

e-network 2019

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ENERTRADE



Mix de generación e interconexiones

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ENGIE

The French electricity market: Structure & Competition

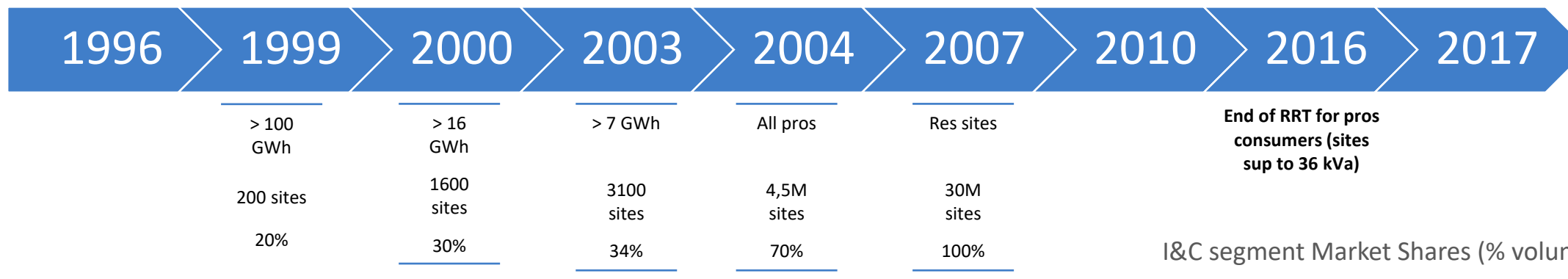
Bastien Gaboriau

A long and complex transition period from Monopoly to competition

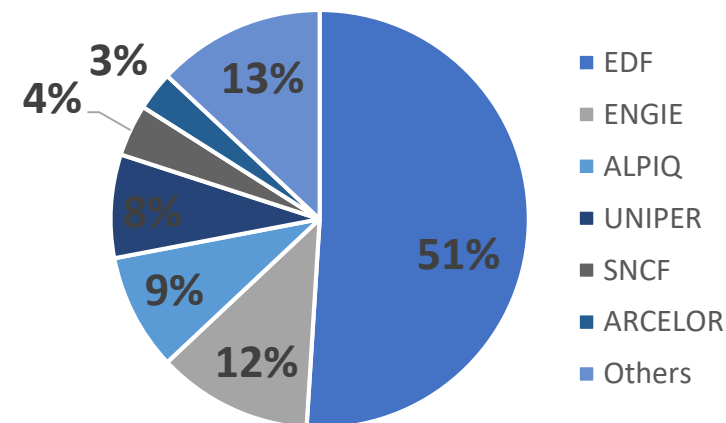
Directive 96/92/CE

Law NOME : New
Organization of the
Electricity Market

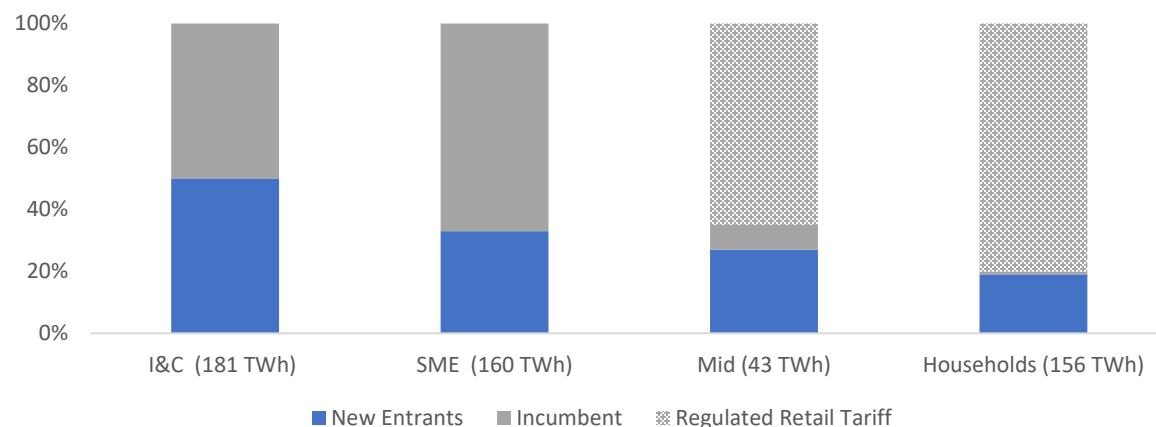
Capacity
Mechanism



I&C segment Market Shares (% volumes)



Type of contracts (% volumes)



ARENH

The ARENH mechanism has been put into place in 2011, aiming to :

- Enhance the competition on the French retail market in the context of EDF dominant position on the generation segment
- Maximize the value of the historical nuclear rent for the final consumers

Principles : alternative suppliers can access to EDF production under the following conditions

