



**WEC- Europe Regional Workshop
Paris – 6 December 2011**

**The Energy Picture of Europe in 2050
- Scenarios – Policies – Technologies -**

*French Views on the Use
of Energy Scenarios by
Policy Makers*

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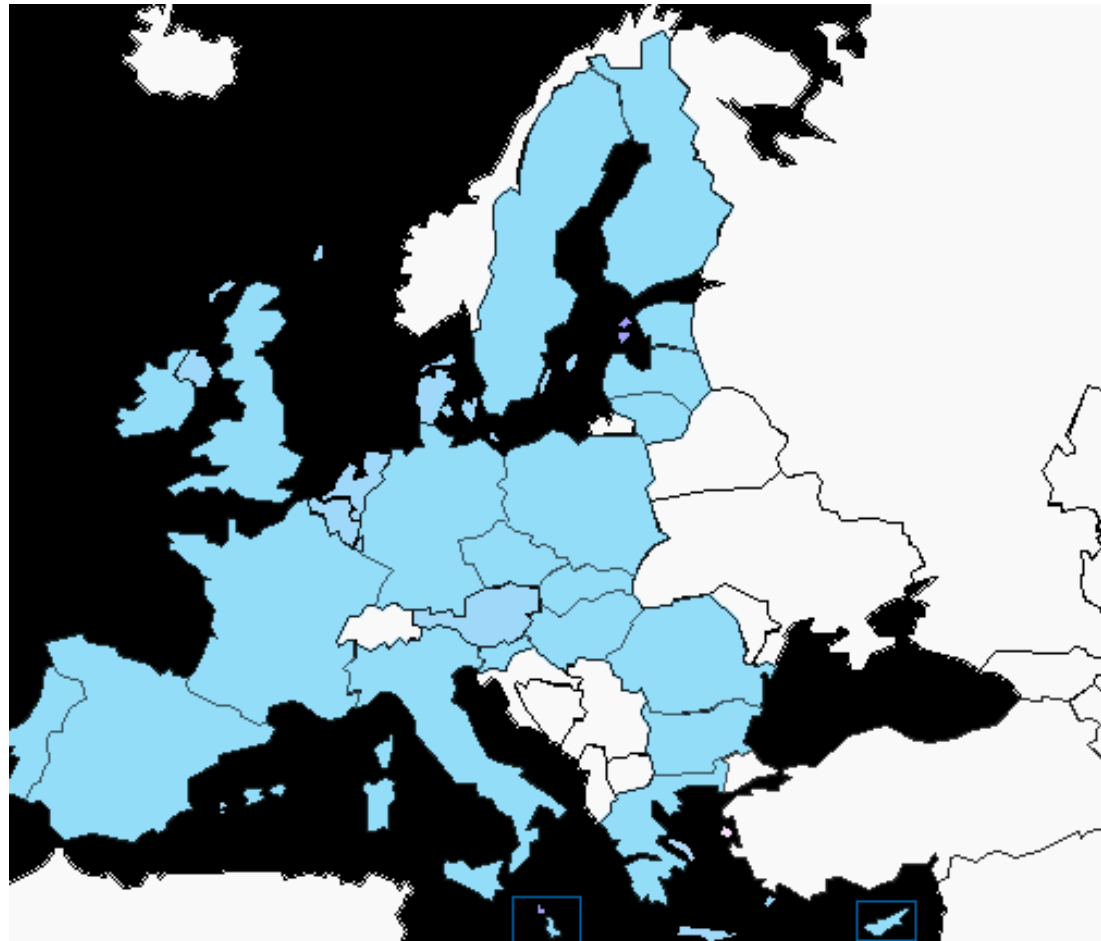
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Ministère de l'Écologie, du Développement durable, des Transports et du Logement
Ministère de l'Industrie, de l'Énergie et de l'Économie Numérique

The French energy policy framework

- *Loi POPE (2005) : determines the main orientations and objectives for the medium-long term, up to 2050*
- *Grenelle de l'environnement (2007) : focusing on climate change and energy efficiency, up to 2020*
- *Multi-year Investment Programme (2009) : focusing on electricity, gas and heat, up to 2012 and 2020*
- *Energy Climate Package (2008) : EU level, focusing on climate change, renewables and energy efficiency, up to 2020*

