



# Regulating Access to Nuclear Power Generation: The French Case

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# Introduction

- The 1<sup>st</sup> of July, suppliers in France will enjoy an access right to EDF's nuclear fleet to source their power with a tariff set by the government (40 €/MWh in 2011; 42€/MWh, in 2012).
  - This recently introduced regulated access to nuclear power is supposed to last until 2025
- Outline of my talk
  - Context and motivations for a regulated access to nuclear power in France
  - The main features of the instrument (i.e., how the access is supposed to work?)
  - Normative economic assessment: is the regulated access to EDF's nuclear power economically sound?
  - Positive ex ante assessment: will the objectives of the regulated access be achieved?
  - Conclusion

# Context

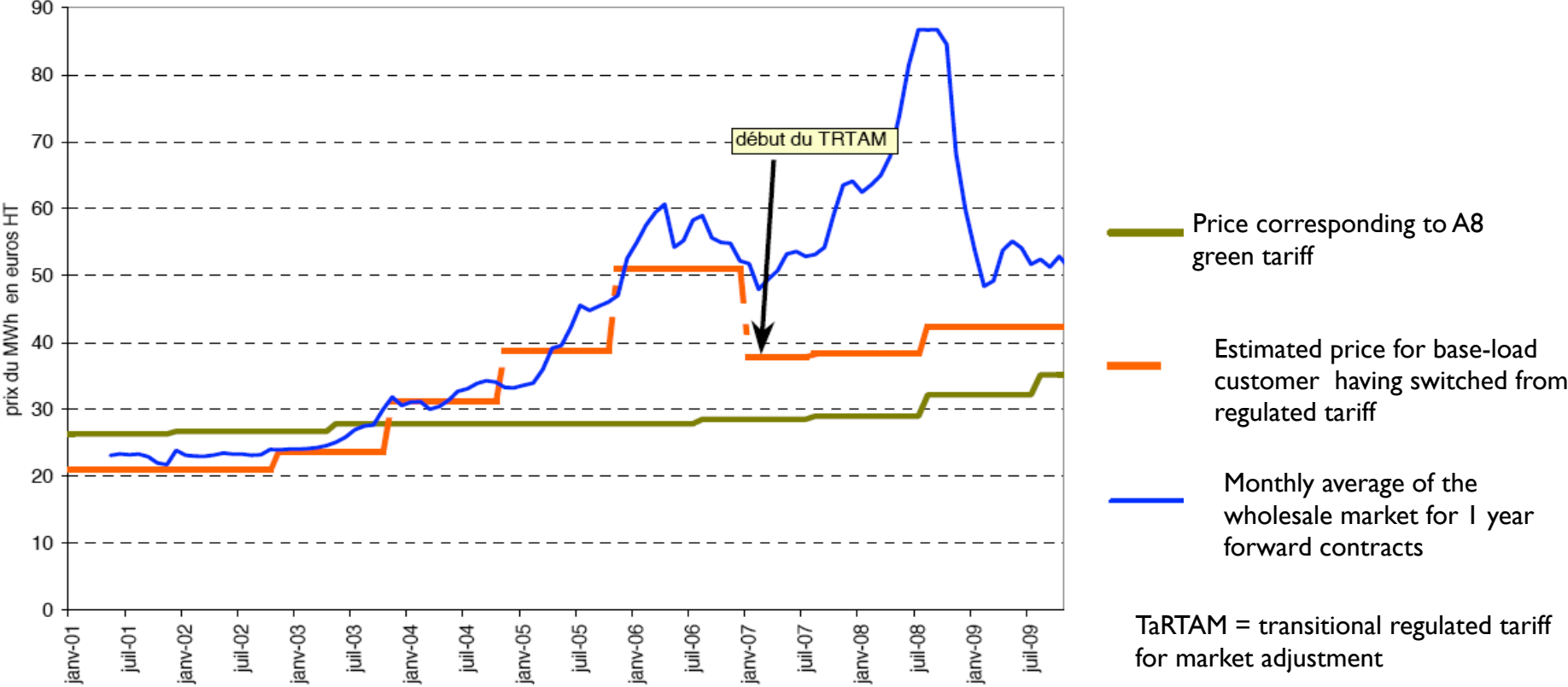
- The EU framework
  - EU policy: Internal market + security of supply + sustainability (i.e., climate change)
  - EU energy law (3 packages of Directives and Regulations to liberalize the energy market have been set since 1998) + EU competition law (merger control and antitrust)
- EDF
  - State-owned (83,7% equity)
  - A vertically integrated operator dominating power generation (91% of total generation) and supply (94 % of customers and 87 % of consumption)
  - Owning and operating 58 reactors (83% of total electricity produced in France)
- Market
  - 10 years after the opening of the French market , 93% of consumers (66% of consumption) still purchase their power at regulated retail tariffs (set by the government, served by EDF, including energy and networks)

