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AEBIOM discussion paper prepared for the workshop on Energy Taxation on 15 November in Brussels

Revision of Energy Taxation Directive and its' impact on bioenergy fuels

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1. Main elements of the EC proposal

This EC proposal published on 13 April 2011 aims to revise the directive 2003/96/EC on taxation of energy products and electricity. The Council directive 2003/96/EC introduced energy tax for energy products. The aim is to have this revision implemented by 2013 when the third phase of Emission Trading Scheme (ETS) starts.

Within this revision, the **current energy tax** is split into **two parts**:

- **CO_2 tax** would be based on CO_2 emissions of the energy product and would be fixed at €20 per ton of CO_2. It will be applicable to energy products outside the ETS system (energy production below 20 MW) and this element does not apply to electricity. CO_2 emission factors for all fuels are shown in **ANNEX I**. A CO_2 tax will, for the first time, be applicable to the sectors that are excluded from CO_2 taxation within the ETS (transport, households, agriculture and small industries).
- **Energy consumption tax** would be based on energy content, i.e. on the actual energy that a product generates measured in Gigajoules (GJ). The minimum tax rate would be fixed at €9,6/GJ for motor fuels, and €0,15/GJ for heating fuels (or motor fuels for agriculture and forestry as indicated in Article 8 (2). This will apply to all fuels used for transport and heating.

According to the EC, this separation ensures better the energy savings via energy consumption tax and encourages the use of green and renewable energy via CO_2 taxation.

2. Transport fuels

2.1 Biofuels

Currently, the directive 2003/96/EC does not provide proper taxation of biofuels but allows/pushes Member States to exempt or reduce excise duties to promote biofuels. The new EC proposal, however, will lead to lower taxation of biofuels than under the current system in which biofuels are in general taxed at the rate of the fossil fuels they replace. Also, under new proposal, biofuels would be taxed on the basis of their own – generally lower – energy content.

With the new proposal, the biofuels (ethanol, biodiesel, pure vegetable oil and bio-ETBE) will receive a 'natural' advantage as they will be exempt from CO_2 tax:

	CO_2 part	Energy part	Total
Petrol (EUR/1000l)	45,5	313,6	**359**
Ethanol (EUR/1000l)	0	201,6	**201,6**

	CO_2 part	Energy part	Total
Gas oil (EUR/1000l)	52,1	337,9	**390**
Biodiesel (EUR/1000l)	0	316,8	**316,8**

Only sustainable biofuels, however, will be a subject to this CO_2 tax exemption. There is also a possibility for Member States to prolong fiscal advantages for biofuels until 2023. Long transitional periods for the full alignment of taxation of the energy content, until 2023, will leave time for industry to adapt to the new taxation structure.

2.2 Biogas

Biogas for transport will be exempt from the CO_2 tax (CO_2 emission factor equals 0 according to Commission Decision 2007/589/EC 6). However, only sustainable biogas (according to Article 17 of RES directive 2009/28/EC) for transport will be exempt from this tax.

General energy consumption taxation would be based on the net calorific value of biogas which equals **50 MJ/kg** as laid out in Annex II of Directive 2006/32/EC 7.

LPG (EUR/1000 kg)	**125**	125	311	**500**
Natural Gas (EUR/GJ)	**2,6**	2,6	6,6	**10,7**
Biogas for transport (EUR/1000kg)	**MS competence**	75	275	**480**[1]
Biogas for transport (EUR/1000kg) in agriculture, forestry etc - Article 8 (2)	**MS competence**	7,5	7,5	**7,5**[2]

2.3 Taxation rates for all motor fuels including biofuels and biogas

It is worth to note that diesel (and kerosene in similar way) energy tax will increase over time from 341 Euros/1000 litres in 2013 to 390 in 2018 while petrol energy tax will remain the same. LPG and natural gas energy tax will increase five times compared to current rate.

