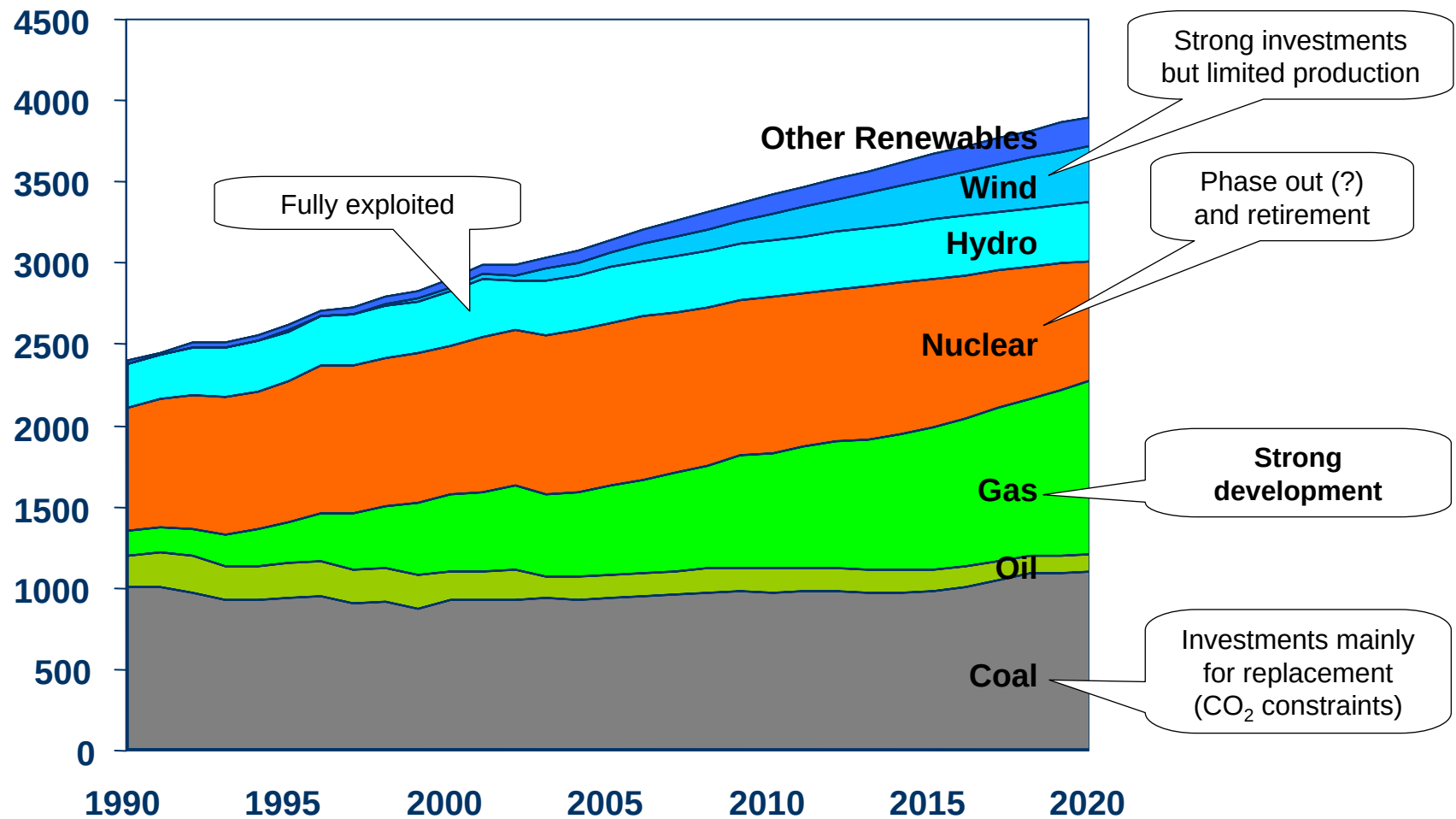
Source: EC DG TREN, IEA, IAEA

Meeting climate change targets requires a sound shift in the overall energy mix towards **less polluting technologies**. **Renewables** can play an important role but they have to be complemented by a bulk of thermal power generation.

Nuclear could provide the **best option** in the longer term, but **gas** is the **most viable way** to cover the short-term effort. This is why gas consumption will increase sharply throughout Europe and gas will become the **only fossil source increasing its share of demand in the EU**, driven up by environmental constraints on **power generation**.