# Market segments and regulated retail tariffs

| Regulated Tariff | Market segments                      |
|------------------|--------------------------------------|
| Blue             | Residential and professionals        |
| Yellow           | SMEs/SMIs consumers                  |
| Green            | Large consumers                      |
| TaRTAM           | Mostly SMEs/SMIs and large consumers |

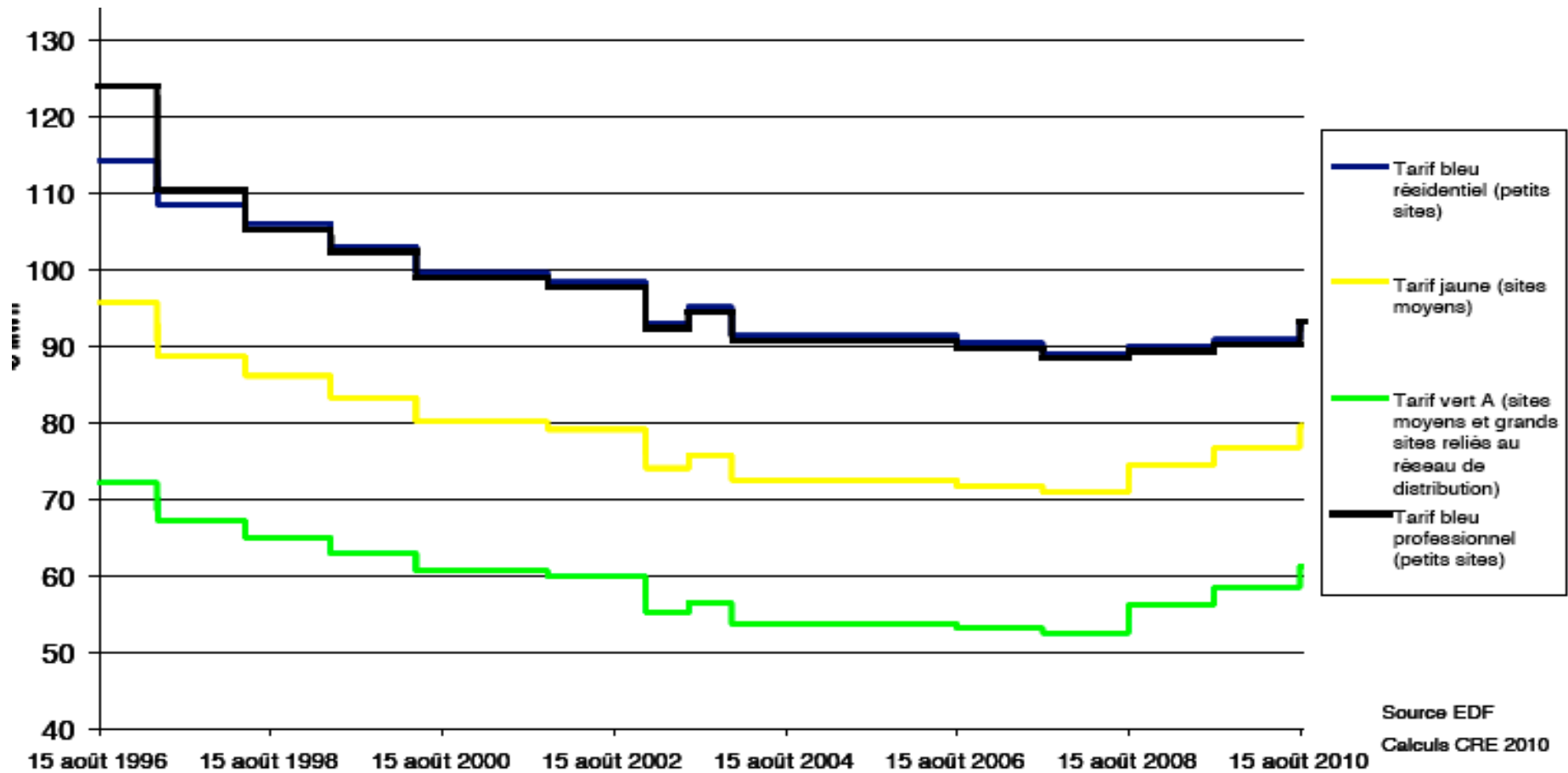
TaRTAM = transitional regulated tariff for market adjustment. It was set in 2006 to enable companies that had withdrawn from historic yellow and green tariffs to obtain cheaper power on the free market to benefit again from tariff protection. It represents about 74 TWh of annual consumption