Overall motor fuels rates:

	Current rate	1/1/2013	1/1/2015	1/1/2018
Petrol (EUR/1000l)	**359**	359	359	**359**
Diesel (EUR/1000l)	**330**	341	362	**390**
Kerosene(EUR/1000l)	**330**	356	377	**392**
LPG (EUR/1000 kg)	**125**	125	311	**500**
Natural Gas (EUR/GJ)	**2,6**	2,6	6,6	**10,7**
Ethanol (EUR/1000l)	**359 or less**	201,6	201,6	**201,6**

[1] EBA and AEBIOM calculation
[2] EBA and AEBIOM calculation

Biodiesel (EUR/1000l)	**330 or less**	316,8	316,8	**316,8**
Pure vegetable oil (EUR/1000l)	**330 or less**	316,8	316,8	**316,8**
Biogas for transport (EUR/1000kg)	**MS competence**	75	275	**480**[3]
Biogas for transport (EUR/1000kg) in agriculture, forestry etc - Article 8 (2)	**MS competence**	7,5	7,5	**7,5**[4]

The rate of the energy component depends on whether the energy product is used as a motor fuel (in which case it is € 9,6 per GJ, to be reached gradually by 2018) or motor fuel used for the purposes such as agriculture, forestry etc. as set out in Article 8(2) of the Energy Taxation Directive (ETD) (in which case it is **€ 0,15 per GJ as of 2013**). This component also applies to electricity.

3. Heating Fuels

The directive indicates that all heating and transport fuels will be taxed. However, solid biomass fuels and biogas were not under the scope of 2003 directive and continue to be excluded from the scope of the directive from both: CO_2 and energy consumption tax.

The rate of the energy component for heating fuel (or motor fuel used for the purposes set out in Article 8(2) of ETD) is **€ 0,15 per GJ as of 2013**. This component also applies to electricity.

New minimum energy taxation (CO_2 taxation is, however, the same) for heating fuels from 2013 will be much lower than for motor fuels due to social and economic considerations.

Heating fuels and motor fuels for agricultural, forestry etc purposes	**Current minima**	**Minima proposed in current ETD units applicable as of 2013**
Gas oil (€ per 1000 l)	21	57,37
Heavy fuel oil (€ per 1000 kg)	15	67,84
Kerosene € per 1000 l)	0	56,27
LPG (€ per 1000 kg)	0	64,86
Natural gas (€ per GJ)	0,15	1,27
Coal and coke(€ per GJ)	0,15	2,04
	Current minima	**Minima proposed in current ETD units applicable as of 2013**
Electricity (€ per MWh)	0,5	0,54

An example of tax calculation of heating fuels can be found in ANNEX II

[3] EBA and AEBIOM calculation
[4] EBA and AEBIOM calculation

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4. Electricity

In principle, the revised Energy Taxation Directive will not change the treatment of electricity (from 0,5 it will increase to 0,54 € per MWh only from 2013). As before, energy content related tax will be levied at the point of consumption and the minimum rate won't be modified.

As for the CO2 element, it could only be levied on the input fuels used to generate electricity as electricity does not lead to emissions at the point of consumption. However, electricity generation is subject to the EU ETS and will therefore be exempted from the CO2 element. Nevertheless, the CO2 element will apply to small electricity generation installations falling out of the ETS because of their size.

5. Imported goods

Putting a price on carbon emissions linked to production within the EU can lead to distortions vis-à-vis producers from third countries where similar mechanisms are not in place. The majority of greenhouse gas emitting industries at risk of "carbon leakage", are covered by the ETS. In this context the EU has taken the decision to counter the risk of carbon leakage by distributing a higher share of free allowances to the sectors at risk, rather than by trying to impose a "carbon border tax" on imported products. Therefore, the revised Energy Taxation Directive does not provide for a "carbon border tax" on imported products. The non-ETS industries that would be subject to the CO2 element are generally smaller and, less susceptible to international competition and possible carbon leakage. Nevertheless, the proposal contains provisions for installations in sectors that may be at risk of carbon leakage (e.g. sectors with a high energy intensity and trade exposure such as a number of mineralogical processes), in the same way as provisions are made for industries at risk under the ETS. These will receive a tax credit for the CO2 element based on historical energy consumption, a solution which shields them from unfair competition while leaving the incentive to reduce their own emissions in place.

