



The Supplier-of-Last-Resort in the context of the opening of the gas market in Europe

Working Group – Supridor de Última Instância

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Natural Gas in Europe, a Specific Context

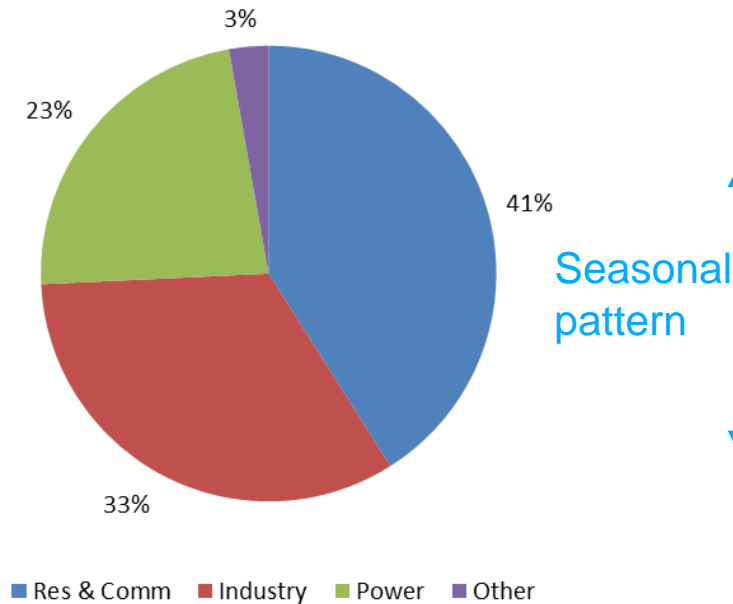
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Natural gas consumption in EU and Brazil