# Comparison of trends in supply and wholesale prices, excluding transmission



(Current euros; source: Impact study, 2010)

# Average regulated tariffs (€<sub>2010</sub>/MWh, taxes excluded)



(Source: Observatoire des marchés de l'électricité et du gaz, premier trimestre 2011, CRE)

# The new electricity act in a nutshell

- Adopted in December 2010 as the law on the «New Organization of Markets in Electricity» (Hereafter, NOME)
- NOME eliminates TaRTAM (July 2011), green and yellow tariffs (December 2015) but it keeps blue tariffs (until 2025) and introduces a «Regulated access to historic nuclear power» (*Accès Régulé à l'Electricité Nucléaire Historique*, ARENH in French)
- Moreover, the NOME Act reforms the local electricity tax and plans to introduce a capacity obligation scheme before 2015

# The legal and policy process

- April 2009 – Issuance of the report of the commission chaired by Paul Champsaur the former telecoms regulator. The commission proposes to introduce a regulated access to base-load
- April 2010 - Draft bill proposed by government which details the regulated access to base-load
- November 2010 – After lengthy debates and many amendments at the Senate and Assembly the NOME law is passed
- December 2010 - Nomination of new commissioners of the energy regulatory authority
- March 2010 - Second Champsaur report on the price of the regulated access (confidential)
- April 2010 - Issuance of decrees and orders complementing the NOME Act
- May 2010 – Decree setting the tariff at 40€/MWh (July-December 2011) and 42€/MWh (after December 2011)
- July 2010 Nome enters into force



# The regulated access to nuclear power (ARENH)

- A quantity regulation
  - The maximum volume cannot exceed 100 TWh
  - The administered volume is allocated to each supplier up to 85% of the consumption of final consumers it supplies in France
  - The energy regulatory commission is in charge of controlling the quantity demanded ex ante by each supplier and consumed ex post by their customers
- A price regulation
  - Cost plus regulation (full costs: return on capital, operating expenses, maintenance, investments for extending the period of operating authorisation, dismantlement and waste disposal)
  - The price is set by the government until 2013, then by the energy regulatory commission
  - To ensure the sourcing cannot benefit consumers abroad (e.g., in Germany) a price supplement is imposed to suppliers for any quantity ex ante attributed that appears ex post in excess vis-à-vis the actual consumption of their clients located in France (i.e., disincentive to use ARENH for exports)

# 2011-2015

- The initial ARENH price has to be aligned with the level of the energy component of the TaRTAM retail tariffs
  - So on average TaRTAM consumers will not see their bill inflating when the TarTAM will be dropped
- In 2015, the energy component of the retail tariffs has to be aligned with the then ARENH price to ensure that
  - on average industrial consumers will not see a change in price of their energy purchase when the yellow and green tariffs will be dropped
  - the energy paid by residential customers subscribing blue tariffs will reflect the full costs of nuclear power generation