6. Arguments in favor of higher energy taxation

Introduction of environmental taxes as incentives for change such as a general energy tax and a carbon dioxide tax or taxes on emissions of other unwanted substances or emissions have many advantages in a market economy. The tax will increase the price of the unwanted activity or product and hit the products hardest that use most energy or cause the highest emissions. The tax incentive uses the dynamic forces of the market economy.
In the case of the energy tax, it will help promoting energy efficiency and energy savings as well as the development of new technologies using less energy. In the case of the carbon tax, it will increase the price of all products and activities causing emissions of carbon dioxide. This will make renewable energy more competitive with fossil energy and accelerate the substitution of fossil fuels with renewable bioenergy. But it will also promote energy efficiency. People will turn from heating oil to wood pellets but they will also be encouraged to rebuild their houses, insulate and install energy efficient windows. They will change to a car using biofuels, or to a more efficient car using less energy altogether or even refrain from having a car using public transport instead, take a bike and walk more.
Using taxes as incentive has great benefits compared to using direct subsidies or administrative systems like quotas and obligations. The politicians and administrators do not have to make choices between different technologies, which also make them less susceptible to lobbying and corruption. The taxes are technology neutral and will promote whatever technology is most successful on the market, under the new price conditions. Instead

of politically deciding what solutions to promote, the market will make these choices. The European Union is, after all, a market place.
Environmental taxes are more reliable than subsidies. When the governments run into fiscal problems during an economic downturn it is tempting to slash subsidies, as they are costs in the budgets. Taxes, on the other hand, are income for the governments and they will probably stay untouched, or even be increased to strengthen the budgets.
In the long run, energy and carbon taxation will force European industries to develop the new technologies needed for the energy transition that has to take place globally. It will give our industries a cutting edge in the global market when it comes to green solutions for energy efficiency and renewable technologies.

6.1 Reasons for the energy tax

The main reason for an energy tax is that it is an incentive to promote energy efficiency. Taxing energy will help the member states to reach the target for 2020 – to increase energy efficiency by 20 percent. A common minimum level for the energy tax will discourage member states from using low energy taxes as unfair competition with other member states.

6.2 Reasons for the carbon dioxide tax

The main reason for the carbon dioxide tax is that it puts a price on carbon emissions according to the Polluter Pays Principle (PPP). The emitters of carbon to the atmosphere pay for (at least some of) the environmental damages and costs caused by these emissions. Carbon dioxide is the major greenhouse gas and it is the first priority in climate policy to reduce the net emissions of carbon dioxide.
The emissions of carbon dioxide are the easiest to tax, as the emissions are directly linked to the combustion of fossil fuels. The tax can easily be calculated for the different fuels, oil, natural gas and coal, according to their carbon content. In all countries there is already taxation levied on these fuels (e g the current minimum energy tax), and the carbon tax is, therefore, easy to introduce. The administrative cost of a carbon dioxide tax is very low compared to almost all other taxes, as it can be collected from a few producers and importers of fossil fuels.
A second major reason for introducing a common carbon dioxide tax in Europe is that it creates a more level playing field between the companies inside and outside the emission trading system. Today in most member states, carbon only has a price inside the ETS, whereas carbon emissions in other sectors of the economy remain untouched.
A carbon dioxide tax would have an impact in the heating sector, as well as in small businesses and industries outside the ETS. It would first of all promote the efficient use of fossil fuels and encourage savings of these fuels in boilers and processes. I would secondly encourage exchange of boilers and ovens using fossil fuels, in favour of pellets heating and district heating with biomass. Pellets are already competitive with heating oil on the market but natural gas and coal are still less costly and a stronger incentive for change is needed.