First big difference: heating and residential consumption in EU

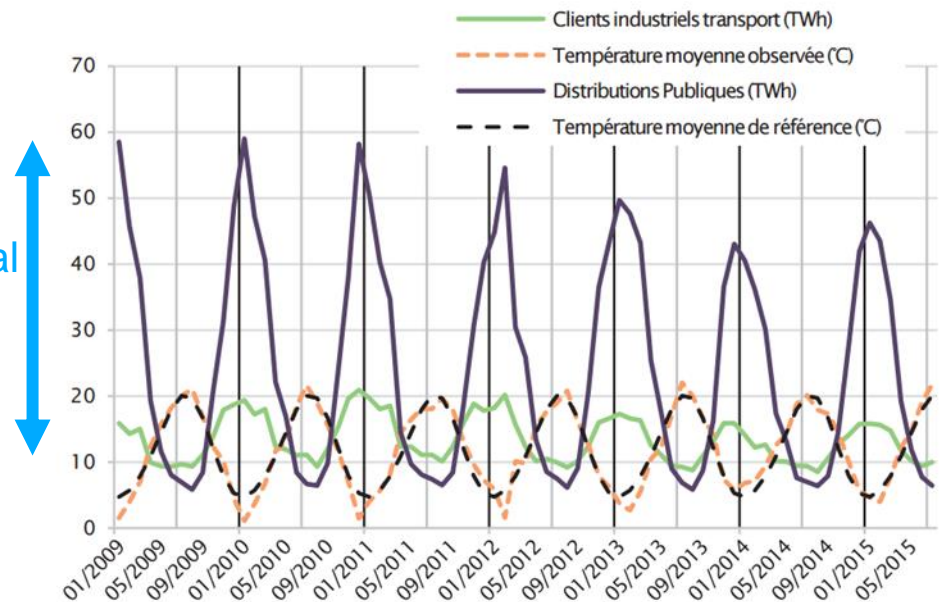
Natural gas consumption EU28 : 420 Bcm

Natural Gas Consumption per sector in EU 28



Source : Eurogas Statistical Report 2015

Seasonality of gas consumption in France

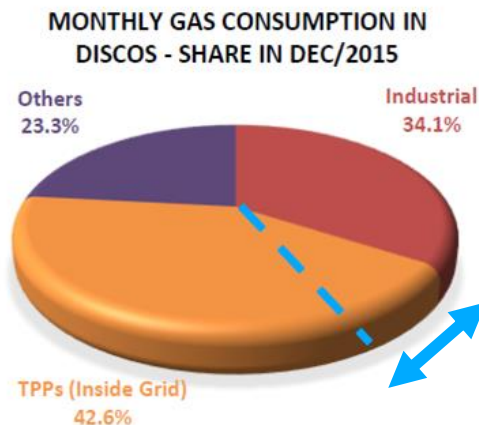
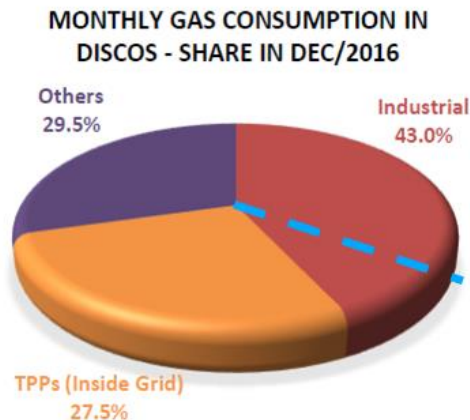
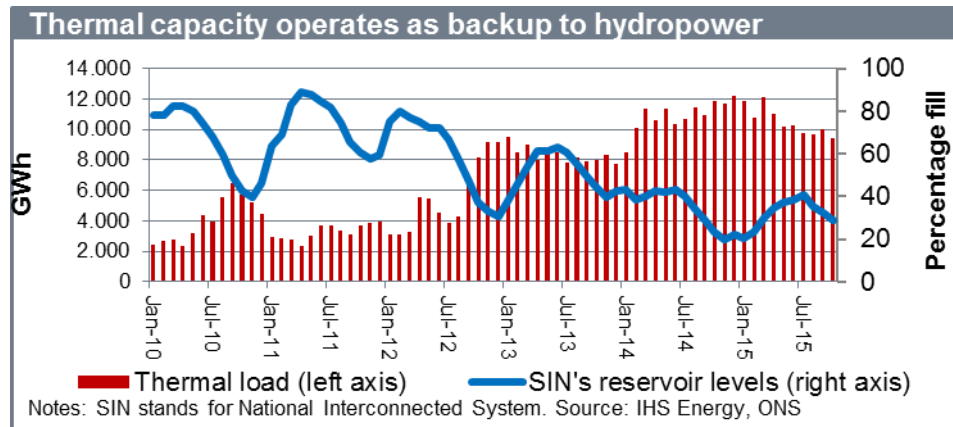


Source : GRTgaz (2015)

