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Renewable Energy Strategy

EARPA Response to the EC consultation, 6 February 2012

To: European Commission, Unit: ENER.C.1 - Renewables and CCS Policy, DG Energy
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EARPA would hereby like to answer the European Commission's consultation on "Renewable Energy Strategy".

As you may already know, EARPA is the association of automotive R&D organizations. It brings together the most prominent independent R&D providers in the automotive sector throughout Europe. Its membership counts at present 39 members, ranging from large and small commercial companies to national institutes and universities. For more information, please visit our website at www.earpa.eu.

EARPA believes it has the required expertise to provide inputs to the above-mentioned consultation on the specific questions of relevance to EARPA expertise within the "Section G: Renewables in transport".

EC Consultation Question G1. What do you consider to be the main barriers against a stronger uptake of renewable energy in transport?

Renewable energy for transport purposes consists not only of biofuels (gaseous and liquid), but also of hydrogen and electricity produced from renewable energy sources. To meet the EU targets beyond 2020, the use of bio components in fuels, as proposed by the renewable energy and fuels quality Directive, will not be sufficient as there are today not enough resources for biofuels production. The energy mix for transport purposes and accordingly the variety of propulsion systems will diversify, requiring cost effective products and production methods, infrastructure, etc.

Almost the complete capital of the automotive industry is currently focused on conventional propulsion systems. Major investments are required to achieve a significant share of new automotive propulsion systems. The technology already exists or will soon be ready, while we are far away from having large scale production facilities for such new systems which depend on alternative fuels. Prior to the investment difficulty, the primary barrier that the automotive industry is facing today is the cost competitiveness of vehicles with fuel cell and battery based propulsion systems. Low energy costs and new components of the complete powertrain system are required for an acceptable total cost of ownership requiring both large scale renewable energy production and large scale component manufacturing. Because of the uncertainty of an acceptable future total cost of ownership and thus of significant sales, the industry might be reluctant to start with the major investments required to keep the EU targeted increasing share of renewable energy. One could imagine a dead lock situation: having the automotive industry waiting for more direction on future fuels' developments from the energy sector in order to further decide on further automotive powertrain investments necessary to go steps further.

Another barrier specific to sustainably produced biofuels is the availability of renewable resources for an acceptable price. In theory, there is sufficient land area to produce such renewable resources. However, there

will be an increasing competition for the use of these products. For example, such competition can be expected between the bio-based chemical industry, the non-fossil based electricity production and the biofuels for transport. Furthermore, the discussion on food-or-fuel will be intensified as we expect that only the second generation of biofuels should be used: making it more likely that biomass will be used for high value products, not being fuels for transport.

EC Consultation Question G2. What sectors of transport do you consider to be the most promising for further increasing the share of renewable energy?

On road transport, electric urban transport (low range, good electric infrastructure) is a promising area to develop further the share of renewable energy in transport under the condition that extra electric power required is produced sustainably. Efforts in all cases are required to increase the production of electricity using renewable energy resources.

Road transport requires more effort to increase the share of renewable energy. Blending conventional fuels with an increasing rate of biofuels is required anyhow, supported by an increasing share of electricity and secondly hydrogen fueled vehicles. Heavy road vehicles will face the biggest hurdles for electrification of the propulsion system due to the required range and thus storage capacity of electricity or hydrogen. Looking at passenger cars, the share of renewable energy can be higher. First of all because of the limited daily range of a significant share of the passenger car fleet, secondly because of the opportunities to use alternative energy sources in urban bus applications given their known routes and limited challenges for required infrastructure.

Additional reference of EARPA to precise the ideas quoted above.
Final report of the Future Transport Fuels Expert Group organised & published by the European Commission (DG MOVE) end 2011[1]

EARPA experts have actively participated in this Expert Groups and accordingly, we would like here to highlight some of the conclusions of this report as follows:

"There is a clear need for enhancing public and private sectors to put in place effective actions to accelerate the development of new refueling infrastructure with the following objectives:
• To establish EU-wide a minimum coverage of refueling infrastructure for the main alternative fuels which are technologically viable and with market potential to facilitate economies of scale for market introduction
• To ensure the implementation of harmonized standards for the main alternative fuels.
• To align policy and public/private funding and taxation in the field of alternative fuel infrastructure.
An appropriate EU regulatory framework and financial instruments will be required to introduce sustainable low carbon alternatives to the market. Any infrastructure decision requires the development of the necessary legislation for energy infrastructure and vehicles in parallel, in order to ensure consistency and coherence.

A comprehensive EU infrastructure roll-out plan in cooperation with key industrial (OEM's and fuel production and supply industry), national and local stakeholders will have to be developed, aligned with the TEN-T Programme and relevant EU energy infrastructure programmes. The capacity of alternative fuels and their infrastructure should be continuously reviewed to allow for the improvement of energy security and for the reduction of carbon emissions.

What fuels to include?
All alternative fuels are viable options for the future fuel mix, high infrastructure investment needs would, however, only be required for electricity, hydrogen and methane in the short and medium term. Special

[1] See: http://ec.europa.eu/transport/urban/cts/future-transport-fuels_en.htm

support measures for the build-up of the required infrastructure are, therefore, only necessary for these fuel options.

What transport modes should be covered?
All transport modes (railways, aviation, maritime and inland waterways) and non-road mobile machinery must be included in future fuel scenarios. For road transport, a special focus should be placed on the establishment of sufficient alternative refueling possibilities along major motorways, which would enable long distance travelling in LDVs and HDVs. There are only very limited alternative fuel options to Diesel (biodiesel/diesel mix and LNG) in heavy duty trucks.