European Electricity Generation, 1990-2020

TWh, EU 25



Source: International Energy Agency

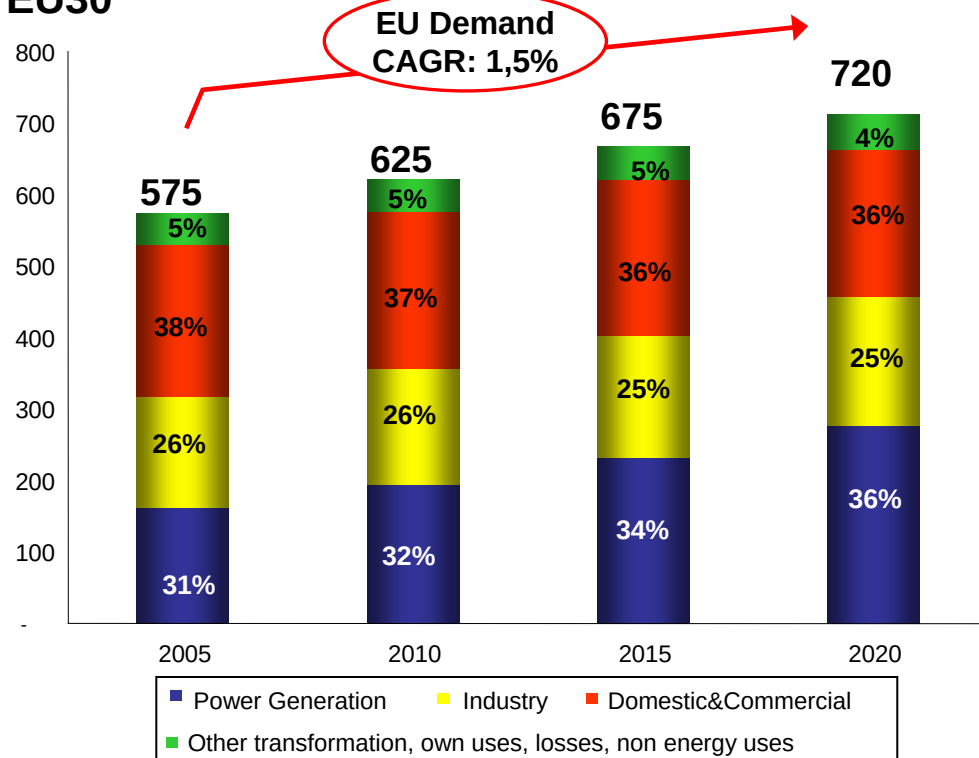
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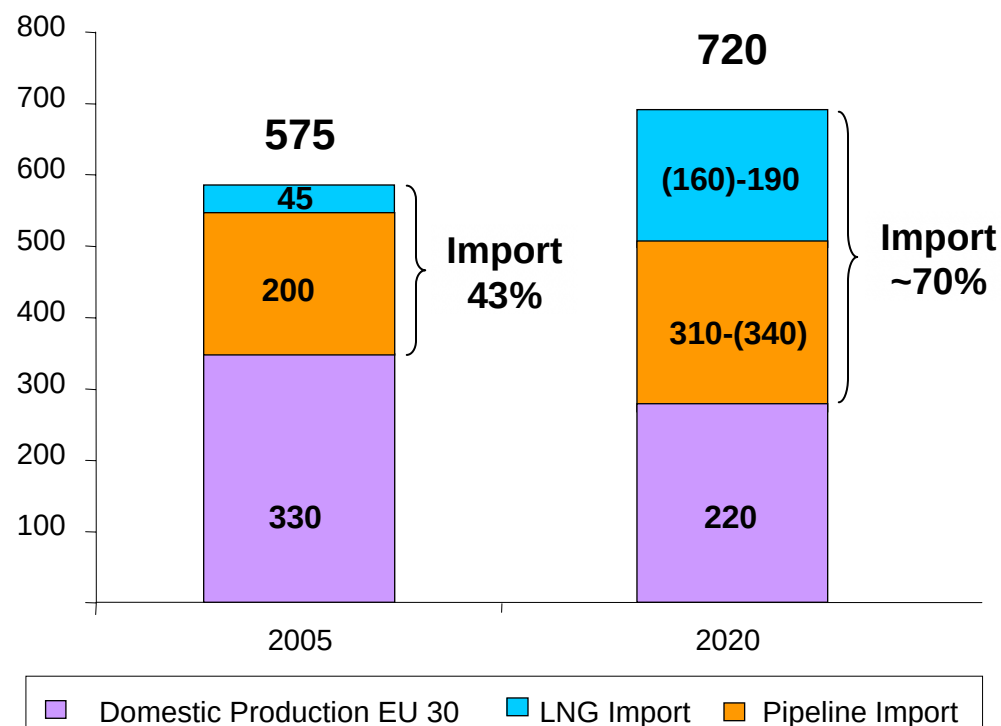
European Gas Market