6.3 Carbon tax and bioenergy

Bioenergy solutions are sometimes accused of not being carbon neutral because of the use of fossil fuels for production of biomass in agriculture and forestry using diesel tractors and lorries and for the use of fossil fuels in refining of the fuels. By introducing a carbon dioxide tax all these inputs will have to pay and it will be more profitable also for the bioenergy industry to introduce renewable solutions and improve the carbon balance.

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6.4 Energy poverty and green tax switch

Many politicians fear that a carbon dioxide tax on fossil fuels would lead to adverse effects for poor people, elderly and others who are dependent on these fuels for their heating and hot water supply and that the tax would increase the rents. This is an important issue to handle. The solution can be that some of the income from the carbon dioxide tax is used to support these households, e g with a higher pension or social benefits. Money can also be used for direct support to change energy system, e g exchanging oil boilers to pellets boilers, or for insulation of homes.
Another possibility is to make a "green tax switch" and, thereby, avoid raising taxes in general. This strategy has been used already in countries with high environmental taxes. At the same time as the carbon dioxide tax is introduced or raised, other taxes can be lowered for the same amount of money. Suitable taxes for tax switch are income tax and employment taxes. Households with low carbon footprint will benefit whereas households with a high carbon footprint will lose out. This strategy will also give the households more income to use for investments in energy efficiency. In general the dynamic of "green tax switch" is to promote a society with lower energy use and carbon footprint and favour labour intensive industries ahead of energy intensive ones.

7. AEBIOM preliminary views

The minimum level of CO_2 taxation proposed, if implemented, would improve the competitiveness of bioenergy in the EU.
However, with the new proposal, the 'natural' advantage of biofuels (ethanol, biodiesel, pure vegetable oil and bio-ETBE) will remain insufficient to make the biofuels competitive.

The directive indicates that all heating and transport fuels will be taxed. However, solid biomass fuels were not under the scope of 2003 directive and continue to be excluded from the scope of the directive from both: CO_2 and energy consumption tax. If it remains that way, the solid biomass fuels will have a competitive advantage.

8. Agenda and strategy for action

13 April 2011: EC came up with a proposal to introduce a CO2 tax for energy.

13 October 2011: EP Rapporteur Lulling Astrid (ECON) came up with a draft report on energy taxation.

20 October: ITRE meeting – opinions on this report

10 November 2011: ITRE meeting – opinions on this report

7 November 2011: Consideration of draft report

15 November 2011 Deadline for amendments to the report

30 November 2011: Council debate

24 January 2012: Vote for the report in Economic and Monetary Affairs Committee of the EP

March 2012: Vote in plenary

24 January 2012: EP adopts its' consultative report

The European Parliament has only a consultative power on this issue which means that the Council, if its' position is different, has a power to ignore the EP report (Lulling report) that will be voted in the Economic and Monetary Affairs Committee of the EP on **24 January 2012** and in the EP plenary in **March 2012.**

AEBIOM is following the adoption of the report in the EP. However, the most important is to influence the Member States so that they adopt the EC proposal. It is necessary to know the MS position and lobby at a national level.

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ANNEX I

CO_2 emission factors for all fuels

Energy sources	Emission factors Commission Decision 2007/589/EC (tCO_2/TJ)	Energy content Directive 2006/32/EC Net Calorific Value (GJ/1000kg)	Density JRC Study 2007[1] (Kg/m^3)
Petrol	69,2	44,0	745
Gas oil	74,0	42,3	832
LPG	63,0	46,0	N/A
Natural gas	56,1	47,2	N/A
Kerosene	71,8	43,8[2]	810
Heavy Fuel Oil	77,3	40,0	N/A
Coal and coke[4]	94,5	25,8[2]	N/A
Bioethanol	N/A	27[3]	N/A
Biodiesel	N/A	37[3]	N/A
Bio-ETBE	N/A	36[3]	N/A
Pure vegetable oil	N/A	37[3]	N/A

ANNEX II

Tax calculation of heating fuels