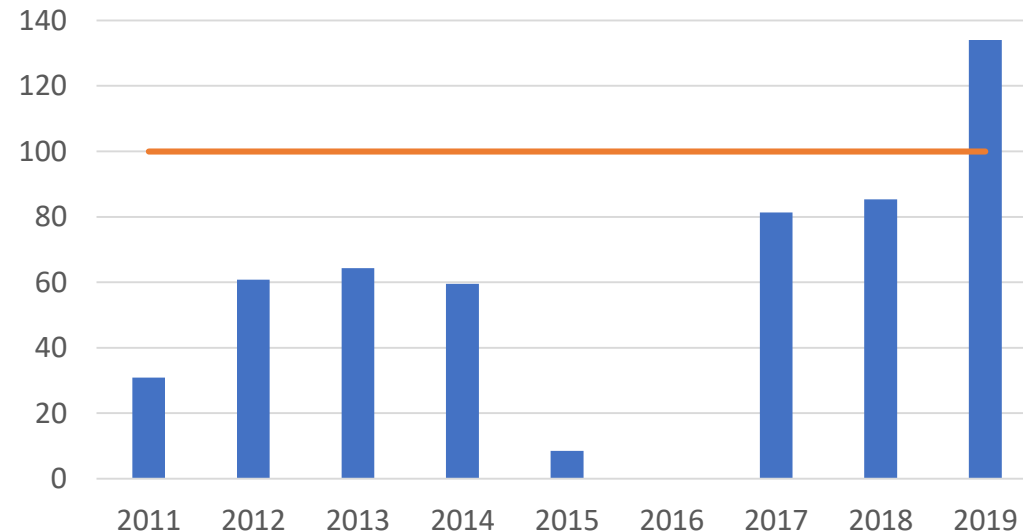
- Aggregated volume : 100 TWh/year (representing around 25% of EDF nuclear historical output)
- Price : regulated by the French authorities (42,00€/MWh)
- Rights : defined by the customer profile (Based on low consumption hours)
- Allocation methodology : 1 yearly allocation request (Mid of november Y-1 for Y)

ARENH rights represent around 85% of an I&C yearly profile and 75% for a SME industrial profile

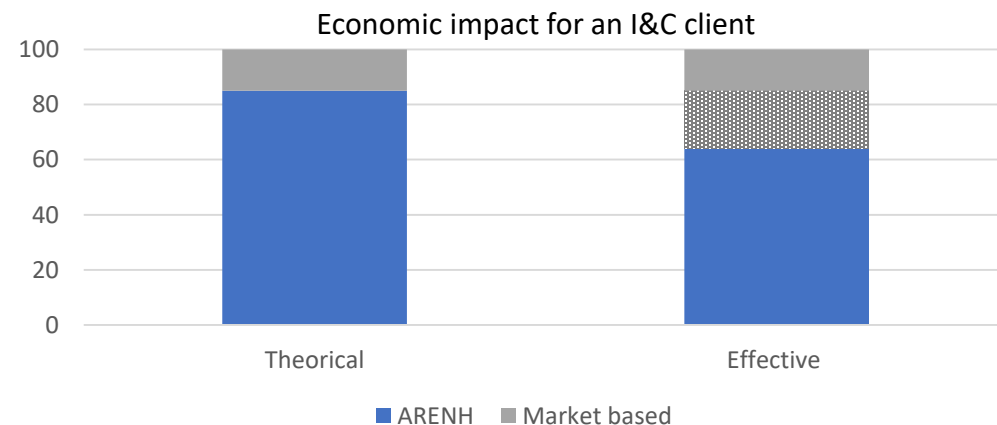
In case of over subscription (higher than 100 TWh), ARENH is allocated on a prorata basis :

For 2019, with an aggregated demand of 134 TWh, alternative suppliers have received 74,6% of their requested volumes.

ARENH requested/allocated volumes (in TWh/year)



An extra market exposure of 21 GWh to be sourced around 55€/MWh v.s 42€/MWh



Capacity mechanism

The French Capacity Mechanism entered into force on January 2017.