Strong Consumption Growth (Bcm)

EU30



Gas Supply in Europe (Bcm)

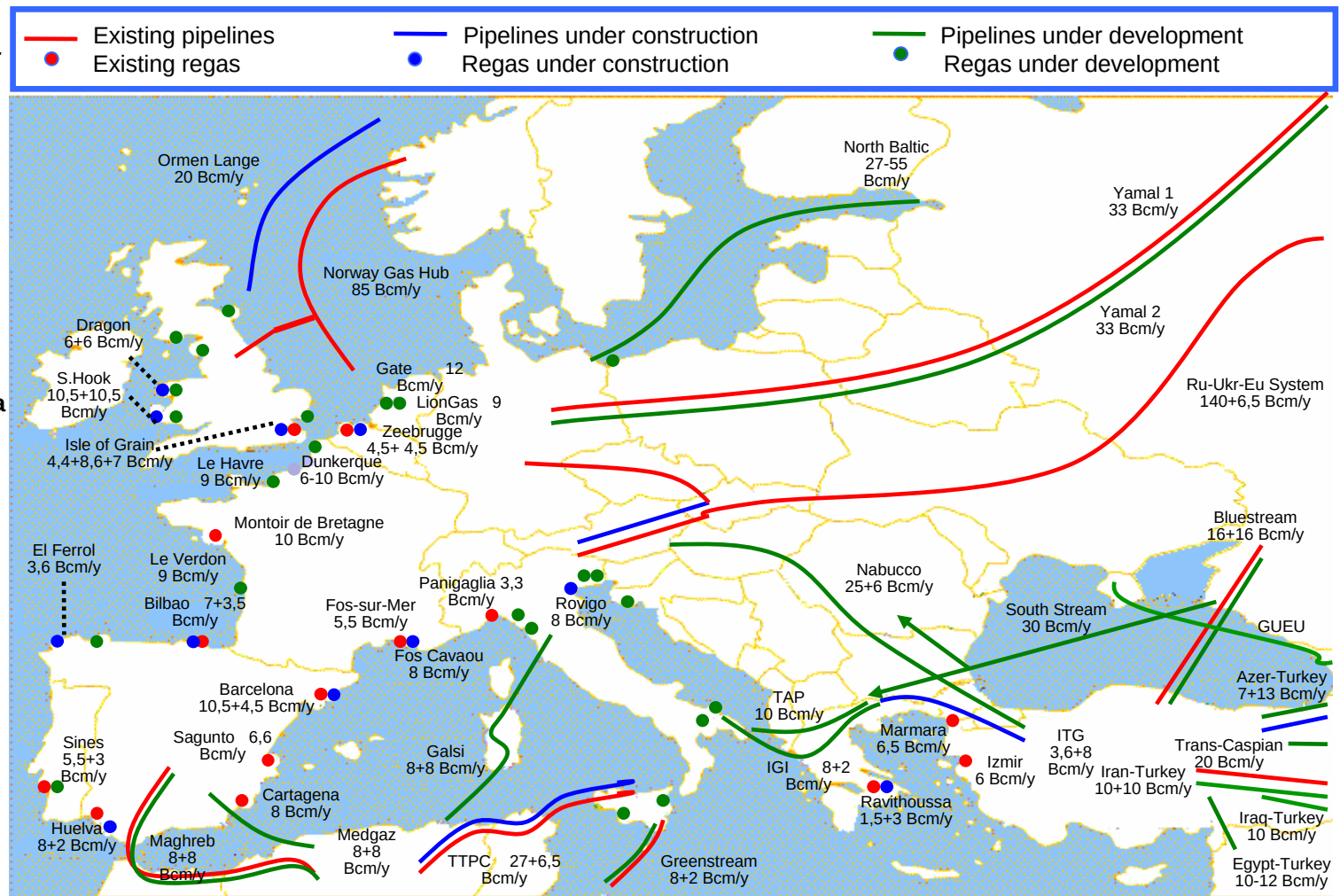
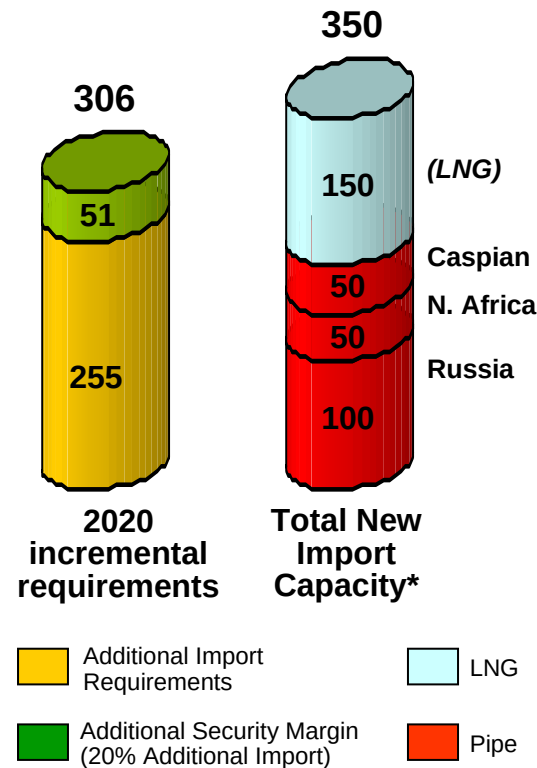