## Motivations of French policy-makers for introducing the regulated tariff on nuclear power 1/2

- Leveling the playing field for new entrants and increasing competition have not been the purpose of the new electricity law (Finon, 2010)
- Most French MPs and political parties are against liberalizing the energy sector
- The main motivation is the following (F. Lévêque, 2010)
  - Eliminating retail tariffs for industry because they are incompatible with EU law while ensuring French industry will continue to benefit from the cost advantage of nuclear power generation

# Motivations of French policy-makers for introducing the regulated tariff on nuclear power 2/2

- The current retail tariffs for industry are not compatible with EU law
  - Alleged failure to implement Directive 2003/54 (maintenance of regulated tariffs for non residential consumers), Official Notice, April 2006
  - State aid infringement proceedings to investigate the regulated tariffs benefiting certain large end medium-sized companies (opened in June 2007)
- French electricity to French consumers! A large political consensus
  - *“It is legitimate French consumers benefit from competitive advantages of French power generation capacities”* Champsaur Commission’s report (May 2009)
  - *“The government [wants] to preserve, for all consumers, the benefit of the investment carried out for the development of nuclear power through prices and tariffs reflecting the industrial reality”* Draft bill, explanation of purposes (April 2010)
  - *“This [act] has appeared as the best way to enable our country to protect its nuclear fleet and continue to make French its benefiter”* M.P. P. Ollier, National Assembly (June 2010)

# Normative assessment: is this regulation of access to nuclear power generation good or bad for society?

- Criteria: welfare maximisation/social benefits > social costs
- Which market failure is the regulation supposed to solve? Unclear, here
  - Unlike transmission and distribution nuclear power generation is not a natural monopoly
  - Nuclear power generation is not indispensable to compete on the wholesale market, so the essential facility doctrine cannot be applied
  - Were nuclear power generation a natural monopoly or an essential facility a regulated wholesale tariff would have suffice (i.e., no need to maintain any retail tariffs)
  - No doubt that EDF is dominant, however there are more efficient legal instruments (competition law, market oversight by the energy regulatory authority) than regulated tariff that can constraint EDF to exercise its market power
- Economic analysis (Joskow, 2008) shows that the key issue in liberalizing the energy sector is to open competition in power generation, gains from competition in supply - the only one that can be expected here - are more dubious

# More costs than benefits, very likely

- According to a cost-benefit analysis of Champsaur commission's recommendation to introduce a regulated access tariff to EDF's nuclear fleet made by Crampes et alii (2009):
  - “[This regulation] is likely to be welfare-detrimental”
- Limited benefits to introduce competition in retail market (<10% of the total bill) versus
- Disincentives for EDF to increase its performances (as any cost- plus regulation)
- + High administrative costs
- + Huge incentives for interested parties to lobby the government/regulator in setting the price of ARENH
  - For EDF a variation of 1 € in the regulated access tariff means a variation of € million 100 in its future annual revenue from the supplying to its competitors (100 TWh)

## Positive assessment: will the objectives be achieved?

- A long list of objectives
  - effective competition in supply (short term) and in generation (long term)
  - innovation creation and diffusion in supply
  - efficient investments in base-load and peak generation
  - maintaining the benefit from nuclear rent to consumers
  - stable legal and regulatory framework
  - end of proceedings initiated by the EU commission
  - absence of wind-fall profits for alternative suppliers
  - neutral financial impact for EDF
- Limitations for ex ante assessing: many unknowns
  - the capacity obligation scheme is not designed; the future evolution of the level of the regulated nuclear access tariff is not known; the future evolution of retail regulated tariffs is not known, neither

# Which future evolution of retail tariffs?

- In 2015, the retail integrated tariffs for households and professionals (blue tariffs) and industrial consumers (yellow and green tariffs) are supposed to be consistent with the then regulated nuclear access tariff
- Today the implicit base-load component of yellow/green (resp. blue) tariff amounts to 32 €/MWh (resp. 35) over a total of 80 €/MWh (resp. 90 €/MWh) without tax. With an initial regulated nuclear access tariff sets at 40 €/MWh, the catching-up means a 10% increase (resp. 5%) in the bill of large (resp. small) consumers. Moreover, up to 2015 other increases will likely have to be passed on into retail tariffs: the access tariff itself to take investments in life plant extension into account; the cost of capacity obligation; the transmission and distribution tariffs because new investments are needed; the subsidies for renewable which increase because wind and solar capacity extends; (to say nothing on a possible increase in peak-load prices)
- Will these increases be socially acceptable and politically manageable, and thus decided by future governments? It will end an historical period of decrease in electricity price in constant euro



