

Energy Markets and Energy-Climate Policies are changing : What about Market Designs ?

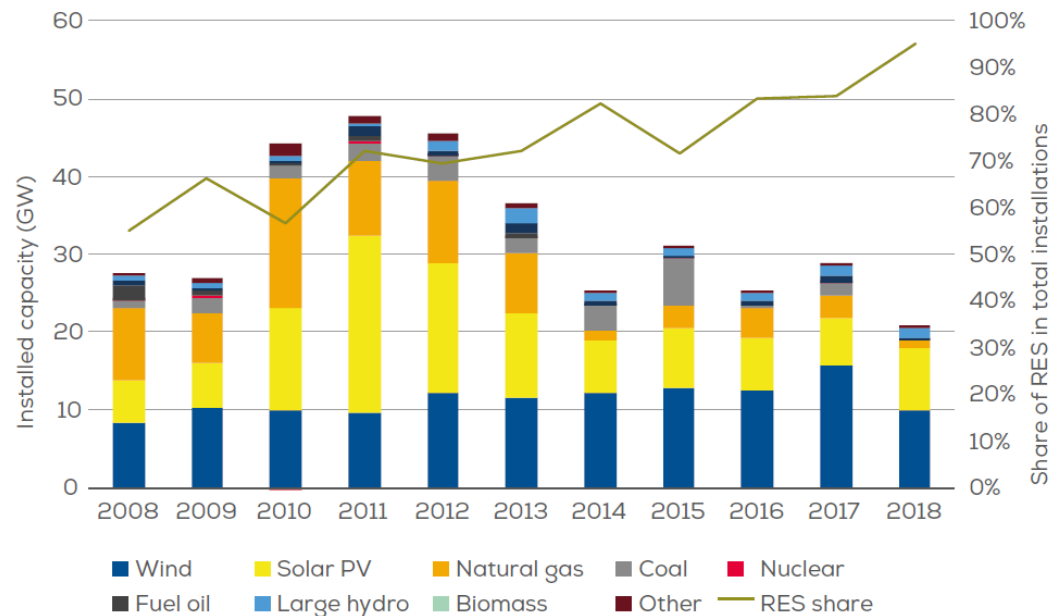
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Look at the future with glasses of the past ?

- **Market regime implemented in the 1990s**
 - Regulation largely inspired by the context of the time...
- **Issues about climate change appeared later in 2000s**
 - EU ETS for CO₂, public policies for supporting renewable energy and energy efficiency, etc.
- **More and more investments « out of the market »...**



Annual installed capacity and renewable share in EU-28 since 2008

Source : Wind energy in Europe in 2018

Trends and statistics, p.29.

CO₂ : which role for market regulation in the long term ?

- **Ideal scheme (a single price) : neither easy nor necessary**
- **EU ETS : the only truly european tool**
 - Market stability reserve reform : will it have the expected useful effect ?
 - « Central Bank » and price corridor : could be an option but politically touchy
- **Driving power system decarbonisation by carbon price is delicate...**
 - Massive redistributive effects (1 GtCO₂eq in 2030 at 200€/t = 200 G€...)
 - Various national situation (history), risk of carbon leakage
- **... and the risk is the come back of standards (e.g. cap on CO₂ emission) as a major tool :**
 - It will need the right metric of CO₂ avoided cost for insuring efficient public policies...

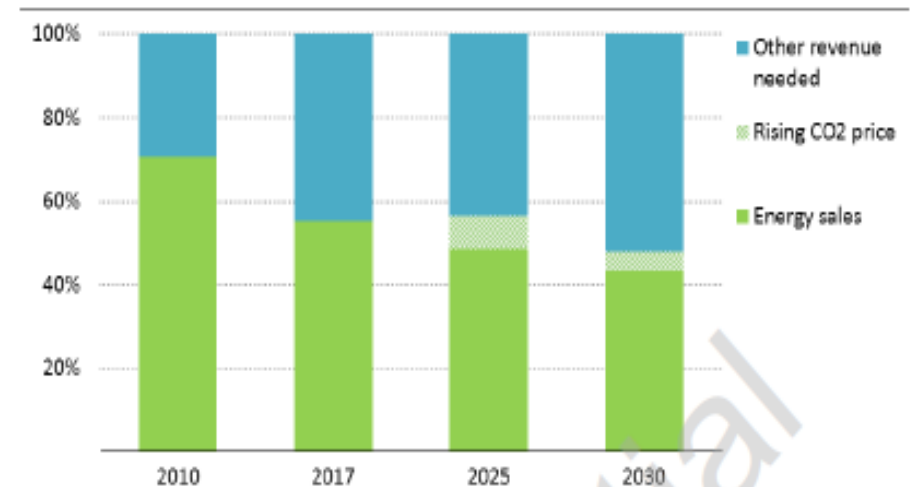


The current market design is not adapted to the climate energy challenges

- **Market prices are not suitable for an « economical lighting » of a decarbonized power system**
 - Ad hoc mechanisms to address short-term default risk (CRM in most of MS in Europe)
 - Long-term question, the least cost in time : poorly treated
- **The system is becoming more and more intensive in capital, from upstream to downstream :**
 - Investment (and cost of capital) becomes the main driver of system performance, a major difference from the past period (CCGT)
 - A global and dynamic vision of the system is the key for piloting in an efficient way the needed investments

2,000 to 3,000 billions of € to invest in Europe by 2040...