Context

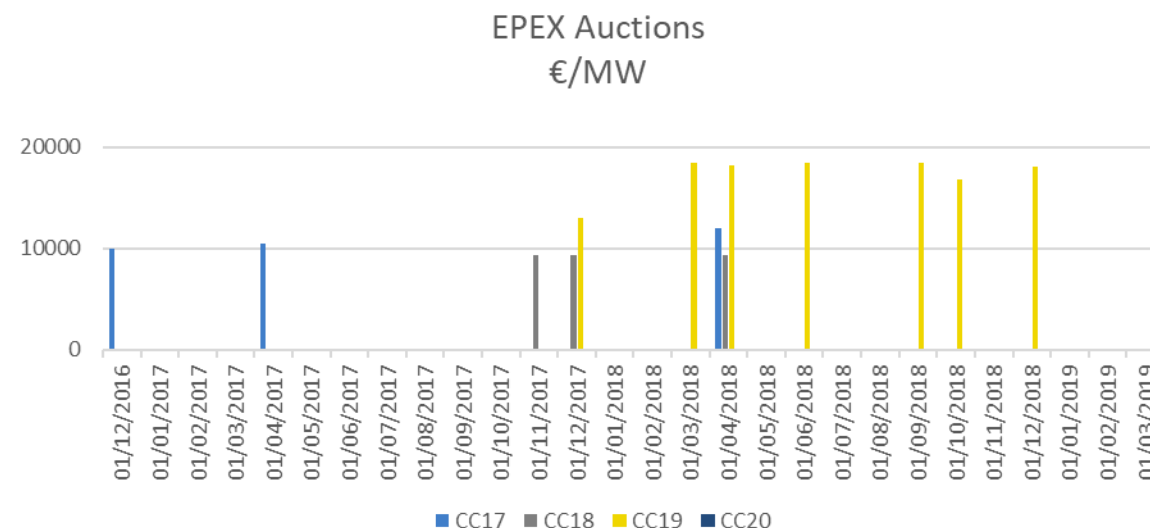
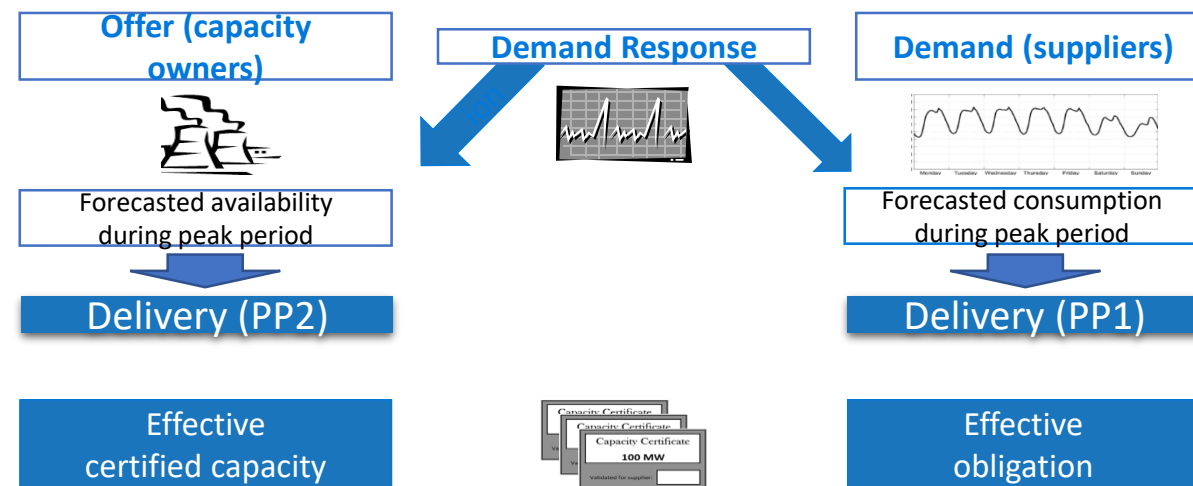
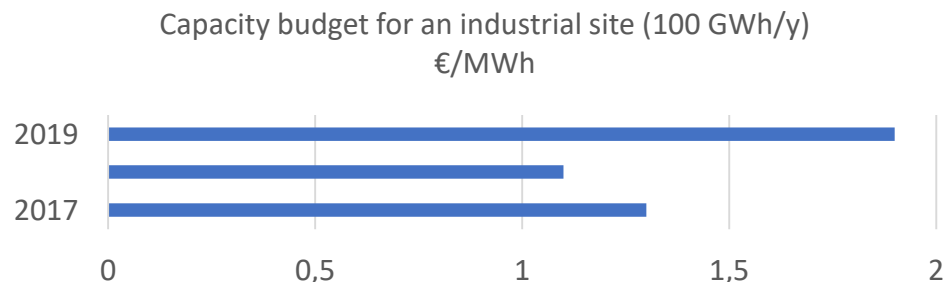
- French electrical demand increases drastically during cold waves => need to ensure adequacy
- Extreme volatility of the French Peak Load => need to provide the relevant economic signals to ensure investments and retirements (generation and DSR) according to systemic needs

Principle

the suppliers have to buy « capacity certificates » to producers or DSR aggregators to cover consumption of their customer during peak periods (100 to 150 hours per year activated on a Day Ahead basis by the TSO).

Prices of the Capacity Certificates

CC are exchanged either on OTC or on auctions organized by EPEX Spot.



Non commodity costs: grid

- Grid access fees and conditions are regulated by the French Energy Regulatory Commission (« CRE »).
- Under restrictive conditions (volume, anti-cyclical & stable profiles) some sites are eligible to tariff reduction (from 40% to 90%).

Eligibility criteria			Grid Tariff rebate			
Stable profile	Anti-cyclical profile	Large consumers	HEI sites	EI sites	Power storage sites	Others
Yearly consumption > 10 GWh and usage > 7000 hours	Yearly consumption > 20 GWh and off peak grid use ≥ 44%	Yearly consumption > 500 GWh and off peak grid use between 40% and 44%	80 %	45 %	30 %	5 %
Yearly consumption > 10 GWh and usage > 7500 hours	Yearly consumption > 20 GWh and off peak grid use ≥ 48%		85 %	50 %	40 %	10 %
Yearly consumption > 10 GWh and usage > 8000 hours	Yearly consumption > 20 GWh and off peak grid use ≥ 53%		90 %	60 %	50 %	20 %

Non commodity costs: taxes

- Tax on electricity consumption = CSPE/TICFE (**22,50€/MWh @ Full rate**)
- A new tax framework has been put into place on January 1st 2016. Most of the industrial customers are eligible to reduced rates (from 7,50 to 0,50€/MWh).



Industry

From 0,50 to
7,50€/MWh



Transport (train & tramway)

0,50 €/MWh



Data Centers

12,00€/MWh



Airports

7,50€/MWh

Competitiveness support mechanism

For 2015 France has put into place various mechanisms to support the competitiveness of electro-intensive consumers.