Natural gas consumption in EU and Brazil

Second big difference: volatility of the power generation in Brazil

Natural gas consumption Brazil: 40 Bcm



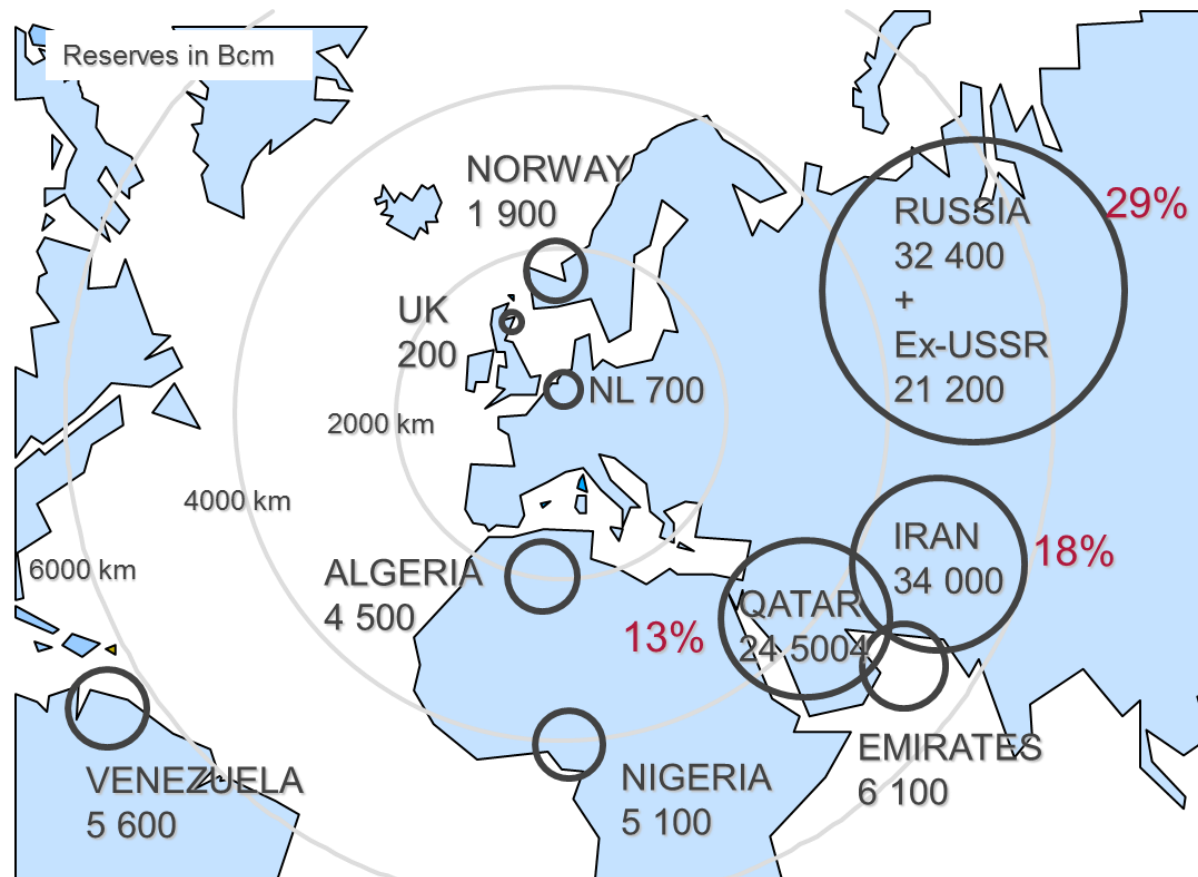
Source : data ABEGAS, elaboration ENGIE

Strong concentration of gas reserves... outside Europe

High and increasing dependency of Europe

Annual consumption EU 28 ~ 400 Bcm and production ~100 Bcm

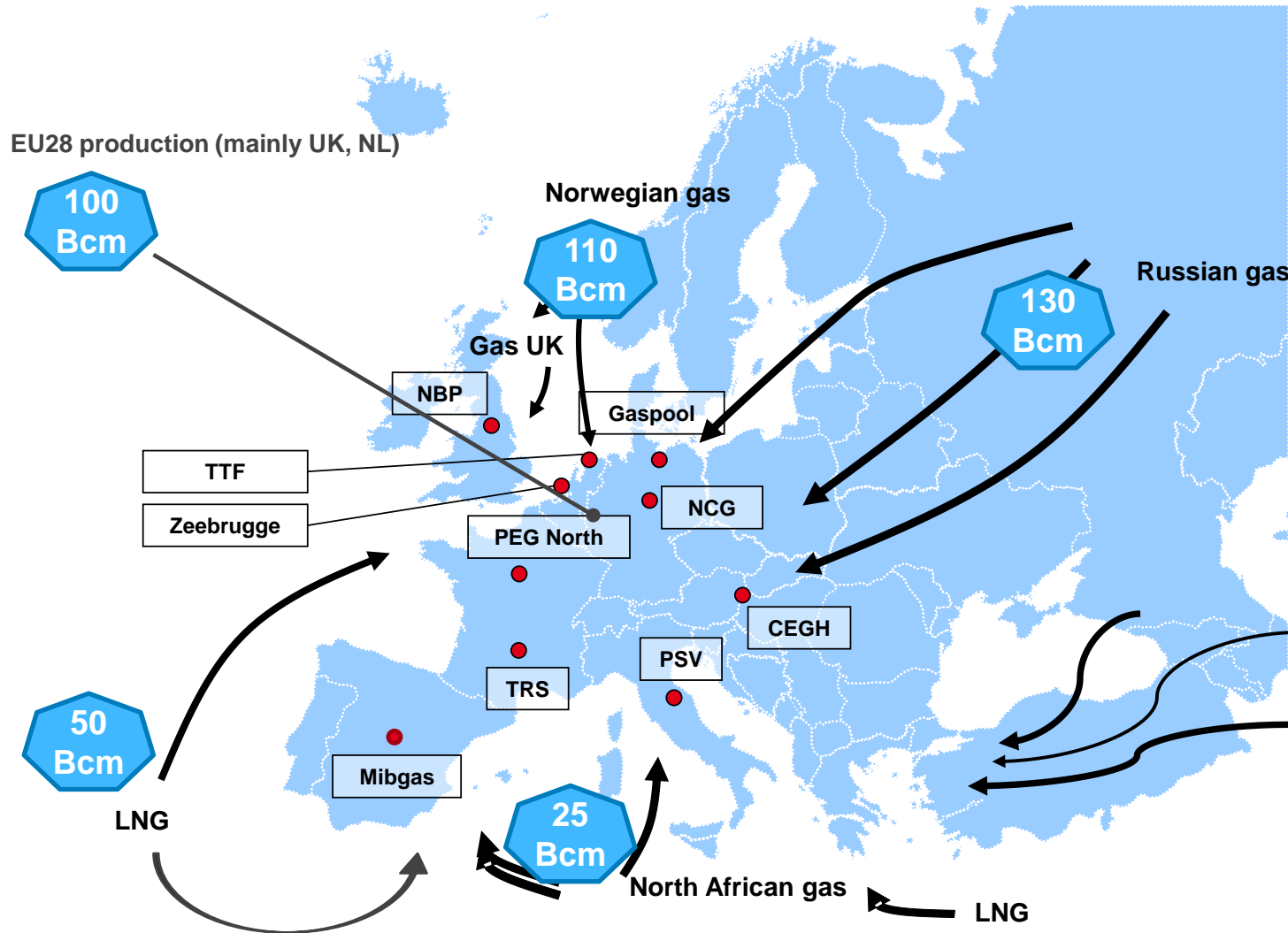
⇒ Import dependency



Source: BP Statistical
Review 2016

Today's supply chains and main market places

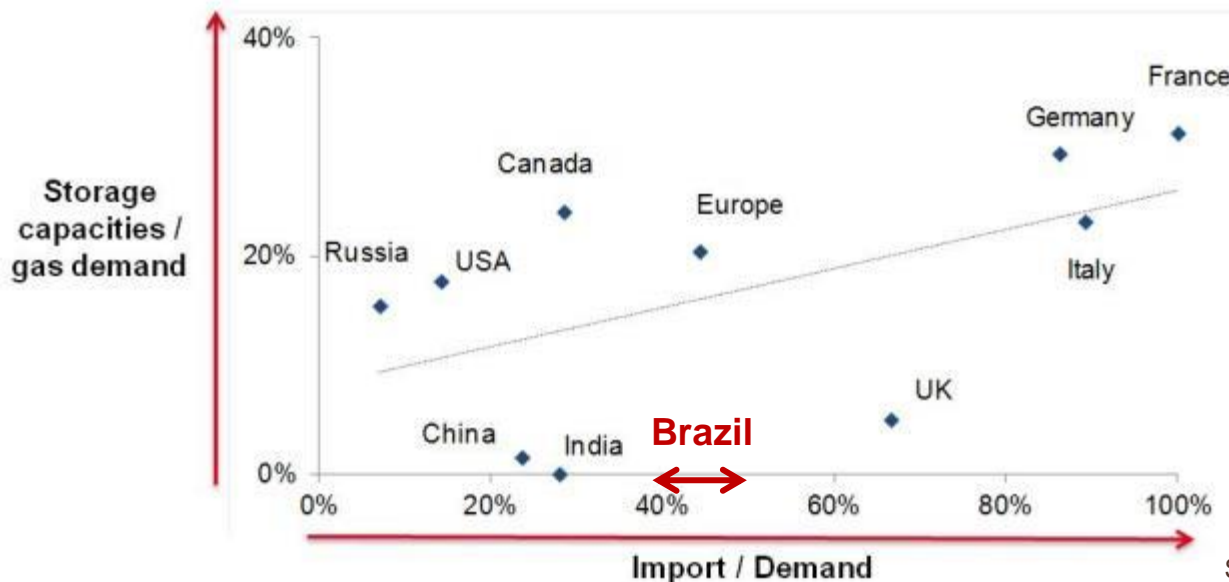
Increased LNG capacities balance out supply and growing gas trading possibilities



Underground Gas Storage

A key instrument of security of supply and flexibility

- **Most of the gas markets worldwide have developed storage capacities:**
 - The higher the needs of flexibility, the higher the needs for storage
 - The higher the dependency to import, the higher the storage capacities
- **Less mature markets look for storage and develop LNG storage capacities**



Source : from BP Statistical Review

Dependency and Vulnerability of the gas sector

- Compared to Europe **Brazil is less dependent** on gas imports
- Nevertheless, **Brazil is vulnerable towards** his main supplier, Bolivia
- And due to its lack of gas infrastructures:
 - Brazil would not succeed the “N-1” test of the European Commission
 - Brazil doesn’t have gas storage to secure its supply
 - Brazilian national gas network is not meshed

Countries	Share of the main supplier	Importation (% demand)	UGS volume (% of demand)	EU rule of the "N-1" *	Vulnerability assesement
Netherlands	22%	-25%	25%	162%	Exporting country using UGS for flexible and secured exports
Spain	38%	100%	14%	106%	Very dependent country reducing vulnerability by diversity of suppliers and gas infrastructures
France	40%	100%	30%	130%	Very dependent countries reducing vulnerability by diversity of suppliers and gas infrastructures
Germany	42%	97%	29%	180%	
Italy	44%	89%	26%	106%	10 years decrease of the domestic production and inflexible supplies
Argentina	56%	26%	0,3%	98%	Vulnerable gas sector requiring diversity of supply and infrastructures
UK	57%	58%	7%	109%	Limited dependency and vulnerability but changes with ongoing domestic production decrease
Brazil	64%	49%	0%	92%	Vulnerable gas sector requiring diversity of supply and infrastructures
Austria	75%	80%	98%	179%	High exposure to imports and one supplier -> UGS is key
Hungary	100%	89%	73%	105%	

