

Transforming the Transport Sector: IRENA Innovation Technology Outlook for Advanced Biofuels

SUMMARY REPORT

February 5, 2016

BACKGROUND

The event “Transforming the Transport Sector: IRENA Innovation Technology Outlook for Advanced Biofuels” was held in Abu Dhabi, United Arab Emirates, on January 19, 2016. This side-event was organised by the International Renewable Energy Agency (IRENA) as part of the World Future Energy Summit.

This event is part of IRENA’s commitment to deploy innovative renewable energy technology and products, corresponding to the activities defined in IRENA Work Programme 2014-2015, under its thematic area related to Enabling Investment and Growth. Specifically, this event is part of a wider portfolio of activities related to Innovation and Research, Development and Demonstration (RD&D).

This side-event brought together research institutions, the private sector and inter- and non-governmental organisations promoting the deploying advanced biofuels. Amongst other institutions, world-wide known institutions such as Masdar Institute of Science and Technology and Etihad Airways participated in the event.

OBJECTIVES OF THE WORKSHOP

The goal of this event was discussing effective support to advanced biofuels for a transition towards a sustainable energy system in the transportation sector and strengthen networking with stakeholders of advanced biofuels. Specific objectives were:

- Presenting and discussing the preliminary results of the upcoming publication '*IRENA Innovation Technology Outlook for Advanced Biofuels*'. This publication is a global technology outlook for advanced liquid biofuels for transport from 2015 to 2045, which focuses on the role of innovation on advanced production pathways which have not yet reached large scale commercialization.
- Providing an opportunity to exchange experiences on R&D for production of feedstock, which can be utilized for advanced biofuel production, specially in desertic areas.
- Presenting industry experiences implemented in the transport sector, which pioneer to include advanced biofuels in the aviation segment.

SUMMARY OF THE WORKSHOP

Participation

A group of more than 15 experts attended this side-event from research institutions of different regions, private companies, inter- and non-governmental organisations.

Presentations

During the presentation of *IRENA Innovation Technology Outlook for Advanced Biofuels*, IRENA emphasized the urgent need to develop, deploy and scale-up advanced liquid biofuels to decarbonise the transport sector. According to the preliminary results of *IRENA Innovation Technology Outlook for Advanced Biofuels*, innovations have the potential to make the new generation of biofuels competitive against conventional fuels in the next three decades. To achieve this potential, more RD&D is still required in a number along the feedstock supply chain and advance biofuel production chain and commercialisation.

Illustrating R&D ongoing efforts on feedstock, Masdar Institute of Science and Technology presented an innovative project to generate feedstock, which can qualify for advanced biofuel production at the same time than being implemented in arid lands. The result of this project is the generation of lignocellulose biomass and oil seeds, specifically a species of halophyte called *Salicornia*. In addition, this project results in the development of aquaculture industry (shrimps), mangroves' biomass for other bioenergy uses and water treatment through mangroves' wetlands. This presentation also highlighted that not only investing on integrated processes, which are not only sustainable and environmentally responsible with the land uses, carbon emissions and pollution from by-products is relevant, but also diversifying the processes to obtain benefits from co-products.

Etihad Airways brought the industrial perspective on the deployment of advanced biofuels by presenting the experiences of investing in these fuels and promoting them in the aviation sector. The presentation revolved around the technology lock-in of current aircrafts fleets, which will take decades to replace, the R&D required to overcome the valley-of-death and the need for government support and intervention.

During the presentation, it was noted that the sector has targets to reduce carbon emissions and more effort is needed to reduce the financial risks associated to advanced biofuels and increase the investors' confidence. Initiatives are already ongoing with this purpose and an overview of the BIOjet Abu Dhabi project or the Sustainable Aviation Fuel Users Group was presented. The relevance to engage with oil companies in initiatives of this nature was emphasized.

Feedback and Discussion

A key point of the discussion maintained referred to the regulation to be put in place to support advanced biofuels production and the relevance of interventionist policies. The discussion also revolved around IRENA's role as a communicator of the advanced biofuels' potential to financial leaders and policy-makers. Other points debated with experts were the linkage of advanced biofuels to a broader agro-industry to hedge their cost/benefit ratio, the opportunities to scale-up in emerging economies and the prospects for new business segments of bio jet fuel exports in Brazil.

OUTCOME

The workshop met all proposed objectives and the feedback will be incorporated in '*IRENA Innovation Technology Outlook for Advanced Biofuels*'.