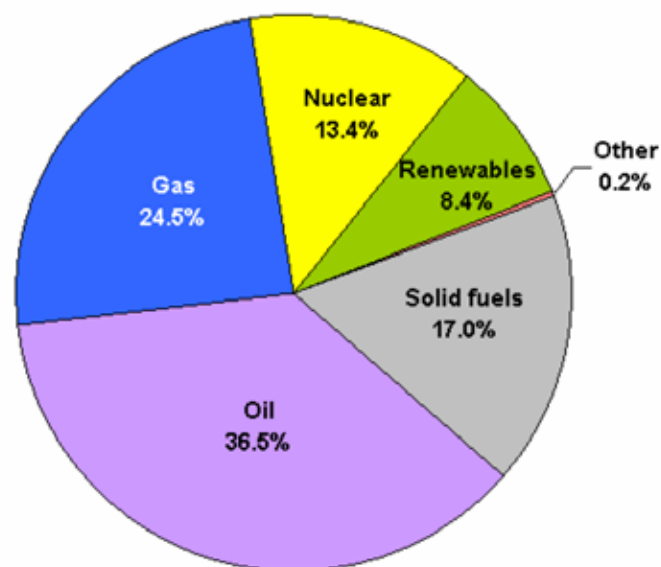
France is located in the heart of EU



The EU energy mix is slowly changing

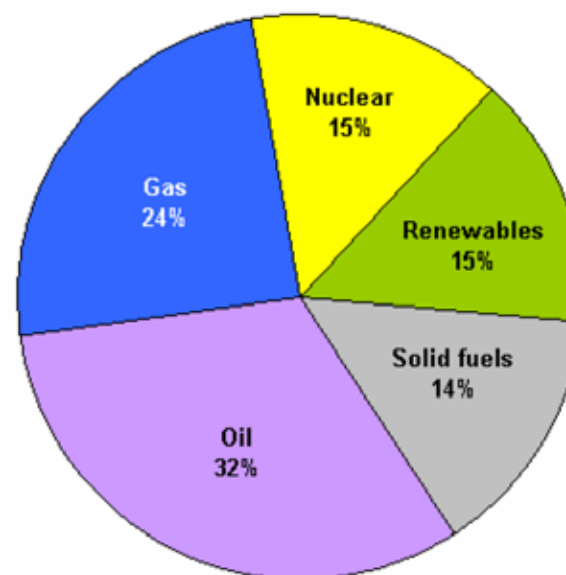
(pre-Fukushima analysis)

EU Gross inland consumption
2008



in % (1799 Mtoe; 2008)

