The Overview of Current French Environmental Policy in Transport Sector

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Outline

1) Emergence of « Grenelle de l'Environnement » in the context of French Environmental Policy

Main measures and outcomes of the Grenelle related to the transport sector:

2) Incentives / economic instruments towards sustainable mobility
3) Transport infrastructure investments
4) Additionnal tools
1) Emergence of « Grenelle de l'Environnement » in the context of French Environmental Policy

- 1.1. International context on environmental policies
- 1.2. Transport sector and specific targets
- 1.3. How the Grenelle emerged in France and how it worked
1.1. Environmental policy instrumentation in France

- Suspected impact of human activities on climate change

Two main eras in the French context, before Grenelle: 70's and 90's

- 1/3 of policy instruments are derived from international laws or agreements (European or not)

Source: Bozonet Halpern, 2013
1.1. Legal framework in France: an overview

- Early environmental laws
  - 1960 on National Parks
  - 1964 on Water
  - 1975 on Waste
- 1996: LAURE law (Law on air and rational energy use)
  - National plan on atmosphere
  - Regional plans on air quality
  - «PDU» (Plan de déplacements urbains): (Urban Transport Plan) mandatory in urban areas > 100k
- 2009-2010: Grenelle laws (derived from 2007 framework)
1.2. International context on energy consumption and greenhouse gases emissions due to transport

Kyoto protocol (1997) aims at reducing CO2 emissions
- Introduction of emission trading system
- Aviation could be included from 2016
- Road is excluded

- European level: climate and energy package (2007)
  - Reduce greenhouse gases by 20% by 2020
  - Increase energy efficiency by 20% by 2020
  - Reach 20% of renewable energy by 2020
  - Reach 10% of biofuels in vehicles consumption by 2020
- France specific objectives: reduce CO2 emissions by a factor 4 on 2050 compared to 1990

- Transport represents 32% of the final energy use in France in 2012, compared to 29% in 1990 (ADEME)
- It is the main source of CO2 pollution in France (36% in 2012, ADEME), stable / growing share.
- Heavy dependency on fossil energy for road transport
1.2. Necessity for action on urban sprawl

- Urban sprawl intricated with transportation networks
- Extensive use of agricultural land
- Non-sustainable mobility (extensive use of car, long distances of travel)
- Better account of natural risks
- « Trames vertes » and « Trames bleues »
1.2. Need for portfolio of solutions

- the objective set by the Grenelle law of 3 August 2009 is a reduction in emissions of greenhouse gases by 20% by 2020 for the transport sector (Article 10). This cannot be achieved only by a change in transportation network, other measures, beyond this field must be studied (Schéma National d'Infrastructures de Transport, 2011)

**Variety of environmental issues:**
- Global warming
- Local pollution
- Urban sprawl
- Biodiversity

**Source of CO2 emissions for transport, worldwide**
- Road: 73%
- Maritime: 11%
- Aviation: 11%
- Rail: 2%
- Other: 3%

(IEA, IIF, 2008)

Key point: Road transportation is a highly segmented sector, for which different technologies and measures are relevant for reducing emissions, depending on the segment. Due to their relative weight in overall emissions, some segments, such as urban passenger mobility, offer greater leverage.

Source: Climate Economics Chair from Union Routière de France
1.3. How did Grenelle de l'Environnement appeared on the agenda?

- 2007 French presidential election campaign: «pacte écologique» from Nicolas Hulot (tentative candidate from ecologist party)
- Under Sarkozy, from May 2007: Juppé and Borloo successives ministries of Environment

Historically, «Accords de Grenelle» marked the end of the 1968 student riots in Paris
1.3. How it worked: concertation phase 1 (summer 2007)

- Five experts panel
  - NGO – environmental and non-environmental associations
  - French Ministries
  - Delegates from unions
  - Employers organizations
  - Local authorities
- Meetings driven by French Environmental Office
- Approx. 20 regional public meetings until Nov. 2007: around 15,000 attendants overall (Boy, 2010)
- Electronic consultations: around 15,000 extra contributions
- Debate at the French parliament: October 2007
1.3. Concertation phase 1 (2007)

- Six thematical work groups, made up members of the five panels
  - Climate change mitigation and energy demand management
  - Biodiversity and natural resources
  - Environment and health
  - Sustainable production and sustainable consumption
  - Ecological democracy
  - Green economy
- Each group is made of 40 to 60 members
- 4 round tables on 24/25 October 2007 close the phase 1
1.3. Concertation phase 2 (2007-2008)

- Subsequent phase: 30 Operational Comities, incl.
  - Freight multimodal transport
  - High speed rail
  - Urban transport
  - Research

- 30 to 40 members (French State and employers organisation are more represented – 70% of members against 40% in phase 1, Boy, 2010)

- Result: effective measures submitted (and voted at a vast majority) at parliament

Engagement of major firms towards sustainability
1.3. Outcomes: the two «Grenelle» laws

- Law 2009-967 of August 3, 2009 on the implementation of the Grenelle agreements (Grenelle 1)

- Law 2010-788 of July 12, 2010 on the national commitment in favour of the environment (Grenelle 2)
  - Revise legislation on planning and construction, transport, energy, biodiversity, risks, health and waste, governance (Bozonnet and Halpern, 2013)
1.3. What has been decided?

