

Public consultation on accounting methods and conditions for the 10% renewable energy in transport target – and on the need for additional types of biofuels being listed in Annex III of the Renewable Energy Directive

Introduction

The European Union (EU) has set in the Renewable Energy Directive¹ ('the Directive') an overall 20% renewable energy target in final energy consumption and a 10% target of renewable energy in transport for 2020. For the transport sector each Member State has to ensure that the share of energy from renewable sources in all forms of transport in 2020 is at least 10% of the final consumption of energy in transport in that Member State. All forms of energy from renewable sources can contribute to the target, including biofuels - liquid or gaseous - and electricity produced from renewable sources. The Directive required Member States to submit by June 2010 National Renewable Energy Action Plans² setting out inter alia the contribution expected of each renewable energy technology to meet the 2020 targets, including in the transport sector.

The Renewable Energy Directive contains rules for the calculation of the 10% target³. For biofuels, this involves using the energy contents that are listed in Annex III to the Directive. This Annex can be updated. This public consultation, in section D, seeks views on whether and how the Annex should be updated.

For the contribution of electricity from renewable sources, the Directive prescribes that the average share of electricity produced from renewable energy sources (Member States or EU level) has to be taken into account in the calculation. In addition, the Directive requires the Commission to present by December 2011, if appropriate, 'a proposal permitting, subject to certain conditions, the whole amount of the electricity used to power electric vehicles to be counted towards the 10% target'. This public consultation, in section A, seeks views on what conditions could reasonably be applied for this.

As far as hydrogen originating from renewable sources is concerned, the Directive does not include any specific rules on how to account this towards the 10% target. Further, hydrogen is currently not part of the EU energy statistics system. This means that Eurostat and the Member States would develop statistical methodologies along the lines of the overall energy balance when the contribution of hydrogen to the fuel mix will become significant. The Directive requires the Commission to present by December 2011, if appropriate, 'a proposal for a methodology for calculating the contribution of hydrogen originating from renewable sources for counting towards the 10% target'. This public consultation, in section B, seeks views on what method(s) could reasonably be applied for this.

For the contribution of methane originating from renewable sources (biomethane⁴) and supplied via the natural gas grid, the Directive does not include any specific rules for the calculation towards the 10% target. In the absence of accurate statistical methods for measuring the share of injected biomethane consumption by sector, Eurostat would attribute to

¹ Directive 2009/28/EC OJ L140 of 5.06.2009 p. 16

² All plans are available at: http://ec.europa.eu/energy/renewables/transparency_platform/action_plan_en.htm

³ In Article 3(4) and 5(5)

⁴ Either biogas upgraded to the quality of natural gas or gas of similar quality produced from biomass by other production methods.

each natural gas consuming sector a portion of the biogas injected to the natural gas network, proportional to each sector's natural gas consumption. The Commission considers that it is of interest to further explore the accounting of biomethane from the grid, in parallel to those for electricity and hydrogen from renewable sources. This public consultation, in section C, seeks views on whether other accounting methods could be appropriate to apply for this.

The consultation is open from 14/04/2011 and closes on 14/06/2011.

This questionnaire exists only in English, but responses can be in any EU language.

If you have views on some questions and not others, feel free to send an answer covering only these questions.

Contributions will be published: http://ec.europa.eu/energy/consultations/index_en.htm

<p><i>This document has been prepared by the Commission services as a basis for comments. It does not prejudge the final form of any decision to be taken by the Commission.</i></p>
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Section A: Electricity from renewable sources in transport

According to the National Renewable Energy Action Plans, Member States estimate that the contribution of renewable electricity will by 2020 account for approximately 1% of energy consumed in transport: 0.8% in non-road transport (mainly in trains) and 0.2% in road transport, including electric cars, trolleybuses, etc.

Given that electricity is generated from both renewable as well as non-renewable sources,

1. how do you value the impact of the 10% target for renewable energy in transport by 2020 on the development of electric vehicles?

- Not significant

- Significant, but other policies/developments will be of more importance
- Important, along with other policies/developments
- A key driver

2. under what condition do you think it would be justified to count the whole amount of electricity in electric vehicles as renewable?

- None
- When the electricity is produced fully from renewable energy and without connection to the electricity grid
- When the electricity comes with a tradable certificate showing that that amount of renewable electricity was generated
- When there is a supply contract showing that that amount of renewable electricity was generated
- When there is evidence on a Member State level that the development of electric vehicles has led to that amount of additional renewable electricity generation
- Other (please specify):

- The electricity demand would be growing as a result of additional demand for its use in the transportation sector. The potential for additional renewable power generation is limited. As a result marginal electricity may not come from renewable energy but could more likely come from gas or coal. Putting electricity into cars will not cause a reduction of general electricity demand and will therefore further increase demand causing more marginal electricity to be produced irrespective of which electrons go where. So strictly speaking electricity for cars should be gas or coal-based. Only when the electricity is produced fully from renewable energy and demonstration and measurement can be made that this electricity was used in transport, the specific and measured renewable amount of electricity in electric vehicles could count as renewable.