- **Power generation** is the **main driver of the gas demand increase** in Europe (~60% of total increase)
- **Production** in Europe is **expected to decline** from 330 to 220 Bcm by 2020 (mainly in UK and Netherlands)
- **Import** from non EU30 countries **will more than double**.
- **Need to invest in new import infrastructures.**

- **Import 2005: 245 Bcm**
- **Import 2020: 500 Bcm**
- **Additional import requirement 2005-2020: 255 Bcm**

New import infrastructures

New Import Infrastructures (under construction/ development or announced)



In 2020 EU30 gas demand will be covered provided that the infrastructures under development/announced are carried out and the relevant supplies are found.

PROPOSALS FOR INCREASING EU SECURITY OF SUPPLY

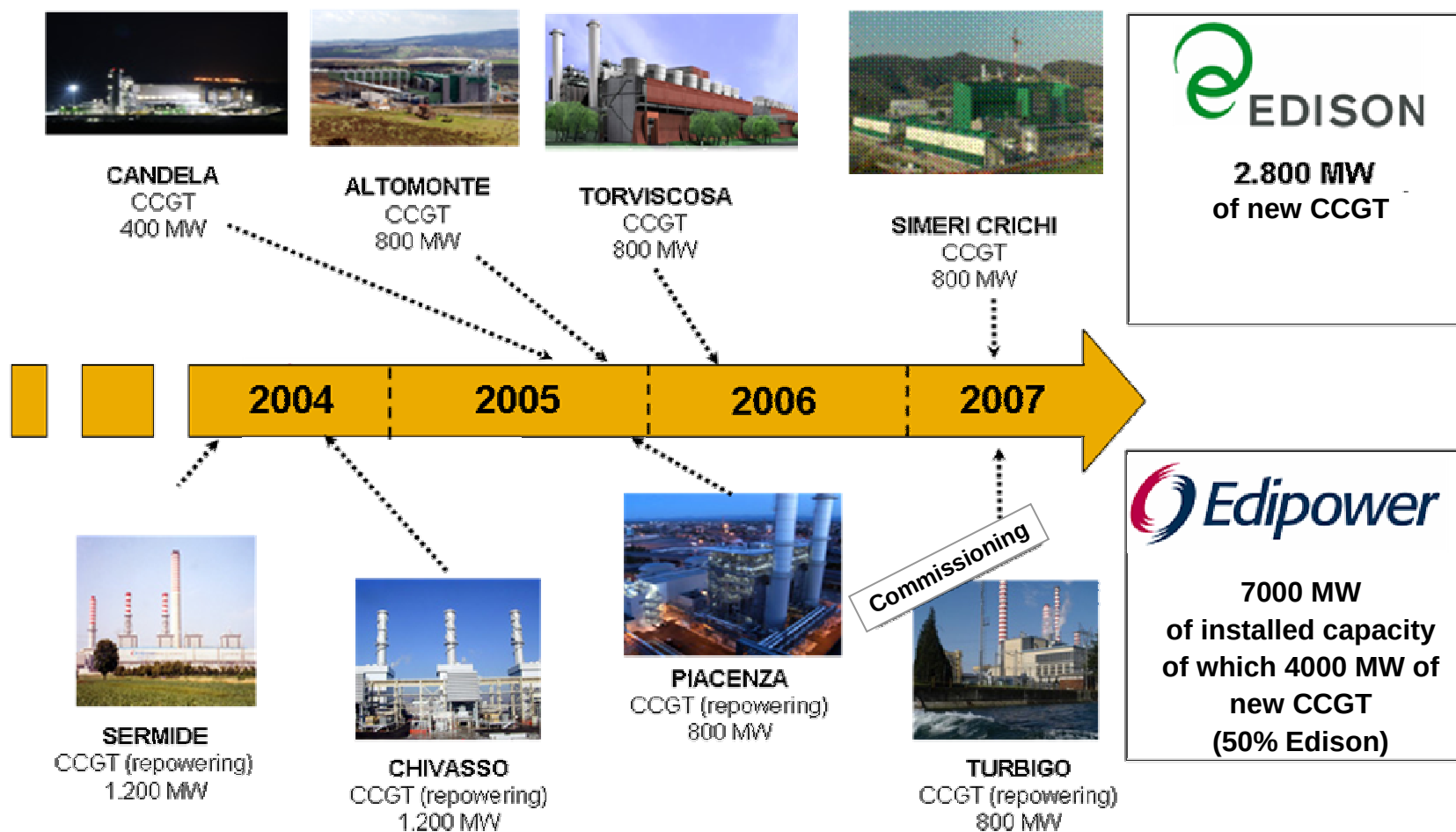
POLICY MAKING ITEMS

SECURITY OF SUPPLY	REGULATION ON MARKETS and OF CROSS BORDER	- To enhance coordination among national TSOs in order to maximise cross-border capacity and harmonize grid development plans; - To impede capacity hoarding by implementing UIOLI and secondary market provisions	COMPETITION
	REGULATION ON INVESTMENTS	- To guarantee Long term stability of investments regulatory framework in order to allow completion of import projects under development; - To safeguard current TPA exemption procedures in order to allow also shippers to develop new import capacity;	
	CLIMATE CHANGE AND ENVIRONMENTAL POLICIES	- To Identify a common framework with producers allowing the development of new gas productions to be destined to EU - To promote inter-governative cooperation mechanisms to grant investment possibilities in renewables and energy efficiency for gas investors	