- Main outcomes
  - The concertation itself: large participation
  - Energy efficiency in buildings
  - Labels of energetic efficiency
  - Transport infrastructure investments
  - Bonus / Malus scheme

Breakdown of investments for each major area, 2009-2020, in billions of Euros
2) Incentives / economic instruments towards sustainable mobility

- 2.1. Congestion charge / écotaxe
- 2.2. Bonus Malus scheme (2008)
- 2.3. Change of behaviour: towards sustainable mobility
- 2.4. Labels of energy efficiency
2.1. Congestion charge / écotaxe

• Grenelle law authorized experimentation for urban areas with more than 300,000 inhabitants (a dozen cities are concerned)
• There is currently no congestion charge scheme implemented in France
• Motorway in France are in general tolled (financing scheme), gas is taxed at standard OECD levels
• Ecotaxe was supposed to be introduced in 2014 in France (taxing freight transport at level from 0.025€ per km to 0.20 € per km depending on number of axles) – similar to Lkw Maut tax in Germany (2005) and internalize the external costs of CO2 emissions due to road transport (starting with freight road transport)
2.2. Change of behaviour: towards sustainable mobility

- Carsharing officially supported
- Ecodriving
  - Knowledge mandatory to obtain driving licence from 2010
  - Increased effort towards freight drivers
- PDE (Plan de Déplacements d'Entreprise): organizing mobility towards large companies
- Promoting walking and cycling with urban and periurban areas
2.3. Bonus Malus scheme (2008)

Incentive scheme to accelerate change of the automobile fleet
- polluting cars: additional taxation (malus) for buyers
- green cars: reduction up to 15% of the transaction cost (bonus)

Thresholds and primes aims financial neutrality
As for 2014: 11 levels of malus, 3 levels of bonus
- malus for vehicles with emissions > 120 gCo₂ / km (150€)
- malus for vehicles with emissions > 150 gCo₂ / km (1600€)
- malus for vehicles with emissions > 200 gCo₂ / km (8000€)
- bonus for vehicles with emissions < 90 gCo₂ / km (150€)
- bonus for vehicles with emissions < 20 gCo₂ / km (6300€ within 27% of price)
2.4. Labelling of energetic efficiency in housing and transport

- One outcome from Grenelle, in lane with European regulation
- Energetic label for buildings (each transaction, incl. renting)
- For transport sector:
  - Energy labels for tyres
  - Energy labels for cars

approx. 10% difference in fuel consumption
2.4. CO2 labelling for cars

- CO2 emission label is mandatory to be able to sell a new vehicle.
- Effects of bonus / malus scheme visible on the right hand side.

![Graph showing CO2 emissions categories and years from 2002 to 2012.](image)
2.4. CO2 consumption display

- Mandatory as for 2014 for every travel purchase
- Personal CO2 calculator from ADEME
3) Transport infrastructure investments

3.1. SNIT : Schéma National d'Infrastructures de Transport

3.2. Support to local transport investments

3.3. Grand Paris metro

Tableau 6 : récapitulatif des volumes d’investissement (y compris matériels roulants ferroviaires) et de dépenses publiques dans le scénario de référence et le scénario « Grenelle », sur la période 2009-2079 (en Md€2008)

<table>
<thead>
<tr>
<th>Période</th>
<th>Investissements Md€2008</th>
<th>Financements publics Md€2008</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grenelle</td>
<td>Référence</td>
</tr>
<tr>
<td>2009-2039</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Route</td>
<td>367</td>
<td>411</td>
</tr>
<tr>
<td>Ferroviaire</td>
<td>232</td>
<td>129</td>
</tr>
<tr>
<td>Urbain</td>
<td>124</td>
<td>85</td>
</tr>
<tr>
<td>Autres</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>Total</td>
<td>766</td>
<td>669</td>
</tr>
</tbody>
</table>

Financial effort towards modes alternatives to individual automobile 2009 - 2039
3.1. Transport infrastructure provision

