Deployment of alternative fuels infrastructure

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This Communication sets out a **comprehensive alternative fuels strategy to break dependence on oil,** as well as a roadmap to its implementation. Covering all modes of transport, it aims at establishing a long-term policy framework to guide technological development and investments in the deployment of these fuels and give confidence to consumers. The accompanying **legislative proposal** provides a general direction for the development of alternative fuels in the Single European Transport Area.

1. Need for a comprehensive strategy: the European Union, for many years, has invested in research and development into alternative fuels. However, previous European initiatives supporting alternative fuels, including market quotas and favourable taxation, have been followed up in uneven and disjointed ways. Although there is a common trend throughout the European Union to use the potential of alternative fuels in transport, **different technological choices in different parts of Europe, have led to a fragmentation of the internal market,** creating technology border lines inhibiting the mobility of alternatively fuelled vehicles across Europe.

The Commission estimates that a strategy for the transport sector to gradually replace oil with alternative fuels and build up the necessary infrastructure could bring **savings on the oil import bill of EUR 4.2 billion per year in 2020, increasing to EUR 9.3 billion per year in 2030**, and a further EUR 1 billion per year from dampening of price hikes.

2. A comprehensive mix of alternative fuels: the increasing demand for energy from the transport sector and the need to break the dependence on oil can only be satisfied it there is a comprehensive mix of alternative fuels. All main alternative fuel options must be pursued, with a focus on the needs of each transport mode; without giving preference to any particular fuel, thereby keeping technological neutrality.

- The growing interest for **natural gas** – for maritime and inland-waterways, for long distance road haulage applications, and light duty vehicles - as well as **electricity** for short-distance road transport - indicates that it would be possible, in the short to medium term, to both increase the European supply of energy for transport as well as reduce dependency on imported oil. **Natural gas vehicle technology is mature for the broad market**, with close to 1 million vehicles on the road in Europe and around 3,000 filling stations. **The technology of electric vehicles (EVs) is maturing,** and the deployment of EVs is picking up. Member States aim to have 8-9 million EVs on the road by 2020.

- At the same time, with a view to the rapid development of the market, the Commission considers it will be essential to encourage:

- the **development of advanced biofuels** – which have potential for all transport modes, but are the only option for aviation. Biofuels are currently the most important type of alternative fuels, accounting for 4.4% in EU transport;
- the **progressive build-up of electricity and hydrogen supply networks** to provide area wide coverage for road transport. The technology for hydrogen fuel cell vehicles is maturing, and is being demonstrated in passenger cars, city buses, light vans and inland ship applications. Industry has announced a roll-out of vehicles, including hydrogen powered two-wheelers, for the next years, and several Member States plan for hydrogen refuelling networks.

3. Priority fields for further EU action: priorities for further action need to be set according to the stage of technological maturity and market development as well as future perspective of the different fuels, focussing on:

- **alternative fuel infrastructures:** the investment in the build-up of alternative fuels infrastructure is estimated at EUR 10 billion. The proposal for a Directive that accompanies this Communication provides for sufficient infrastructure coverage to ensure economies of scale on the supply side and network effects on the demand side;
- **developing technical specifications:** most urgent is the implementation of common technical specifications in the Union for the interface between EVs and recharging points. The lack of an agreement on a "common plug" is now considered one of the heaviest impediments to the broader market uptake of EVs in Europe;
- **addressing consumer acceptance:** the harmonisation of consumer information on fuel quality and vehicle compatibility and on the availability of recharging/refuelling points, as well as on environmental, financial and safety aspects, is important to create consumer acceptance. In this context, guidelines on financial incentives for consumers to purchase clean and efficient vehicles are indispensable in order to coordinate the demand-side measures;
- **research and development:** specific technology roadmaps for alternative fuels will be developed in the frame of the Strategic Transport Technology Plan. Research and development of critical components for electric propulsion such as **batteries**, should deliver significantly improved range, performance, durability and reduced costs for a competitive market offer.