Energy efficiency in transport: policy issues and contents of the brochure for transport

Andrea Ricci, ISIS
WP4: Analysis and reporting on specific energy efficiency issues

Task 4.2: «Transport energy demand and policies»

Output: **Brochure on transport**

D4.2: «Report on energy efficiency trends and policies in transport»

*The brochure will be put on the website for public access*
WP4: Analysis and reporting on specific energy efficiency issues

Annex I:
Overview of the main trends in terms of energy use, energy efficiency achievements and new policy measures in the transport sector.
WP4: Analysis and reporting on specific energy efficiency issues

Specific focus on:

- Promotion of non-conventionally fuelled vehicles
- Reduction of transport demand
- Modal shift

MOBILITY
Structure of the brochure

• **Section 1: EU policy on Transport**

• **Section 2: EU trends in transport:**
  - General Overview (Consumption and Emissions at **EU level**)
  - Non Conventional fuels (**EU level** - trends)
  - Mobility (Transport demand and Modal shift at **EU level**)

• **Section 3: Identification of noteworthy cases**
  - General (Consumption and Emissions at **National level**)
  - Non Conventional fuels (Consumption at **National level**)
  - Mobility (Transport demand and Modal shift at **National level**)

• **Section 4 (Annex): How the Odyssee-Mure website can help in the analysis (facilities)**
Section 1- EU policy on Transport

1. Background
   o Brief introduction
   o History of EU policy in transport
   o Milestones

2. Focus on «White Paper on transport 2011»:
   Roadmap to a single European transport area towards a
   competitive and resource-efficient transport system
Section 1- EU policy on Transport

3. Research and Innovation: to achieve intelligent, green and integrated transport systems (Horizon 2020)

4. EU legislation on transport:
   - Promotion of clean and energy-efficient road transport vehicles (Directive 2009/33/EC)
   - Emission performance standards new passenger cars (Regulation 443/2009/EC)

5. Policy measures in members states (statistics)
Section 1- EU policy on Transport

5. Policy measures in members states (statistics):
The MURE database contains examples of 479 measures on transport (Last project 427), 377 of them (79%) are «ongoing».

*Sum is higher than 100% as measures may target more than one aspects
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• **Section 4 (Annex): How the Odyssee-Mure website can help in the analysis (facilities)**
Section 2- EU trends in Transport

a. **General Overview** (Consumption and Emissions at EU level)

b. **Non Conventional fuels** (EU level -trends)

c. **Mobility** (Transport demand and Modal shift at EU level)
Section 2 - EU trends in Transport

a. General Overview

Reduction of total consumption: 2.1% (mostly due to road transport)
Section 2 - EU trends in Transport

a. General Overview

Reduction of total consumption (-2%) due to:
- technological improvement (vehicles efficiency)
- improvement in “traffic efficiency”

Reduction of total CO2 Emissions (-4%) due to:
- technological improvement (vehicles efficiency)
- improvement in “traffic efficiency”
- use of alternative fuels
Section 2 - EU trends in Transport

b. Non Conventional fuels

2005-2011:
- % Biofuel consumption increases (1% - 4%)
- % Consumption other fuels fairly constant

BIOFUEL consumption in TOTAL ROAD TRANSPORT IN 2011: 5%
Section 2 - EU trends in Transport

c. Mobility

Improvement in "transport efficiency"

Traffic efficiency_passengers
Variation (reference year: 2005)
Section 2 - EU trends in Transport

c. Mobility: Transport Demand and Modal shift - Passenger

Total passenger traffic is increasing (mostly due to cars traffic’s increase +4%) despite the sharp increase in passenger traffic of trains, metro and trams, traffic for public mode decreases (cars +4%)

Modal shift - passenger 2005-2011: -1,0%
Section 2 - EU trends in Transport

c. Mobility: **Focus on CARS**

- **Annual distance travelled by cars [km/yr]**
  - 2005-2011: -5%

- **Stock of cars [M]**
  - 2005-2011: +9%

- **Cars traffic**
  - 2005-2011: Passenger-kilometers Cars: +4%

**Much more people use cars (more efficient) to make shorter trips**
Section 2 - EU trends in Transport

c. Mobility

Improvement in “transport efficiency”