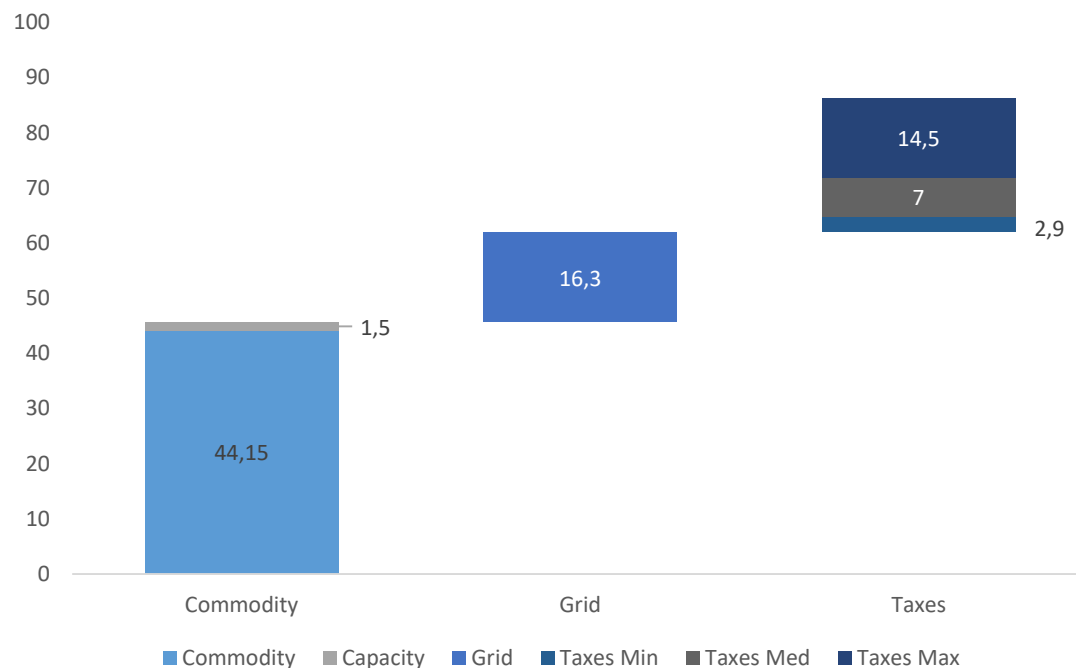
Support mechanisms	
Grid rebates	188 M€ in 2018
Indirect carbon cost compensation	100 M€ in 2018
Interruptibility mechanism	96 M€ in 2018
CSPE reduced rates	727 M€

}

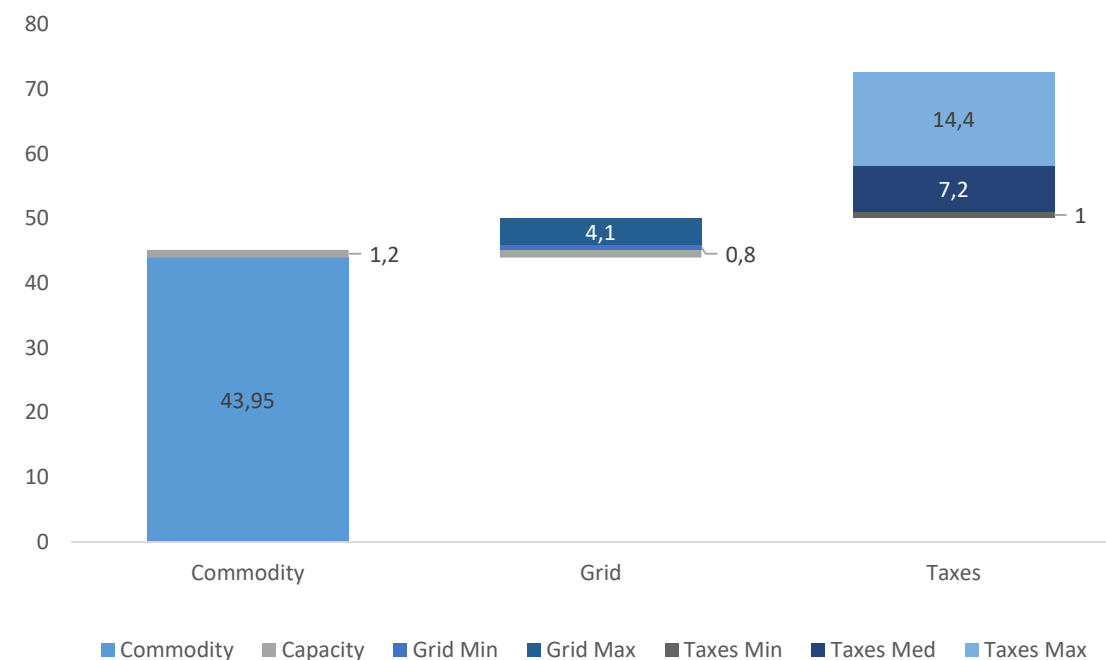
1 100 M€

Price & Cost structure

2019 Cost structure : 100 GWh industrial consumption site



2019 Cost structure : 500 GWh industrial consumption site



In 2015, France has put into place various levies to improve competitiveness of electro and highly electro intensive consumers :