What policy options are most suitable?
Public aid is most likely needed for infrastructure investments. It doesn't seem realistic to expect the market to cater for the transition to more expensive low carbon alternatives alone and, therefore, important interfaces should be defined by legislation to allow and encourage this market demand. Public intervention is necessary to break deadlocks between potential market growth for new alternative vehicle technologies and non-existing alternative fuel supply. Public intervention can be justified by overriding objectives of security of energy supply in a sustainable way ensuring decarbonisation. Binding targets on alternative fuel infrastructure could become a real driver for the alternative fuel market, as increased visibility of and better accessibility to alternative refueling is the key to attract the final customer and steer market demand for those fuels. However, imposing an infrastructure mandate for solutions that still need to prove their technological viability, sustainability and /or their market potential could result in high costs for society and industry. Appropriate refueling infrastructure is necessary for producing and promoting alternative fuelled vehicles on the OEM side. The establishment of targets applicable to Member States with regard to alternative fuel infrastructure is considered a feasible path forward for ensuring the availability across Europe of the alternative fuels that contribute to achieve the EU's targets. However, the EU must avoid early, arbitrary selection of any given technology which might prevent the development of other technologies that perform better in terms of CO2 emission reduction and cost. Funding schemes and non-legislative measures, harmonization of standards and self-regulation by the industry based on common goals are judged necessary for achieving a minimum coverage of alternative fuelling infrastructure in the EU. The establishment of binding targets is considered as a recommended complementary measure for those alternative fuels technologically viable and with market potential. In this context, a first approach to quantified coverage goals per alternative fuel has been provided by the Expert Group. Country-based deployment projections, with a timeline indicating areas of deployment, number of vehicles and number of fuelling points, breaking point for economical viability of the technology, shared by the involved vehicle manufacturers commercializing the vehicles and infrastructure providers could be requested to base binding infrastructure deployment targets for a particular fuel.

Overall strategy
The combination of requirements for a minimum coverage, supported by binding targets and a well-coordinated strategy between the EU and Member States is recommended by most members of the Expert Group. Other members emphasize that developing infrastructures that are not in line with market development would not be cost efficient, and that the legislation should only aim at creating a level playing field for all fuels and energies that have proven their technological and market viability and sustainability.
Customer acceptance may result from the visibility of and accessibility to alternative fuels. A sound legislative framework linked to the harmonization of standards and supported by innovative funding schemes will lead to an optimum coverage of alternative refueling over time.

Report's RECOMMENDED ACTIONS:
General

- *Transport develops slowly, it is therefore important to start investing and supporting the build-up of alternative, sustainable low carbon refueling already in 2012 wherever possible, also in order to reach the 2020 targets.*
- *It will be crucial to link the alternative fuel infrastructure strategy of the EU to the TEN-T programme in the first place, which can be used to provide the needed investments, but also to investigate EIB*

loans and other ways such as PPPs for allocating the needed capital to support the construction of alternative refueling possibilities across the EU in a harmonized way.

- *Some alternative fuel options need more time before entering the market. A coherent and sustainable investment policy is important, in order to avoid investments into technologies where the vehicles are not yet commercially available for the end users.*
- *Recognition of the challenge in the transport sector of parallel development of a fuelling network and availability of any type of vehicle designed for alternative fuels.*
- *Encouraging the definition of long-term targets, critical for all market stakeholders, including vehicle and equipment manufacturers, fuel retailers, infrastructure developers and end customers.*
- *Underlining the importance of coherent public policy and the harmonization of standards in the area of alternative low carbon fuels and the required infrastructure.*
- *Member States shall not be prevented from implementing incentives for the compensation of higher alternative fuel infrastructure capital and operating costs during the transition period, in order to establish the conditions of a market driven uptake of alternative transport fuels.*

Fuels

- *Implementation should be promoted of different projects on alternative fuels by the private sector, including the "LNG Blue Corridors" concept and other initiatives.*
- *Improving local air quality in urban areas should be supported by promoting viable alternative fuels and the refueling infrastructure needed for captive fleets (e.g. taxis, municipal fleets) and heavy duty vehicles (buses, garbage collection trucks, city logistics).*
- *Common charging standards for all BEVs to communicate with the grid anywhere in the EU and also with all types of chargers. Any binding target for a minimum coverage of charging points would be based on this common interface.*
- *For hydrogen, standards should give further coverage to fuelling protocols, stationary storage, high pressure trailers and delivery by trans-filling.*
- *Mid-level blends of sustainable biofuels could be needed in the mid-term. A detailed review should be undertaken to consider the merits of moving to higher levels of biofuels in general market fuels. If appropriate, standardization work in CEN should start as soon as possible. The potential of biofuels to reduce GHG emissions, when land use change is included, should be part of the review.*
- *The EU should assess the impact of indirect land-use change due to biofuels on CO2 emissions and take appropriate action to reflect this in the Renewable Energy and Fuel Quality Directives.*
- *Fungible paraffinic fuels offer a seamless path forward in terms of vehicle compatibility but their sustainability must be assured. Among them, HVO (in the case of biofuels) and GTL (for other alternative fuels) are already available on a large commercial scale and should be also taken into account and better promoted by policy makers. To this end, remaining issues such as ILUC must be concluded so that all actors know the right sustainable routes to follow."*

EARPA strongly recommends DG Energy to look further at what was recommended in this report done by DG MOVE which we believe was a yearlong effort which came to good conclusions that should be further picked up.

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