Traffic efficiency_goods
Variation (reference year: 2005)

- Consumption /tkm
- tkm
- Consumption

-0.1%
-2.2%
-2.1%
Section 2- EU trends in Transport

c. Mobility: Transport Demand-goods

ROAD freight transport DECREASES in favour of RAIL and WATERWAYS transport

Modal shift- goods (Share of rail and inland waterways freight transport in total freight transport) :

- ROAD: -3,3%
- Rail: +1,6%
- Inland waterways: +1,8%

2005-2011: +3,1%
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Section 3 - Identification of noteworthy cases

a. General Overview

81% consumption due to road transport
Section 3 - Identification of noteworthy cases

a. General Overview

Variation of Unitary consumption per ROAD vehicle (2005-2011)

(*)Average estimation: Tot road Consumption/ total stock road
Section 3- Identification of noteworthy cases

a. General Overview

% Variation of Stock of CARS (2005-2011)

Stock ROAD per type of vehicle [%]

- CARS: 78%
- BUSES: 12%
- TRUCKS & LIGHT: 0%
- MOTOCYCLES: 10%
Section 3 - Identification of noteworthy cases

b. Alternative fuels

% of biofuel consumption on total transport consumption 2011

% biofuel consumption in transport in 2011: EU27 4%
Section 3- Identification of noteworthy cases

b. Alternative fuels SPAIN

% Biofuel consumption

<table>
<thead>
<tr>
<th>Year</th>
<th>Consumption</th>
</tr>
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<tbody>
<tr>
<td>2005</td>
<td>0.7%</td>
</tr>
<tr>
<td>2006</td>
<td>0.4%</td>
</tr>
<tr>
<td>2007</td>
<td>0.9%</td>
</tr>
<tr>
<td>2008</td>
<td>1.5%</td>
</tr>
<tr>
<td>2009</td>
<td>2.8%</td>
</tr>
<tr>
<td>2010</td>
<td>3.9%</td>
</tr>
<tr>
<td>2011</td>
<td>4.8%</td>
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</table>

<table>
<thead>
<tr>
<th>Measure Code</th>
<th>TRA-SPA45</th>
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<tbody>
<tr>
<td>Country</td>
<td>Spain</td>
</tr>
<tr>
<td>Title</td>
<td>EU-related: Promotion of Biofuels or other Renewable Fuels for Transport (Directive 2003/30/EC) - Mandatory Use of Biofuels</td>
</tr>
</tbody>
</table>

EU Directive on Biofuels (2003/30/EC)
Mandatory use of biofuels in Spain
Starting Date 2008
Section 3 - Identification of noteworthy cases

c. Modal shift_FRANCE

ROAD Traffic Efficiency_Passengers

% Variation (2005-2011)

<table>
<thead>
<tr>
<th>Road Consumption</th>
<th>Unitary Road Cons</th>
<th>Stock of cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1,2%</td>
<td>-6,8%</td>
<td>+4,8%</td>
</tr>
</tbody>
</table>

More efficient cars

Since 2005 to 2012 about 45% of the stock of cars was renewed

Title of the measure: FRA21 Registration surcharge for cars

To encourage the purchase of vehicles with low CO2 emissions levels, a new tax was implemented on July 1, 2006: a registration surcharge for cars.
Section 3- Identification of noteworthy cases

c. Modal shift_FRANCE

Public Transport Traffic 

Title of the measure:
FRA43 Multimodal information for passengers

General description
Multimodal information for passengers aims at improving the use of available means of transport:
- by improving the occupancy rate by the use of car sharing
- by achieving a better synergy between ways of transportation...
- has been made responsible for half of the cost of transport season tickets. This measure had previously existed only in Ile-de-

|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
CONCLUSIONS

1. Measures on transport can have a visible impact on indicators

2. Some good measures can contrast with other phenomena that may nullify the impact (i.e. Poland)

3. Most measures on transport are Local: it is difficult to verify the impact at national level (ODYSSEE-MURE with Local measures???)

4. .....???
Thanks for your attention!

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Trends in GDP: impact of the 2009 crisis