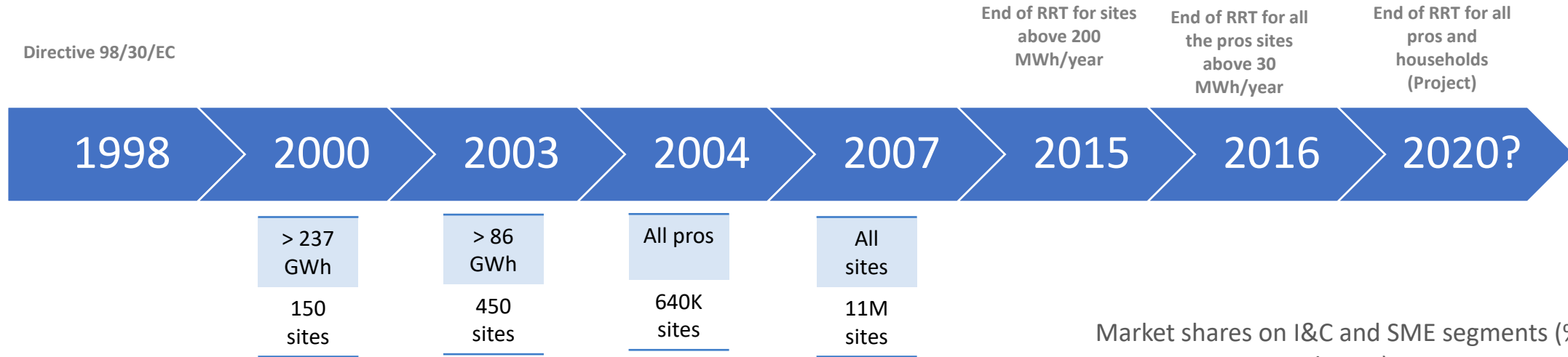
- Tax reduction : from 22,5€/Mwh to 0,5€/MWh
- Grid fees reduction : from 45% to 95%

The French gas market: Structure & Competition

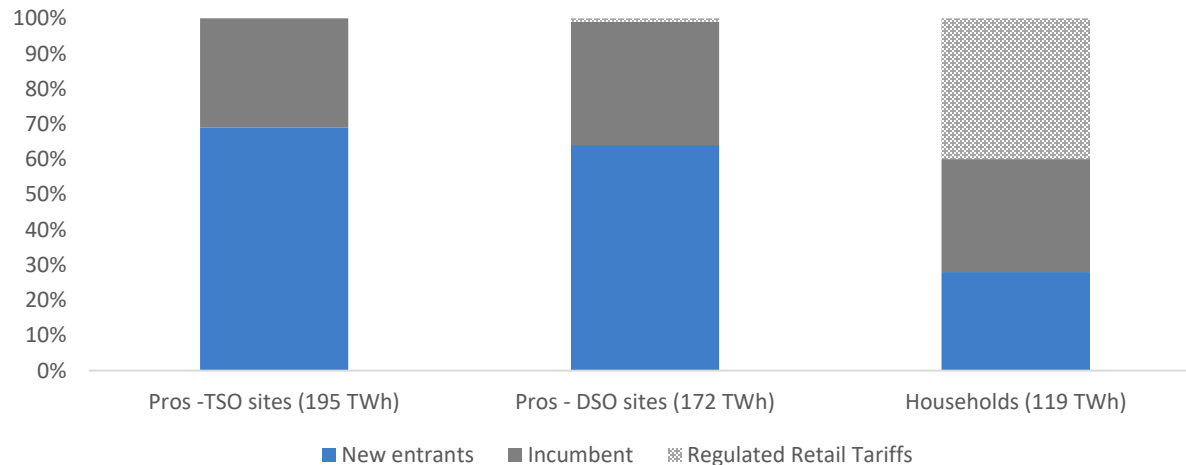
Bastien Gaboriau

Introduction

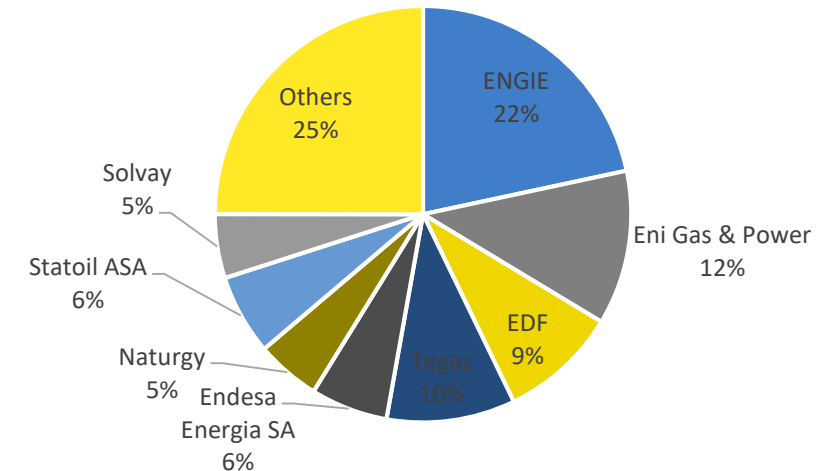
Directive 98/30/EC



Type of contracts (% volumes)



Market shares on I&C and SME segments (% volumes)



Market structure

Main challenges for the French gas market for the last two decades have been:

Balancing zones and Market places merger

From November 1st 2018 : 1 single market place.

Investments : 823 M€

This structural evolution will reinforce liquidity of the French market place (Trading Region France) and protect the French consumers against the former North/South spread phenomenon.