EU Gross inland consumption
2030

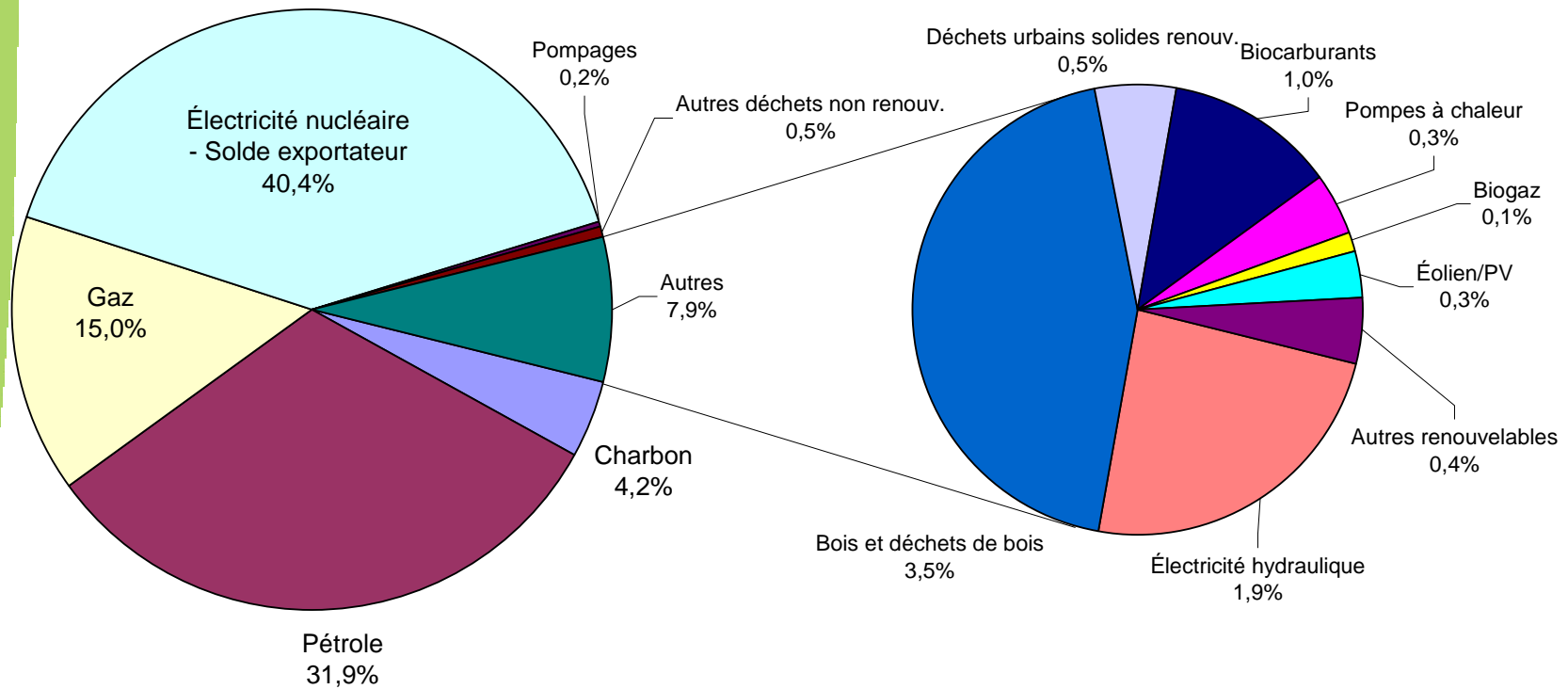


in % (1807 Mtoe; 2030 « business as usual »)

Fossil fuels represent up to 80% of our energy mix today. In a “business as usual” scenario, the share may still be 70% by 2030, but renewable sources are expected to account for an increasing proportion.

The French energy mix

259 Mtoe primary energy in 2009



Ambitious targets from “Grenelle de l’environnement” (laws of 2009 and 2010)

- Programme in favour of **renewable energies** :
+ 20 Mtoe by 2020
- **Energy efficiency programme**
eg 38% cut of energy consumption by m² in dwelling by 2020
- **National Round Table for energy efficiency**, second half of 2011
to reach and go beyond 20% improvement by 2020
- Consumption from 30 to 50% of renewable energies in the overseas territories in 2020
- National support for energy R&D:
 - Second-generation biofuels
 - Low carbon energies (CCS, renewables, clean vehicle, nuclear, etc.)

The Multi-year Investment Programme (MIP) for electricity, heat and gas

- **3 framework documents relative to investments in the energy industry**
 - they are required by law
 - they are updated at least once by every new elected Parliament
- **Where energy policy and individual decisions come together**
 - To set objectives for the development of infrastructures and production capabilities
 - To light the way and orientate economic operators in their investments
- **A follow-up committee with several workshops**
 - Electricity, gas and heat examined together
 - Participation of the State, companies (production and consumption), NGO's, trade-unions and members of Parliament

Electricity MIP : main directions

- *Uncertainties in 2020 on both offer and demand*
- *Room for manoeuvre is necessary to ensure safety, low emissions, and competitiveness*
 - *Two first EPR shall be put in operation. Operation of nuclear power plants after 40 years privileged but ASN, the nuclear safety authority, has the final word*
 - *Shutdown of the most polluting coal plants by 2015. New plants will not be authorised unless they are part of a CSC demonstrator*
 - *Many CCGT projects shall ensure semi-base load generation*
- *This room for manoeuvre, which is carbon-free, shall contribute through exportations to the global european effort to cut CO2 emissions*

Energies 2050

- *In order to define the future energy mix, a commission has been announced on September 6th 2011 by the French Minister of Energy with a kick-off on October 20th*
- *The commission is:*
 - *chaired by Mr Jacques Percebois (French University of Montpellier) and vice-chaired by Mr Claude Mandil (former IEA Executive Director)*
 - *composed of about 40 representatives of various stake-holders for energy policy:*
 - *Trade unions*
 - *Consumers*
 - *Professional unions (companies)*
 - *State energy bodies*
 - *High-level experts*

Energies 2050

- *The target of this commission is to assess the existing energy scenarios for France, from various origins, including scenarios made by international bodies*
- *A report will be prepared by this commission by January 2012*
- *This report « Energie 2050 » will analyse:*
 - *benefits and drawbacks of each energy scenarios with respect to the preoccupations of the French energy policy*
 - *their limits to represent the real energy situation (energy balance, modelisation coherence, economic consequences, citizen behaviour, etc.)*