3. what benefits do you expect the option you selected under (2) will have:

- Additional renewable electricity generation
- Faster development of electric vehicles

- Other (please specify): true zero carbon accounting into transport with no fraud possibilities

- None, it only changes the accounting method

Please motivate your answer: It is important to measure and count real and traceable renewable electricity in transport including their overall GHG

4. what costs in terms of administrative burden do you expect the implementation of the option you selected under (2) will have:

- Additional statistics collection in all Member States
- Generating additional information on the basis of existing statistics

- Other (please specify): **Rather low administrative burden as it would just require the measurement of the power used in the transportation sector including proof of renewable origin and traceability back to the power source**

- None

⁵ This 0.2% counts however with a multiplication factor of 2.5 towards the 10% target - Cf. Article 3(4) of the Directive.

Section B: Hydrogen from renewable sources in transport

According to the National Renewable Energy Action Plans, only one Member State estimates that hydrogen from renewables will be used in transport by 2020.

1. Which are in your view the most likely ways to produce hydrogen from renewable sources (partly or fully) by 2020?

- From biomethane, e.g. by steam reforming/partial oxidation
- From a mixture of natural gas and biomethane, e.g. by steam reforming/partial oxidation
- On the basis of renewable electricity, by electrolysis
- On the basis of the electricity mix from the grid, by electrolysis
- From biomass directly, e.g. by gasification/partial oxidation or biological processes

- Other (please specify):

- Producing hydrogen out of bio-methane loses 30-40% of the bio-methane energy content. One could capture the bio carbon when making hydrogen out of bio -methane but that would cause a further 30% loss of energy. If one has bio -methane at hand, the most CO₂-efficient way would be to use it as such. The same obviously applies to renewable electricity when being used in hydrolysis. Generally the use of renewable hydrogen by 2020 is not likely to be significant.

2. For each option you selected under (2), if it would be used for transport, how would you suggest to calculate its contribution to the 10% target for renewable energy in transport?

Section C: Biomethane via the natural gas grid in transport

According to the National Renewable Energy Action Plans, Member States estimate that biofuels other than first and second generation bioethanol and biodiesel will by 2020 account for approximately 0.2% of energy consumed in transport, part or all of which may be biomethane.

Given that methane in the gas grid originates mostly from non-renewable sources (natural gas),

1. how do you value the impact of the 10% target for renewable energy in transport by 2020 on the development of methane vehicles fuelled by methane from the gas grid?

- Not significant

- Significant, but other policies/developments will be of more importance
- Important, along with other policies/developments
- A key driver

2. under what condition do you think it would be justified to count the whole amount of methane extracted from the gas grid for the use in vehicles as renewable?

If one uses what bio-methane there is to put into cars, more natural gas will have to be imported into the grid for normal demand. The net result is an increase of (marginal) natural gas consumption

It would not be justified to count the whole amount of methane extracted from the grid as renewable until the time that all methane injected into the gas grid concerned is originating from renewable sources and that measurement is made that this methane is used in the transport sector.

- When the methane comes with a tradable certificate showing that that amount of biomethane was generated
- When there is a supply contract showing that that amount of biomethane was generated
- When there is evidence on a Member State level that the development of methane vehicles has led to that amount of additional biomethane generation
- Other (please specify):

3. what benefits do you expect the option you selected under (2) will have :

- Additional biomethane generation
- Faster development of methane vehicles

- Other (please specify): fair treatment of alternative sources based on their true contribution

- None, it only changes the accounting method

Please motivate your answer

4. what costs in terms of administrative burden do you expect the implementation of the option you selected under (2) will have:

- Additional statistics collection in all Member States
- Generating additional information on the basis of existing statistics

- Other (please specify): Rather low administrative burden as it would just require the measurement of the gas used in the transportation sector including proof of renewable origin and traceability back to the source

- None

Section D: Energy content of biofuels

According to the National Renewable Energy Action Plans, Member States estimate that the contribution of biofuels will be approximately 9.5% of energy consumed in transport, most of which is expected to be biodiesel and bioethanol.

1. Do you think additional types of biofuels need to be listed in Annex III of the Directive? If yes, which ones and could you provide values?

Please provide references for suggested values

2. Do you think more precision in terms of decimals is necessary in the values in the Annex? If yes, could you provide such values?

Please provide references for suggested values

- “Hydrotreated vegetable oil (vegetable oil thermochemically treated with hydrogen)” should be changed to “Hydrotreated (thermochemically treated with hydrogen) oil or fat of vegetable, animal or marine origin” to include other feedstock than vegetable oil.
- Bio-propanol (e.g. derived by fermentation of glycerol) should be added to the list. Energy content by weight: 31 MJ/kg (lower heating value) and energy content by volume: 25 MJ/l (lower heating value).
- Other (and higher) alcohols should be added to the list. Higher alcohol mixtures (propanol, butanol, pentanol..) can be produced either from synthesis gas, as an alternative to Fischer-Tropsch diesel or by chemical/catalytic conversion ("upgrading") of ethanol. The energy content of mixtures of higher alcohols can be calculated from the energy content of the weighted fractions in the blend.