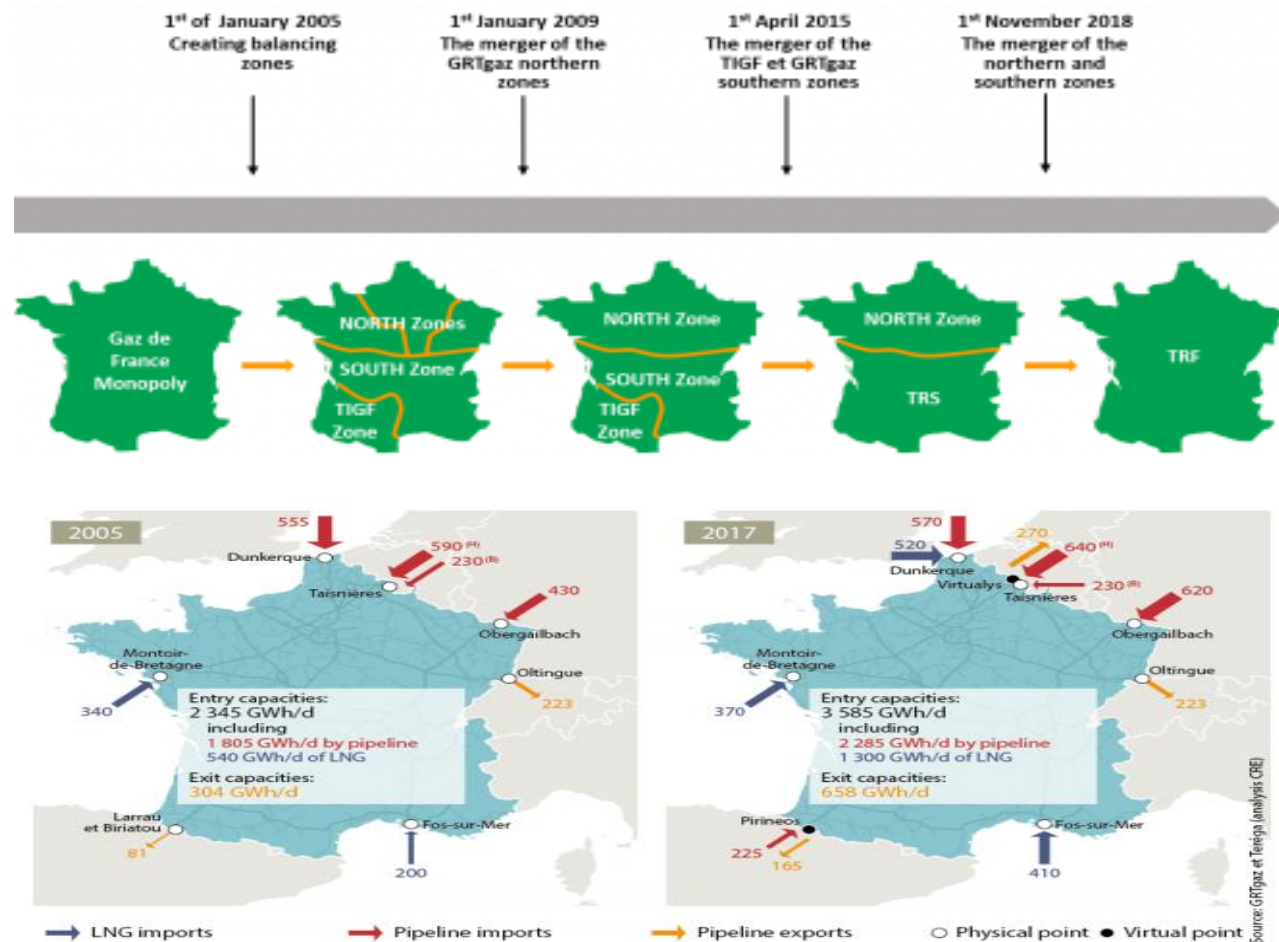
Development of interconnections and infrastructures

French market is fully integrated to NWE and SWE markets.

A diversified gas supply thanks to major pipeline and LNG capacities.

More than 135 TWh of storage capacities.

France has proactively implemented the European Network Codes (CAM, CMP, BAL).



