The ADVANCEFUEL project (Full Title: "Facilitating market roll-out of RESfuels in the transport sector to 2030 and beyond"), has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 764799.

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How has the bioenergy sector – particularly in transport – developed over the past decade?

In the transport sector, all EU countries must ensure that at least 10% of their transport fuels (including liquid biofuels, hydrogen, biomethane, "green" electricity) come from renewable sources by 2020. In this context, the average share of energy from renewable sources in transport increased from 1.4% in 2004 to 7.1% in 2016 (source: **Eurostat**). Among EU Member States, the relative share of renewable energy in transport fuel consumption varies considerably, ranging from 30.3% (Sweden) to less than 2.0% (Croatia, Greece, Slovenia).

In 2015, an amendment to the Renewable Energy Directive (EU/2015/1513) was issued, which strongly influenced the further development of the bioenergy sector, in particular regarding biofuel production, as it caps the use of conventionally-produced biofuels (based on food/ feed plants) at 7%; the directive also obliges Member States to implement a target for biofuels from non-food feedstock (at least 0.5% in transport energy in 2020), which started a considerable increase in corresponding R&D&D activities all over Europe.

How big is the market for integrating bioenergy?

Bioenergy can be integrated in all areas of conventional energy markets, such as power, heat, transport fuels. This is strongly supported and legally defined by the European targets for the reduction of fossil carbon in the European energy supply and consumption of energy. However, there are significant country-specific differences with regard to the respective shares of bioenergy in the overall energy supply.

In the transport sector, high-quality drop-in products can supplement their fossil equivalents using the existing, mature and well-functioning (global) infrastructure and fuel standards. Liquid (bio)fuels have a high energy density and are well transportable and storable. Additionally, there are no other alternatives for certain end uses such as in aviation or in the shipping sector. Keeping the fossil-carbon-reduction targets in mind, this opens a huge market potential for renewable (bio)fuels.

Who are the main players in advancing bioenergy in Europe?

In collaboration, representatives from industry and research institutions as well as the European Union and its Member States shape, support and fund the framework of advancing the required technological development in Europe for the envisaged energy transition. Other networks like the established Technology and Innovation Platforms and Research Alliances play an important role.

There are, for instance, six European Industrial Initiatives (EIIs), which bring together industry, the research community, Member States and the European Commission in risk-sharing, public-private partnerships. These are aimed at the rapid development and deployment of key energy technologies. Additionally, the European Energy Research Alliance (EERA) aligns the R&D activities of major energy research organizations with the agreed priorities (SET-Plan).

With a view to a joint programming framework at EU level, the implementation of the SET-Plan is also supported by a series of industry-led European Technology Platforms (ETPs). Another pillar of support for implementing the SET-Plan is provided by several Joint Technology Initiatives. These are public-private partnerships, funded by the European Commission, along with Member States and industry.

Learn more about Europe's role on the global market and the future of mobility, aviation and shipping: **www.advancefuel.eu**

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