- Article 16 of Law No. 2009-967 of 3 August 2009 relating to the implementation of Grenelle Environment states that "a national scheme of transportation infrastructure will fix the guidelines at the national level for maintenance, modernization and development of networks aiming at reducing environmental impacts and consumption of agricultural and natural areas, and in terms of aid provided to local authorities for developing their own networks." (SNIT, 2011)

- No more motorway construction unless it is already decided or of local interest
3.1. SNIT – High speed rails and major links

- SNIT stands for National Plan of Transport Infrastructures
- 2000 km new HSR lines to start before 2020
- Study for additional 2500 km to start after 2020
- 100 000 M€ supplementary investment in 30 years compared to baseline scenario (Briard et al., 2010, DG Trésor)
3.1. SNIT – Freight corridors

- Support to freight transport by train:
- Two North / South corridors
- Accomodate 1km long trains
- Support to intermodal freight platforms
3.2. Support to local transport infrastructures

- Financial participation of French state for projects that are acknowledged of local interest and payed for at the same level by local authorities

Source: Briard et al., 2010
3.3. Greater Paris metro

- Urban core densification around Paris capital
- Economic clusters
- Increased mode share for transit
- 25 Billion € scheme

Planned « Réseau de Transport Public du Grand Paris » (2025)
4) Additional tools

- 4.1. Local environmental policies
- 4.2. New evaluation tools taking better account of environmental externalities
- 4.3. Additional support to research
4.1. Local transport policies and state support / legal framework

- French context: State / Region / Districts / Communes
- LOTI law (1982) creates PDU: Urban mobility plan
  - From Grenelle: mandatory environmental evaluation
- « Trame verte et trame bleue » (avoiding urban cuts to preserve biodiversity)
- PCET (Climate and Energy Plan for local authorities) are mandatory for regions, departments, urban communities, agglomeration and municipalities and communities of municipalities with more than 50,000 inhabitants must have adopted a territorial climate and energy plan before December 31, 2012. "(Art 75)
4.1. Main measures from Grenelle in relation with urban planning

(source: Ministry of Ecology, 2011)

- Allow the effectiveness of National policies by a directive on territorial planning and sustainable development (Article 13)
- Entrust the planning of new documents objectives of sustainable development (Article 14)
- Extend the scope of the environmental assessment (Article 16)
- Complete and affirm the role of SCOT and PLU in particular PLU on several communes can take the place of PLH and PDU (Articles 17 and 19)
- Increase the COS coefficient (Article 20)
4.1. Technical tools at local level

- Exemple in aviation sector: increase of 300m of the vertical threshold for planes before landing at Paris airports

- Aim is to reduce noise pollution, this scheme was decided after Grenelle de l'Environnement and implemented in nov. 2011
4.2. Better account of environmental externalities in transport appraisal

- French ministry now recommend the internalisation of:
  - Noise
  - Greenhouse gases
  - Diminishing biodiversity
  - Other externalities

- French approach historically based on cost – benefit analysis:
  - Recent introduction of multicriteria analysis
  - Application to projects such as Grand Paris metro
4.2. Greater Paris métro environmental assessment

- The Act of 3 June 2010 on the Grand Paris for the first time applies these principles to a major decision on transportation infrastructure by requiring that the environmental report from the environmental assessment is a component of the dossier submitted by the building order in the public debate,

- As well as socio-economic assessments. The Strategic Environmental Assessment Screening provided by law, was carried out in three stages:

  1) it was initially based on the most complete possible knowledge of the initial state of the environment, for all topics that may be impacted: air quality, noise, water resources, natural environments, mineral soil and sub-soil, agriculture, natural and technological risks, architectural and landscape heritage.

  2) the selected study area for this comprehensive analysis involved more than 160 municipalities and a time integrated neckering a minimum width of 3 km, thereby identifying the scenario's most relevant plots and justify the choice;

  3) the impact of the implementation of the project were then modeled and evaluated during the construction phase and 2035, about 10 years after the opening of automatic metro
4.3. Support to scientific research

Transport sector: PREDICT (Research and Innovation Scheme in Transport)

- Coordinate funds with ANR (French Research Agency) and ADEME (French Environment and Energy Management Agency) on:
  - GO1: Energy and Environment
  - Electric and low emission vehicles
  - Research demonstrator
Where we are now

- International, European and French contexts are interrelated.
- Dozens of measures have been undertook.
- Real dialogue has emerged.
- More environment dimensions are took into account in transport appraisal
- Some short-term effects could be observed (ex. bonus-malus), even if the causality can be debatable.
- Long-term investments are partly engaged, partly not-engaged in a context of financial crisis.
- Long-term effects are unclear, in particular the ability of Grenelle to impulse new economic sector
Thank you – Domo!
どうもありがとうございました

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