Non commodity costs

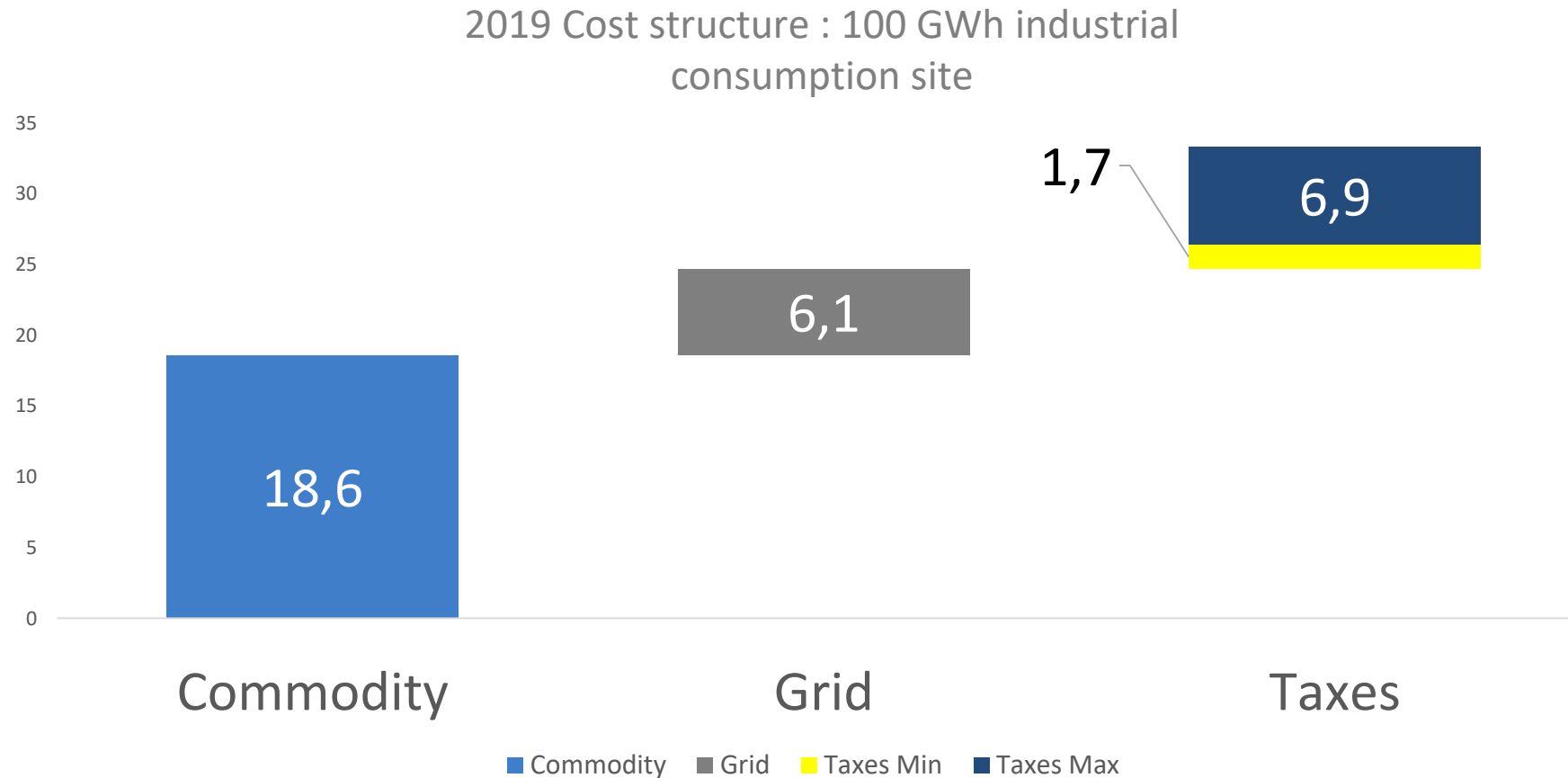
Grid fees

- Grid access fees and conditions are regulated by the French Energy Regulatory Commission
- Fees are designed on a capacity subscription model
- No rebates mechanism for the time being : a gas intensive consumers status has been introduced in the French energy Law

Taxes

- Tax on gas consumption : TICGN
- Rate : 8,45€/MWh (2019)
- Reduced rates : 1,52€ & 1,60€/MWh

Price & Cost structure



For 2018, storage costs are integrated in the Transmission tariffs

Thanks!

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Electricity and gas markets in France: regulatory aspects

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Ashurst France

General overview of the electricity market

- **A historical monopoly now open to competition**

- Electricité de France (EDF) was created in 1946 and benefitted from a state monopoly, being in charge of the production, distribution, transmission, import and export of electricity
- France transposed EU directives which gradually opened the electricity market to competition
 - Production and supply are fully opened to competition (since 1 July 2007, consumers can freely choose their energy supplier)
 - Distribution and transmission are still subject to exclusive rights (third parties access right under transparent and non discriminatory conditions / regulated tariffs)
- Unbundling requirements: activities of production, supplying and transport must not be operated by the same entity
 - Independent transmission operator (ITO) model adopted in France as RTE (transmission system operator) was part of a vertically integrated undertaking on 3 September 2009

- **A production primarily based on nuclear energy**

- Nuclear power accounted for 71.6% of the total electricity produced in 2017
- Renewables accounted for 18% of the energy mix in 2017, with hydroelectricity representing 10.1% (i.e., nation's biggest source of power after nuclear reactors)
- Fossil fuels (i.e., coal, fuel and gas) accounted for 10.2% of the mix in 2017

Key regulatory aspects

- **Regulation by the Energy Regulation Commission (CRE)**
 - Independent public body regulating electricity and gas markets (wholesale or retail) in charge of:
 - Guaranting non discriminatory access to the grids for all plants, suppliers, producers
 - Supervising the grid development as well as the transactions on electricity and gas markets
 - Proposing electricity regulated tariffs and providing an opinion for gas regulated tariffs
 - Proposing the amount of the public contribution for electricity public service costs
 - The CoRDiS, a specific independent body in charge of settling disputes between grid users and distribution and transmission operators
- **Electricity price and conditions of sale**
 - Retail market: pricing options for consumers
 - Non-regulated tariffs: suppliers are free to offer whatever price fits the electricity demand
 - Regulated sale tariffs: EDF and local distribution companies offer supplying at regulated prices (only for contracts supplying power lower than 36 kVA and non-interconnected areas)
 - Wholesale market
 - Supervision of the transactions and overseeing the coherence between offers, technical and financial constraints by the CRE under Regulation No 1227/2011 of 25 October 2011 on wholesale energy market integrity and transparency (REMIT)
 - Renewables benefit from easier access to the market through special tariffs
 - Nuclear electricity can be bought based on regulated prices and volume (ARENH)