NB: Austria and Germany are also transit countries which is not highlighted in the N-1 methodology

* N-1 (%) = (Maximum Entry Capacity + Maximum Domestic Production + Maximum UGS Deliveries + Maximum LNG Deliveries – Main Supply Infrastructure Capacity) / (Maximum Demand – Interruptible Demand) *100

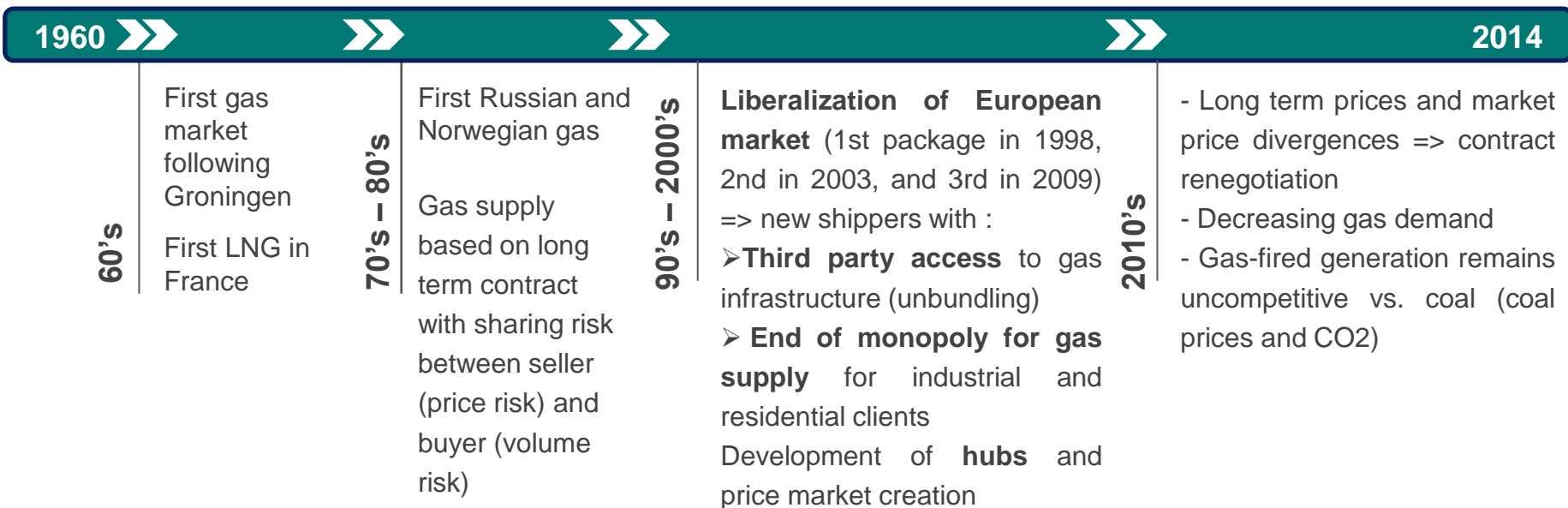


The Concern about Security of Supply in the Opening of the Gas Market

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Natural gas in Europe

A long history in a nutshell



Key drivers for market liberalization in Europe

The European market will do better than the national monopolies

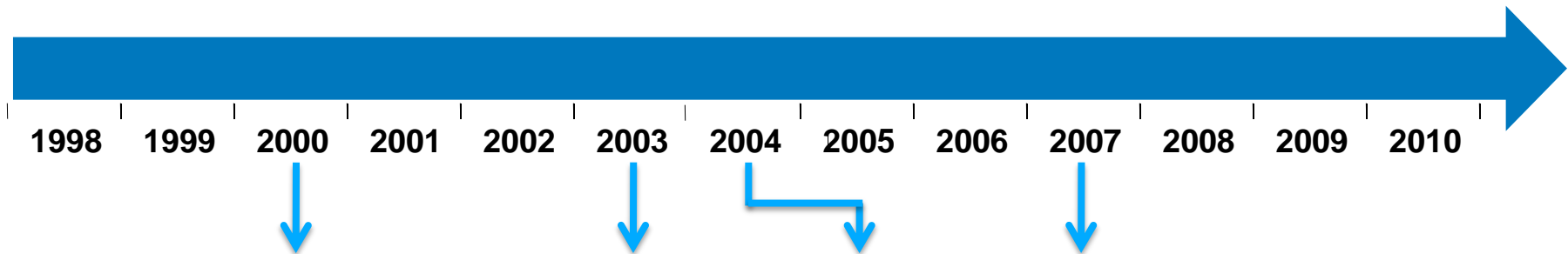
- National monopolies
- Integrated companies
 - Imports
 - Infrastructures:
 - Transmission
 - Storage
 - LNG Terminals
 - Distribution
 - Supplies
 - Often state-owned



