Environmental Taxes in the EU
Outlines

I Definition, purpose and trends in the EU

II The Energy ITR

III Have green tax reforms had any visible impact on the energy intensity of GDP?

IV The EU harmonisation and the carbon tax debate
I Definition of Environmental Taxes: 3 sub-groups

- **Energy taxes**
  - Transport fuel taxes: petrol, diesel
  - Stationary use: fuel oils, natural gas, coal and electricity
  - CO2 taxes (not in pollution tax bcse not separable from energy taxes)

- **Transport taxes** = vehicles ownership taxes
  - one-off taxes related to imports or sales
  - recurrent taxes such as an annual road tax

- **Pollution/resource taxes**
  - taxes on measured or estimated emissions to air and water, management of solid waste and noise
  - Tax the use of a natural resource
Purposes

- **Increase revenues** to finance social policies. Energy taxes were originally used purely as revenue raising instruments, without environmental purposes.
- **Substitution**: Reduction in labour or income taxes.
- **Efficiency**: incentives to save energy or to reduce pollution: make prices reflect the real costs for society.
- debate on the « Double Dividend » (improve efficiency and reduce the tax burden on labour)
Relative size of each tax source

- In environmental tax receipts= 302,9 bn € (2007)
  - **Energy** = 75% including transport fuel tax = 80% (OM) to 90 %(NM) (electricity/ gas benefit from exemptions or small taxation rate)
  - **Transport** < 25%
  - **Resource/pollution** = 4% (marginal role)

- In total taxes and social contributions= 4,908 bn € (2007)
  - **Energy**= 4,5%
  - **Transport**= 1,5%
  - **Resource/pollution** =0,2%
  - **Total**= 6,2%
Almost all countries range between 2 or 3% of GDP. Mainly energy tax, except in Malta, Cyprus, Denmark and Ireland where transport tax are substantial (in % of total tax).

Source: Commission services
Heterogeneity among EU


<table>
<thead>
<tr>
<th>year</th>
<th>In % weighted GDP</th>
<th>In % total tax receipts</th>
</tr>
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<tbody>
<tr>
<td>1980</td>
<td>0,5</td>
<td>-</td>
</tr>
<tr>
<td>1999</td>
<td>2,8</td>
<td>7</td>
</tr>
<tr>
<td>2007</td>
<td>2,5</td>
<td>6,2</td>
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</tbody>
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- New members differ from old countries in EU.
  - EU15: sharp increase between 90 and 94
  - New members: sharp increase around 2004, with taxes higher than strictly required.

- Since 1999, environmental tax revenues (in the weighted average) have decreased both in relation to GDP and as a share of total taxation (by – 0.3 % and – 0.8 % respectively).
- Still an increase in small countries: Denmark, Belgium, Cyprus
The moderate decrease in the EU average conceals a number of opposing changes in composition among Member States. → convergence in tax-to-GDP

Denmark: strong increase in corporate hydrocarbon tax
Convergence in taxation rate and homogeneisation

- Minimum tax rates for fuel, electricity and natural gas are set by the **Energy Tax Directive** (2003/96/EC). The highest floor is for fuel.
- Differences in the taxation of natural gas and electricity still persist (country derogations)
- The shares are relatively stable over time within countries → decomposition of Energy Taxes
Fuel taxes shares spread from 50 to 90% of energy tax revenues. It depends on electricity and natural gas taxation.
Evolution of environmental tax revenues

A tendency to decrease in % GDP: Why?

- Nominal tax per unit of consumption (not indexed on inflation except in Denmark)
- If disincentive is efficient, adaptation of behaviours $\rightarrow$ erosion of tax base
- Energy budget share decreases with growth
- Increase in energy prices leads to a decrease in quantity consumed.
- Gvt = reluctant to increase tax: costly
- Other mechanism may be substitute for some purpose EU CO2 emission permit, road duties (not encountered in taxation) $\rightarrow$ IMPLIED TAX RATE
II Implicit Tax rate for energy

- Difficult to build → mainly for energy
- **Which denominator?**
  - Final energy consumption aggregating different energy sources on the basis of each source's net calorific value, expressed in tonnes of oil equivalent
- **Which numerator?**
  - the revenue from all energy taxes
- Different from ITRs on labour, consumption, and capital = dimensional numbers while the ITR on energy is expressed in **euro per tonne of oil equivalent**.

- **Real ITR** by taking into account inflation (ex: a constant nominal ratio is equal to a decrease in real term)
  → An average decrease of real ITR in weighted EU average
Comparison remains difficult because a low ITR may have 2 different significations:

- Low environmental taxation
- High taxation of pollutant energy and shift of consumption towards green renewable energy which are hardly taxed.

A country with a large share of renewable energy will have a lower ITR on energy than one which relies largely on carbon-based energy sources.
III Have green tax reforms had any visible impact on the energy intensity of GDP?

- Yes until 2003 on average
- Unclear starting from 2003
- No reduction of Labour ITR with the increase of Energy ITR
- But, diverging trends are summarized in mean here → observe inverse relationship Germany, Estonia, Ireland, Lithuania, the Netherlands, Slovakia and Sweden (2000-2007)
IV The EU Harmonisation and the carbon Tax Debate

- Environmental tax = 2,5% GDP and 6,2% of total taxes,
- Adopting a normative view, should we increase it? In which purpose?
- The “greenest” countries already have a carbon tax: Sweden, Finland, the Netherlands, Denmark

**Harmonization among EU members:** the carbon tax debate (would be included in energy tax)
  - At the frontier
  - Same tax rate for all: A reform of the Directive on Energy taxation is supported by the actual Tax Commissioner: New tax Base: depending on CO2 emission per tonne but also on energy content of fuels.
**Carbon Tax in France**

- **Contribution Climat Energie** (Rocard report) to give incentives to consume environmentally-friendly energy, with lump-sum compensation for households (37€ for singles, 100€ for a four-person family, only for the 60/70% the poorest, those living out of a “public transport system” will receive 20€ more).
- A predictable evolution of taxation to allow household and firms to adapt: evolution from 32€/ton of CO2 until 100€ in 2030 (Quinet Report).
- But brought back to 17 €.
- Taxation of all energy and fuels (with reduction for wood sector) → Supported by both households and firms but real tax incidence?
- Bring about 8 to 9 bn
- Rejected by the Constitutional Council because it will exclude the more polluting firms until 2013 (those which are submitted to the EU CO2 emission trading system)
2,5% + tendency to fall
6,2%
Harmonisation: tax rate and/or tax base
Creation of carbon tax at the frontier?
Thank you !!!

Références:
- Taxation trends in the European Union Data for the EU Member States and Norway, 2009 edition
- Rapport Rocard
- site EUROPA