Electricity production

- **A highly concentrated market**
 - EDF still benefits from a strong position given its former monopoly and the fact that it owns and operates all French nuclear power plants
 - EDF owns 87% of electricity power plants, comparing to 2.7% for Compagnie Nationale du Rhône, 2.3% for ENGIE and 1.9% for UNIPER
 - Efforts are being made to reduce market concentration such as the ARENH price which secures access to a limited volume of nuclear generation under regulated tariffs for alternative suppliers
- **Financial incentives for the development of renewables**
 - Two support mechanisms to enhance the development of renewable energies
 - Market Premium (main support mechanism)
 - Feed-in tariff (now exceptional)
 - Support mechanisms are granted either under open window procedure or competitive process (call for tenders)
- **Development of self-consumption**
 - Legal framework authorising self-consumption implemented in 2017
 - Self-consumption on a personal scale or on a small collective scale

Electricity distribution and transmission

- **Distribution**

- Only operators authorised by the Energy Code can operate the distribution system
- Three categories of distribution system operators (DSO) with exclusive rights to operate the distribution system
 - Enedis (95% of the metropolitan grid)
 - Local distribution companies (ELD)
 - EDF Systèmes Electriques Insulaires for overseas territories
- The distribution grids belong to municipalities, which grant concession contracts to DSO
- Under the Energy Code, the DSO must define the network investment policy, guarantee a grid access to third parties, and maintain the balance between supply and demand at any time

- **Transmission**

- Réseau de transport d'électricité (RTE), whose capital is substantially owned by EDF, is vested with exclusive rights as the French transmission system operator
- Certification of RTE as an independent transmission system operator in 2012 by the CRE
- The majority of RTE capital must be owned by EDF, the State or other public companies and entities (on 1 April 2017, 49.9% of RTE capital was sold by EDF to the Caisse des dépôts et consignations and CNP Assurances)
- RTE operates and owns the grid, guarantees the balance between the electricity produced and the electricity consumed, uses market to ensure security of supply, etc.

General overview of the gas market

- **A historical monopoly now open to competition**
 - Gaz de France (GDF, now ENGIE) was created in 1946 and benefitted from a state monopoly, being in charge of the production, distribution, transmission, import and export of gas
 - France transposed EU directives which gradually opened the gas market to competition
 - Supply is fully open to competition (since 1 July 2007)
 - Distribution and transmission are still subject to exclusive rights (third parties access right under transparent and non discriminatory conditions / regulated tariffs)
 - Unbundling requirements: under the EU directives, monopolistic activities had to be separated (transmission, distribution, storage and LNG businesses)
- **Description of the domestic natural gas sector**
 - Almost no national production of natural gas, 99% of France's consumption comes from importations from Norway, Russia, the Netherlands, Algeria, Nigeria and Qatar
 - Natural gas accounts for 15.8% of the final national energy consumption and 15.5% of the national primary consumption (after nuclear and petrol)
 - The incumbent supplier is ENGIE, and alternative suppliers have entered the market since its opening to competition

Regulatory aspects and gas distribution

- **Regulation by the CRE**
 - The CRE is in charge of regulating the gas networks and markets (see supra)
 - The CoRDIS settles disputes related to access and use of public natural gas networks
- **Gas price and conditions of sale**
 - Two types of prices are set on the gas market
 - Market prices: prices set freely by the suppliers (depending on supply and demand)
 - Regulated sale tariffs: gas provided by the historical supplier ENGIE and the 22 local distribution companies (only small-scale gas consumers have been eligible for regulated sale tariffs)
 - Regulated sale tariffs were judged illegal by the French administrative supreme court (Conseil d'Etat) in 2017. Based on the PACTE bill, such tariffs will be abolished by 1 July 2023.
- **Distribution**
 - Natural gas distribution networks are publicly owned and natural gas distribution is a municipal public service
 - Two categories of DSO with exclusive rights to operate the distribution system
 - GRDF (an ENGIE subsidiary) for 95% of the metropolitan grid
 - Local distribution companies
 - The distribution grids belong to municipalities, which grant concession contracts to DSO

Gas transmisión and storage

- **Transmission**

- Two transmission grid operators
 - GRTGaz (75% subsidiary of ENGIE) for around 32.000 km
 - Terega (formerly known as TIGF) for around 5.000 km
- The infrastructure is considered as being owned as a monopoly and involves public service obligations on the part of the owner
- Transmission grid operators must ensure non-discriminatory access to their infrastructure, and are prohibited from carrying out activities in the non-regulated sector (production and supply)
- Based on the PACTE bill, the capital of GRTGaz shall no longer be held solely, but majority owned by ENGIE, the State or State-owned entities. The reason is that the golden share of the State in ENGIE's capital and the regulation of the gas sector should in principle suffice to secure the guarantee of supply.

- **Storage**

- Two operators
 - Storengy (fully owned by ENGIE) with 14 sites (103 TWh)
 - Terega with 2 sites (32 TWh)
- Gas storage site as such is the property of the State

Agenda

13:00 – 14:20	Pausa para comida
14:20 – 14:40	El comercio de emisiones y su repercusión en los mercados de energía
14:40 – 15:00	El mercado único: ¿mito o realidad?
15:00 – 15:10	Presentación de la agenda para el resto del día
15:10 – 17:00	Francia (Sala principal) / Portugal (Sala 1)
15:15 – 15:30	Mix de generación e interconexiones
15:30 – 16:00	Formación de precios y mecanismos de ajuste, y funcionamiento del mercado
16:00 – 16:15	Regulación
16:15 – 17:00	Debate y P&R
19:30 – 20:45	Cocktail de recepción
20:45 -	Cena