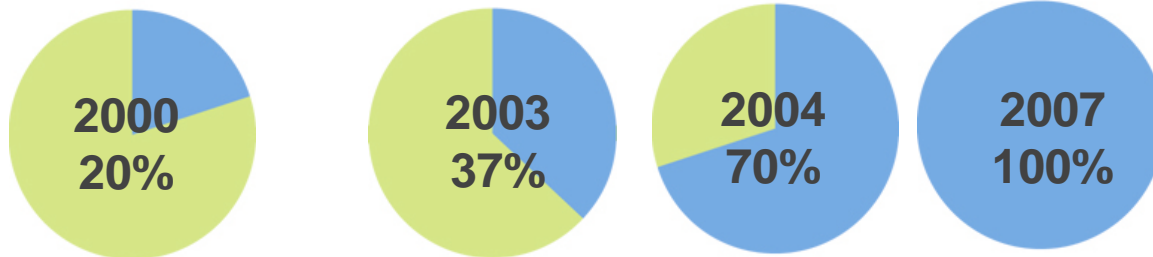
- Mitigate weaknesses of monopolies
 - Consumer protection
 - Reduce prices and overcapacity
 - Improve price transparency
- Basic principles
 - Intrinsic efficiency of the market(s)
 - Introduction of competition wherever possible
 - Vertical separation (unbundling)
 - Third party access to the grid (TPA)
 - Regulation
 - Competition between producers, suppliers

Market opening in Europe

Market opening spread over 8 years + gradual unbundling



Share of energy consumption open to competition (France):



A progressive unbundling of supply and infrastructure businesses :

Accounting unbundling → *Functional unbundling* → *Legal unbundling*

European regulations

Security of Supply is essential for the market

- To create an integrated and competitive gas market at a European level, which will guarantee to the customers :
 - ✓ **Affordability**
 - ✓ **Available - security of supply**
 - ✓ **Acceptable - low carbon energy**
- To reach these targets it was chosen to :
 - ✓ Give a **fair access to gas networks** in term of capacity allocation and prices,
 - ✓ have a **solidarity mechanism** between UE member states to guarantee security of supply,
 - ✓ implement a « **gas target model** » which will allow a liquid market,
 - ✓ develop **infrastructures and interconnections** so as gas could flow everywhere,
 - ✓ **adjust regulation** with lessons learnt (first directive regarding opening of the market 1998).

A geopolitical attention point: the vertical disintegration of the gas value chain shall not weaken the Union in the relationships with its suppliers.

European regulations

Focus on Security of Supply increased after market opening

Establishment of the conditions for Security of Supply (Regulation No EC 994/2010)

The **Russian-Ukrainian gas crisis of January 2009** brought a new impetus to the need to provide a sufficiently harmonized and efficient framework in the EU to respond to a gas supply disruption.

The main outlines of this regulation :

- The text defines a scope of **protected customers** who benefit from a strict protection of their gas supplies even during three exceptional circumstances: extreme temperatures, period of exceptionally high gas demand, disruption of the largest gas infrastructure.
- the Member States should be able to **cope with the failure of the largest infrastructure** and the TSOs shall enable **physical bi-directional gas flows on all cross-border interconnections** or request exemptions based on assessments.
- Each Member State must elaborate a **Preventive Action Plan and an Emergency Plan** (including the measures/investments planned to reach the infrastructure and supply standards) based on a prior risk assessment. Both need to be notified to the EC.
- **Principle of solidarity** between Member States to ensure security of supply at European level.

A focus on Security of Supply (SoS)

European regulation on SoS and Public Service Obligation (CE Regulation n° 994/2010)

- Defines scope of **protected customers**
- Introduces a “**Supply Standard**” against adverse scenarios:
 - 7-day peak demand in 1-in-20 years (5% probability risk)
 - at least 30 days of high demand “ “ “
 - at least 30 days in case of disruption of large infrastructure
 - More stringent supply standards/obligations only allowed if they can be reduced for the sake of “solidarity” between Member States
- Introduces an “**Infrastructure Standard**”
 - “N-1” formula: peak-day demand (1-in-20 years) satisfied even if loss of the single largest infrastructure
 - Reverse flows on all interconnection points
- Increases **transparency** obligations in an emergency
- Requires designation of a “**Competent Authority**” in charge of preparing: Risk Assessment/Preventive Action Plan/Emergency Plan



A focus on Security of Supply (SoS)