# First appraisals

- An opinion from the French Competition Authority on NOME draft bill (May 2010)
  - “NOME might not result in creating effective competition”
- According to an impact study of NOME’s bill carried out by the government (April 2010), all objectives will be reached!
  - “[NOME] will permit alternative suppliers to make competitive offers [...] medium-sized and major consumers to benefit from competition [...] will provide a guarantee of better visibility for EDF [...] should contribute to significantly improving the functioning of the market”
- An economic analysis of the impact assessment (F. Lévêque and M. Saguan, 2010)
  - “The impact study is blindly optimistic”
  - 3 objectives are assessed: more competition, no windfall profits for suppliers, stable regulatory framework

# NOME achievement regarding competition (2011- 2015)

- Main assumptions: yellow and green tariffs are increased to be consistent with the initial regulated access tariff (40-42 €/MWh); no catching up for blue tariffs
- No significant change in retail market for small consumers
  - French consumers' preference for regulated tariffs remains and those tariffs continue to be difficult to be offered by alternative suppliers
  - Basically, NOME will only enable new entrants to stop to lose money in serving their today customers (4% market share)
- Effective competition in the retail market for large consumers
  - The market segment corresponding to ex TaRTAM customers and customers who switched from regulated tariffs is immediately (i.e., July 2011) contestable (about 140 TWh)
  - Yellow and green tariffs customers become progressively contestable (about 140 TWh)

# Windfall profits in 2015

- According to Maillard (2010), Lévêque and Sagan (2010), Lévêque (2011), prices for industrial consumers will dramatically increase and suppliers will enjoy windfall profits
- Main assumptions: yellow and green tariffs are eliminated, the 100 TWh cap is reached and not extended, EDF maximizes its profit
- Once EDF has fulfilled its contractual and legal obligations (e.g., long term export contracts, supplying blue tariffs consumers), its remaining nuclear power capacity is not large enough to serve the whole national industrial demand for base-load
- The market will exactly operate as if there was no regulation. However, alternative suppliers will get a windfall profit (they will sell close to the wholesale market price the 100 TWh they purchase at the regulated access tariff)
- NOME supporters wrongly expect the equilibrium price will be close to the weighted average costs of supply (i.e., 85% purchased at the regulated access price + 15% bought on the wholesale market) and therefore that consumers will continue to benefit from nuclear cost advantages.

# Stability and visibility of the regulated framework

- Tariff setting is not immune from opportunistic government intervention (will tariffs increase be decided? Will the windfall profit subsequent to the elimination of yellow and green tariffs in 2015 be tolerated?)
- Inconsistencies between regulated access and retail tariffs can last
- The capacity obligation scheme is not defined, yet
- The EU legal compatibility of NOME is questionable
  - Possible infringement to Article 35 of the Treaty on the Functioning of the European Union that prohibits quantitative restrictions on exports and all measures having equivalent effect
  - Possible infringement to Article 101 of the TFEU which prohibits agreements which have as their object or effect the distortion of competition within the internal market, in particular though restrictions on resale

# Conclusions

- It is likely NOME will be very transitory, that is, a life duration lower than 5 years. It may be seen as a new TaRTAM: a new way to prolong regulatory tariffs for industry for a few years
- France has chosen an anti-market and anti-European energy law to preserve the benefits of its past bet on nuclear power generation to French consumers
- The regulated access to the EDF historical fleet is supposed to enable competition in supply while keeping price close to nuclear costs for consumers. The problem is that the latter requires the maintenance of retail regulatory tariffs and this maintenance hinders the development of competition in supply. In other terms, the regulatory nuclear access fails to protect consumers once retail tariffs are eliminated
- One day France will have to accept that market opening requires other means than retail tariffs to transfer the nuclear rent to French (e.g. taxing EDF extra-profits) and wholesale tariffs to enable competition in supply (e.g., co-ownership of plants).

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