Addressing the Financing Challenge
An Industry Perspective

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The Voice of the European Nuclear Industry

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CEZ (Czech Republic) and PGE (Poland) are Corporate Members
Nuclear Energy in Europe

28% of EU’s total electricity production

131 Nuclear reactors in operation in the EU

55% of low-carbon electricity

Turnover of €70 billion/year

European nuclear industry supports 800,000 jobs
An Industry Perspective

• a divided EU
• the current Hurdles: Market Failures
  • no way to recoup investment (price signal)
  • transparency of system, transmission costs
  • discrimination of funding mechanisms
  • regulatory risks
• which Way forward?
  • action on Market Design
  • Harmonizing Regulation
  • a Level Playing Field: which Political Support?
  • Nuclear vs. Deregulated Electricity Markets
  • Industry: deliver on time, to budget
• according to the Treaty of Lisbon (TFEU, Art. 194, para.1), energy is a shared competence (EU + Member States) in view of
  ensuring the functioning of the energy market
  ensuring security of supply
  promoting energy efficiency and savings (+ RES)
  promoting interconnections of energy networks

• BUT (Art. 194, para.2): each MS maintains its right to "determine the conditions for exploiting its energy sources, its choice between different energy sources and the general structure of its energy supply"

• nuclear is definitely the dividing line...
DIRECTIVE 96/92/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 19 December 1996
concerning common rules for the internal market in electricity

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 57 (2), Article 66 and Article 100a thereof,

Having regard to the proposal from the Commission (1),

Having regard to the opinion of the Economic and Social Committee (2),

different ways in which electricity systems are organized at present;

(6) Whereas the establishment of the internal market in the electricity sector must favour the interconnection and interoperability of systems;

Revenues from different energy sources, Germany

Renewable Energy Sources

- on-shore wind: €85/MWh
- off-shore wind: €154/MWh
- PV: €107/MWh
- conventional: €22/MWh

source: RWE, 47th AMNT, Hamburg, 10 May 2016
Is this a Market?

maximum and minimum weekly prices
[Day-Ahead, Germany]

Source: Johannes Mayer, Fraunhofer ISE; Données: EPEX-SPOT / EEX.

Source: Policy Paper 134,
Jacques DELORS Institute, 21 May 2015
Market Failures

• wholesale market: a severe overcapacity (price collapse, down to less than 30 €/MWh)
  • low economic growth, demand stagnation
  • expanding capacity of subsidised renewables (zero marginal cost)
  • fossil fuel prices collapse (coal, shale gas/oil)

• EU Emission Trading Scheme (carbon price < 5 €/t)
  • inadequate to drive reduction in fossil fuel use and low carbon investment

• taxes and levies on nuclear
• no award to security of supply benefit
• no long-term hedging against electricity prices
ETS: Evolution of the Carbon Price

Nuclear: Regulatory Risks

• capital intensive, long lead time before generating income
  • which assurances that governments will stay supportive

• EU regulation: State Aid Energy and Environmental Guidelines
  • no such rules applicable to nuclear, a case by case analysis

• licensing: lack of harmonisation across Regulatory Bodies
• ensure full **transparency of system costs** (production, transport, distribution, backup)
• make market arrangements designed to ensure that **system costs are internalized** by each supplier
• internalize CO₂ climate cost in electricity prices (ETS or any other effective carbon price system)
• ensure **technology neutrality** between low carbon sources
• recognize and award **security of supply** benefit (long-term and short-term perspective)
• ensure **regulatory stability**
• harmonize regulation (EU-wide framework):
  • the EC to stimulate ENSREG, WENRA to review the scope for harmonization
• **harmonize** fuel and energy **taxes** (no unjustified specific "nuclear" taxes)
• support **long-term contracts**:
  • bilateral agreements negotiated between consumers and generators
  • technology neutral competition processes (call for tender, auctioning)
• end priority dispatch for renewable energy sources...
Investment: who's up to the Challenge?

Source: Étude pour la DG Énergie, Capacity mechanisms in individual markets within the IEM.

Source: Policy Paper #134, Jacques DELORS Institute, 21 May 2015
EU and Nuclear: LCOE
Questions on the Way Forward

- Long Term Operation (LTO): a competitive option
- **New Build** (100-120 GW?): FOAK vs. NOAK
- **industry**: committed to deliver (time, budget), can cost-effective construction be achieved?
- which long-term **industrial vision** of nuclear activities?
- which **joint initiatives**: regulation, R&D, waste management, financing?
- nuclear in a deregulated electricity system?