Figure 10.18 ▶ Share of long-run generation costs covered by energy sales in the European Union, historical and in the New Policies Scenario



The widening gap between the value of electricity sales and total generation cost is raising questions about the ability of competitive markets to deliver efficient and timely investment

Source : World Energy Outlook 2018

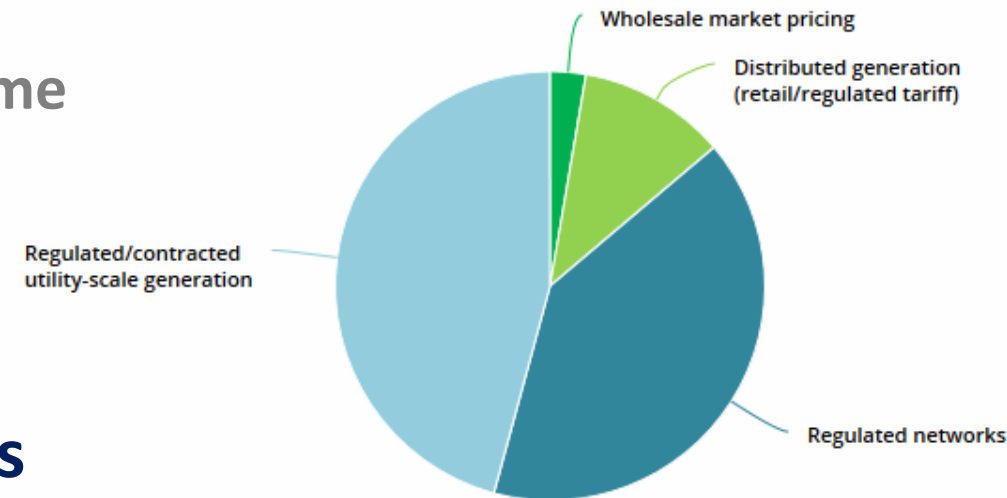
One diagnosis and different options

- **Strengthen the role of the market :**

- Wholesale market with prices spikes, price congestion management (e.g. nodal price), real time pricing for end consumers, etc.
 - Europe : last region to support the model ?

- **Complete the market with long-term contracts**

- Market + capacity reliability mechanism (FR, IT, ES, PL, etc.)
- Market + bilateral long-term contracts (Enel, Iberdrola) e.g. PPA
- Market + competitive tenders for long-term contracts organized by third party (Brazil, Ontario, UK?)



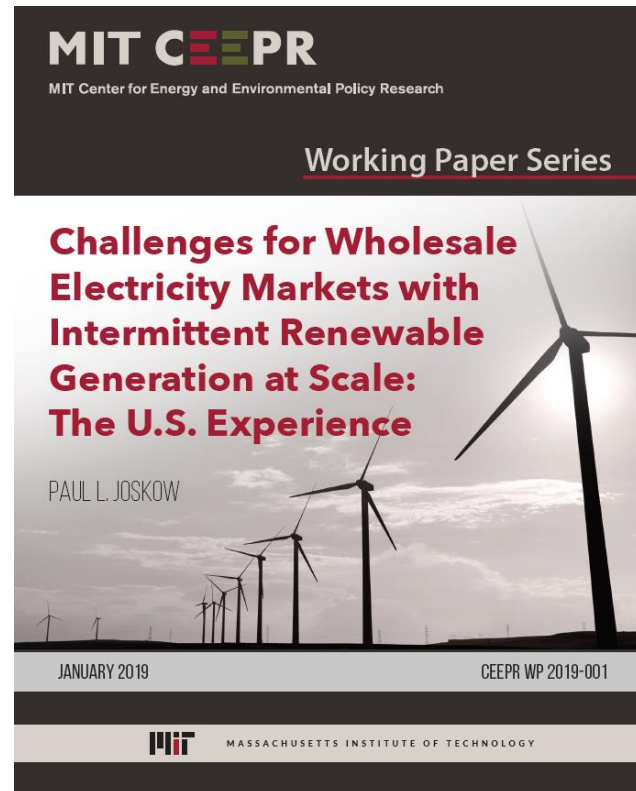
Source : World Energy Outlook 2018

Global power sector investment by main remuneration model (750 billions US\$ in 2017)

The need for a new market design

- A new market design is necessary to face the challenges of the decarbonization of the power system.
 - *long-term contracts* are the most adapted to support a low carbon transition of the power system to an acceptable cost
- Is this idea progressing ?

“Reforms in capacity markets and scarcity pricing mechanisms are needed if policymakers seek to adapt the traditional wholesale market designs to accommodate intermittent generation at scale. However, if the rapid growth of integrated resource planning, subsidies for some technologies but not others, mandated long term contracts, and other expansions of state regulation continues, more fundamental changes are likely to be required in the institutions that determine generator and storage entry and exit decisions”.



*« The difficulty is not to understand new ideas, but to escape old ideas »
J.M. Keynes*



Thanks