Storage obligations

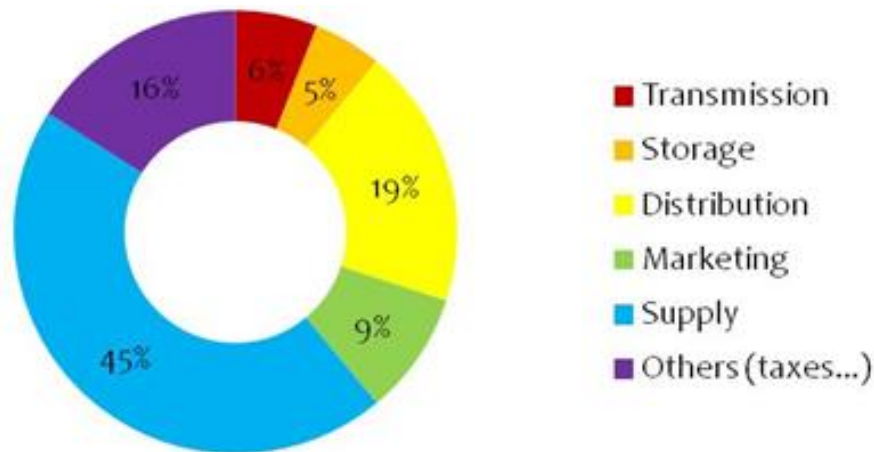
Some countries address SoS through underground gas storage obligations:

- **France**: for suppliers of domestic customers and customers providing services of general interest
- **Czech Republic**: in Winter (Oct-Apr), at least 20% of Supply Standard to be covered using storage
- **Poland**: importers must hold 30 days of average annual imports in storage
- **Spain**: shippers must hold 20x daily average sales of previous year in storage
- **Italy**: importers and producers must hold reserves ensuring coverage of 30 days in peak period during 5% cold winter + Strategic storage volume
- **Hungary**: a dedicated facility for Strategic storage volume

The Gas Value Chain in the invoice of the client

The cost of Security of Supply measures is included in the infrastructure cost....

... but contributes as well to negotiate better commodity price (a significant part of the gas bill)



Gas bill components for an average residential customer connected to the French grid
(source: CRE, French regulator)

03

The application of the EU Directives and Regulation, the Case of France

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European Union decision on Energy

The principle of subsidiarity

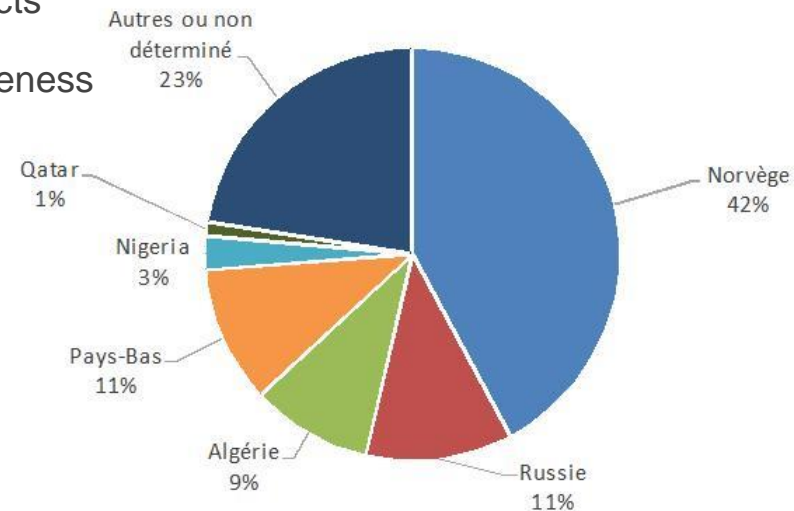
- Energy forms part of the shared competences between the European Union and Member States and is therefore subject to the principle of subsidiarity (decisions being taken as closely as possible to the citizen).
- A **EU directive** is a legal act which requires member states to achieve a particular result without dictating the means of achieving that result. Directives normally leave member states with a certain amount of leeway as to the exact rules to be adopted.
- It can be distinguished from **Regulations** which are self-executing and do not require any implementing measures.

Code de l'Energie (French Law) defined the Obligations of Public Service for the Gas Market

- Obligations defined by the Law to all market players:
 - the operators of **Transmission and Distribution networks**, to **LNG installations** operators,
 - the **Suppliers**
 - the **Underground Gas Storage** concessionaries
- Concerning:
 - Health and safety of the people and installation before the connection to the final consumers
 - **Continuity of gas supply**
 - **Security of supply**
 - Quality and price of products and services provided
 - Environment protection
 - Energy efficiency
 - Biogas valorization
 - Balanced development of the territory
 - **Gas supply of last resort to non residential consumers ensuring a mission of general interest**