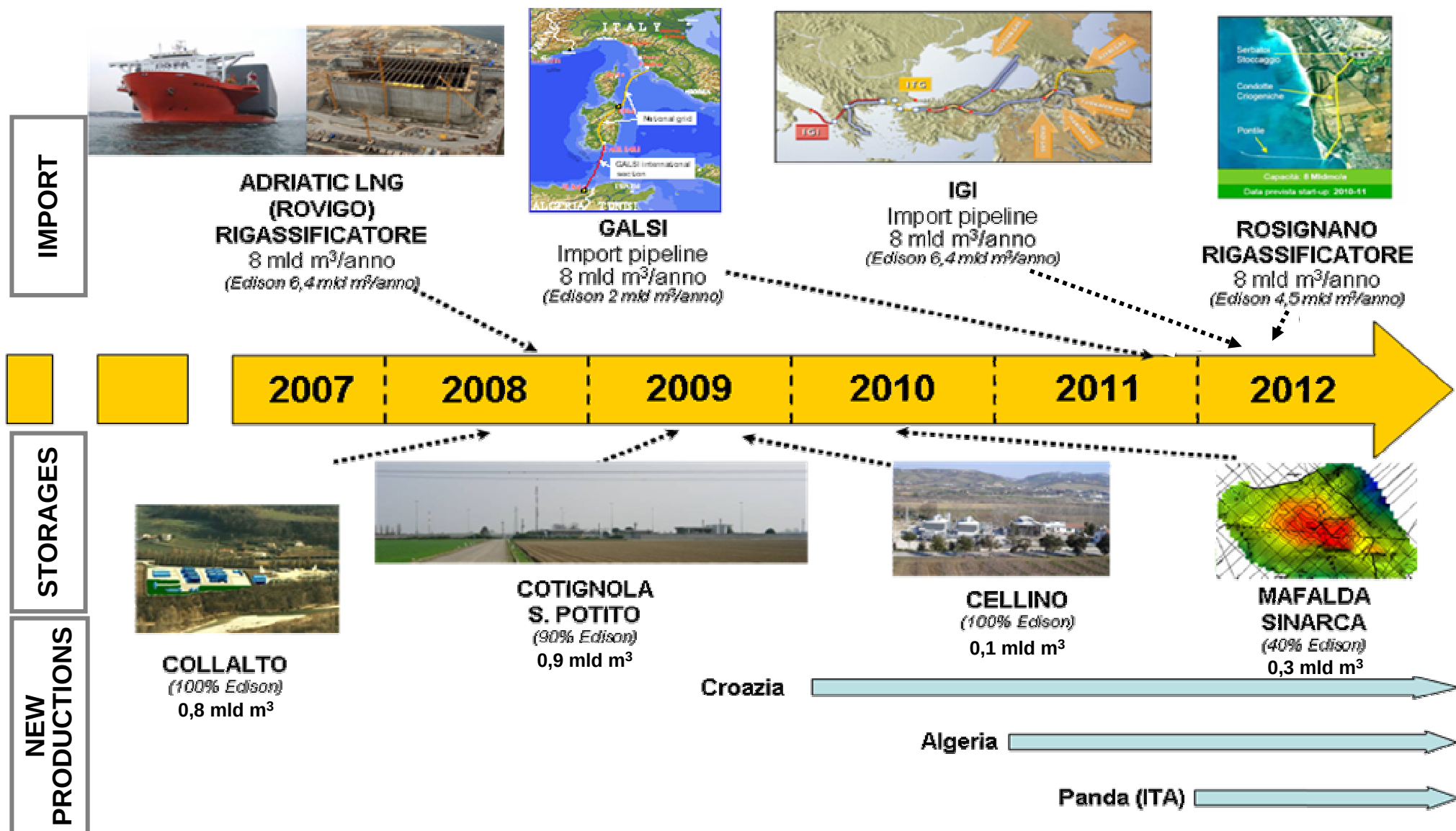
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Edison's investments in electricity sector



Edison's investments in gas sector



ITGI Project

The Interconnector Greece-Italy “**IGI Project**” represents the missing link of the Turkey-Greece-Italy Corridor “**ITGI**”, allowing the flow of Caspian and Middle East gas (approx. 20% of world’s gas reserves) to Italy and western Europe via Turkey and Greece.



The “**ITGI Corridor**” project comprises the upgrades on the **Turkish Grid** (extended from eastern to western borders), and the realization of the **ITG Project** (Interconnector Turkey-Greece, that is coming on stream within yearend) and of the **IGI Project**.

A PROJECT OF EUROPEAN INTEREST

The ITGI Project is listed among TEN-E European priority projects

ITGI Project : A European Best Practice

The ITGI project represents a **European best practice** in project development, addressing key issues of European energy policies, in a **cooperative framework** with producers and transit countries:

SECURITY OF SUPPLY

A **strategic project**, diversifying gas routes and supply sources, within an integrated development perspective, allowing for new resources to find their way to the market.

COMPETITIVENESS

Innovative project structure which promotes competition and market liquidity

SUSTAINABILITY

Environmental Impact Assessment will ensure **full environmental compliance** and strong **community support** has been consolidated; environmental stakeholders on-board for monitoring

SIGNIFICANT FRAMEWORK INNOVATION

The ITGI Project provides an innovative development scheme of new import capacity to the European Market, as it comprises the following challenges:

Development of a transit regime through Turkey: The Intergovernmental Agreement executed by the Turkish, Greek and Italian Governments on July 2007 identifies a transit regimes that: is not discriminatory in terms of ownership, origin or destination of transited volumes; foresees that transit Tariff will be non-discriminatory and based on operational and investment cost; foresee that transit volumes should also contribute to Turkish while guaranteeing long term continuity of transit flows

Development of a transit regime through Greece: Access to the Greek system capacity will be managed through regulatory provisions consistent with EU regulation on gas transmission (1775/05)

Exemption from TPA obligations on Poseidon Pipeline: Access to the Poseidon Pipeline Capacity is granted by the TPA exemption decision (June 2007) that securing project financiability while allowing for Third Party Access on additional capacity via an Open Season proceed.

PAVING THE WAY FOR A MUCH NEEDED NEW INTERNATIONAL 'UMBRELLA AGREEMENT'...