Energies 2050

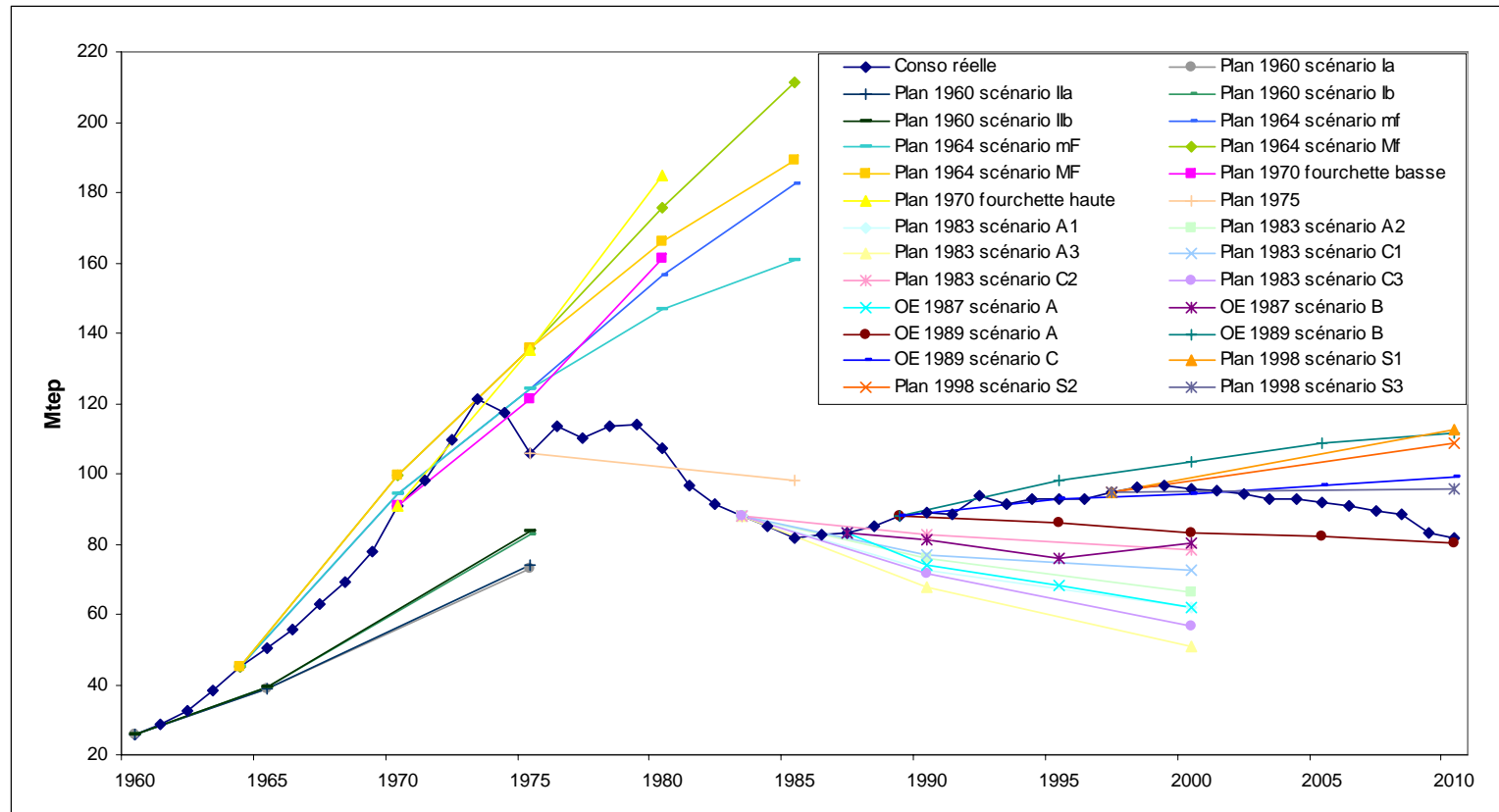
- *Among the scenarios to assess, the commission will explore in particular four options for France:*
 - *extending the life of the existing nuclear power plants*
 - *accelerating the transition to Gen 3 or Gen 4 reactors*
 - *gradual declining of the nuclear contribution to the power mix*
 - *total phasing out of nuclear power*

Energies 2050

- *The work will be conducted over a long term time horizon, ie 2050 with an intermediate look at 2030*
- *Results will be presented to the Minister of Energy and to the press by end of January 2012*

Lack of confidence within policy makers

- *Comparison of long term projections for oil consumption in France since 1960*



Source: Observatoire de l'énergie, Magali Humbert, 2005-2010

Main challenges for energy outlook

- *Difficulty to discriminate between scenarios for short run and scenarios with 40 years time horizon (2050)*
 - *Climate change*
 - *Heavy financial burden for investments*
- *Consequences of the economic and financial crisis*
- *Sensitive political issues in electoral debate*
 - *Nuclear*
 - *Employment*
- *Lack of assesment for modelisation tools*
 - *IIASA*
 - *NTUA*
 - *Enerdata*
 - *?*
- *Complexity to identify key assumptions (geopolitical, costs & prices, learning curves, breakthrough technologies, etc.)*
- *BAU vs reference scenarios*
- *Sensibility analysis: all energy futures are possible?*

Thank you for your attention!



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