Security of Supply – the French Policy

- **Design the gas infrastructures** to respond to a risk 2% on consumption (peak and volume) as well as the N-1 rule -> the TSOs implement the 10 Years Development Plan
- **Favour the diversity of supply:**
 - In 2015, 80% of the gas supply based on long term contracts
 - Lack of LNG supply in the past years due to Asian attractiveness



Sources: French Ministry of Environment, Energy and Sea

www.developpement-durable.gouv.fr/securite-dapprovisionnement-en-gaz

www.developpement-durable.gouv.fr/procedure-dautorisation-fourniture-en-gaz-naturel

Security of Supply – the French Policy

Obligations to get Authorization of Gas Supply

- Obligation of continuity of supply on **gas providers**, who must **demonstrate its technical, economical and financial capabilities to supply its clients**
- All gas providers must insure a continuous and uninterrupted supply (excluding Force majeure and maintenance):
 - During **3 days of the coldest winter in the last 50 years** (risk 2%),
 - During the **coldest winter peak in the last 50 years** (risk 2%),
 - during **6 months in case of the loss of the principal source of supply** in the average climatic conditions
- If they supply residential customers and the non residential customers ensuring mission of general interest (education, defense, health...), they must also:
 - Have at least **2 entry points on national network** (> 5% market share) or 3 points (>10%)
 - **Communicate to the Ministry** the current and forecasted rules and modalities of their gas resource allocations

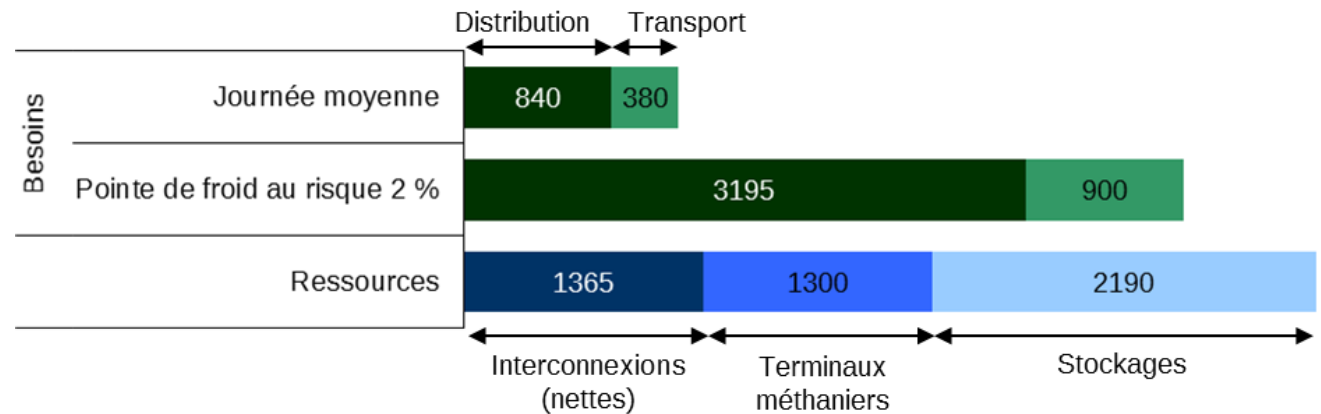
Security of Supply – the French Policy

Obligations to get Authorization of Gas Supply

- Obligation to store enough gas in the **underground gas storage**

Gas system capacity and needs in case of a demand peak during a winter at 2 % (GWh/j)

French Ministry of Energy



- The **Gas Emergency Plan** aims at preventing and managing a crisis of supply:
 - Identification of the people responsible in each entity (directory of correspondents)
 - Action plan established according to the EU Regulation

The Supplier of Last Resort – Ministerial Order 19/05/2008

- TSOs and Suppliers of Last Resort must supply gas to non residential ensuring a mission of general interest in case of default of the usual provider
- The list of clientes is established by Prefectoral Order after consultation of the system operators (Transmission and Distribution)
- The first 5 days of supply are guarantied by the TSO after default declaration done by the Minister of Energy (decree no 2004-251, 19/03/2004 on public service obligatons for gas sector)
- After these 5 days, the client who cannot success in finding a new provider could call for the Supplier of Last Resort (SoLR). The SoLR can provide the gas until the end of the gas contract signed with the default provider
- The SoLR concerns only a small part of the customers: **only the non residential customers having a mission of general interest**
 - i.e. hospital, clinics and health centres (houses for pensioners or desambled peoples), education establishments and service receiving children under 6 years old, police and firemen buildings, military and prisons, administration receiving public.
- The Ministerial Order of June 5th 2015 designed 4 SoLR for 3 years and for specific geographic zones. They have been selected by the French Energy Regulator (CRE) after a call for tender.

Obrigado!