Objectives and funding of the energy transition in France

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Ministère de la Transition écologique et solidaire

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The Energy Transition law for Green Growth (LTECV, 2015)

- Defines precise objectives for 2030-2050

<table>
<thead>
<tr>
<th>Metric</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHG emission (reference 1990)</td>
<td></td>
<td></td>
<td>-40%</td>
<td>/4</td>
</tr>
<tr>
<td>Final Energy Consumption (reference 2012)</td>
<td></td>
<td></td>
<td>-20%</td>
<td>-50%</td>
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<tr>
<td>Primary fossil fuel consumption (reference 2012)</td>
<td></td>
<td></td>
<td>-30%</td>
<td></td>
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<tr>
<td>Share of renewables in gross final energy consumption</td>
<td>23%</td>
<td>32%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of renewables in heat consumption</td>
<td></td>
<td></td>
<td></td>
<td>38%</td>
</tr>
<tr>
<td>Share of renewables in fuel consumption</td>
<td></td>
<td></td>
<td></td>
<td>15%</td>
</tr>
<tr>
<td>Share of renewables in final gaz consumption</td>
<td></td>
<td></td>
<td></td>
<td>10%</td>
</tr>
<tr>
<td>Share of renewables in electricity production</td>
<td></td>
<td></td>
<td></td>
<td>40%</td>
</tr>
<tr>
<td>Share of nuclear power in electricity production</td>
<td></td>
<td></td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td>Renewable Heat (and cold) delivered by district heating network</td>
<td></td>
<td></td>
<td></td>
<td>X5</td>
</tr>
</tbody>
</table>

- Creates a new planning tool for energy production (PPE)
  - First PPE adopted in October 2016, dealing with 2018 and 2023
  - Ongoing discussions for new PPE dealing with 2023-2028
2018: 2 ongoing prospective exercises

- **SNBC: Low Carbon National Strategy (demand and GHG side)**
  - Define carbon budget by sectors
  - 2050 horizon
  - In order to achieve:
    - Energy consumption / 2
    - Carbon neutrality in compliance with Paris Agreement

- **PPE: Pluri-annual Energy Planning (Production side)**
  - Define energy targets by technologies
  - 2023 and 2028 horizon
  - In order to achieve:
    - 2030 targets
SNBC: Carbon neutrality is really ambitious

- CO2 emission trajectory

- Energy consumption

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(1) **2015-2025**: consequences of current policies

(2) **2025-2035**: progressive integration of new measures

(3) **2035-2050**: more disruptive measures are necessary
Energy efficiency Investments

- 23 Mds€ / year between 2015 and 2035
  - 18 Mds€ for building sector
    - 62% for households, 20% for businesses
      - 9Mds € for building refurbishment and heating system
      - 5Mds € for tertiary sector
      - 3.6 Mds€ for new buildings
  - 3 Mds€ for transportation sectors
  - 2Mds€ for industry

- Main policies:
  - Energy Saving Certificates
  - Tax credit

<table>
<thead>
<tr>
<th>CUMAC TWh</th>
<th>2016-2017</th>
<th>2018-2020</th>
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<tbody>
<tr>
<td>Total obligations</td>
<td>850</td>
<td>1600</td>
</tr>
<tr>
<td>for precarious households</td>
<td>150</td>
<td>400</td>
</tr>
</tbody>
</table>
Public support: mainly on electricity

Main policies: indirect carbon tax (83€/tCO2 in 2023)
- For electricity and biogas: FIT → market premium
- For heat: Tax credit + Heat Fund + VAT discount

Estimated amount of public support for renewable heat and power

Source: Cour des Comptes, 2018
Electricity production

- **How-much?**
  1. **Important need of public support for renewable:**
     - Passed FIT contracts represents 120€B from 2017
     - Between 5 and 32 €B of new investments
     - Public support depends on electricity market price evolution

- **2. ccgt: objective no more**

- **3. Nuclear power:** life extension depends on ASN decisions awaited in 2020

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**Yearly public expenses for renewable power**

- **already contracted**
- **New for objective 2023**
- **New for objective 2028**
Other renewable

- How-much?
  1. Ambition to boost renewable heat development
  2. Less intensive in direct public support
  3. Heat fund should be increased

Investment need for electricity grid development for 2017-2020 (source TURPE)

- For electricity transport: 1 496 M€/an

- For electricity distribution: 5 036 M€/an
  = 856 M€/an: Linky Project
  + 1521 M€/an: connection et reinforcement
  + 1925 M€/an: grid retrofit
Thank you for your attention