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US Federal Alternative Jet Fuels Research and Development Strategy

Purpose and Scope:

The Strategy sets out prioritized Federal R&D goals and objectives to address key scientific and technical challenges that inhibit development, production, and use of economically viable Federal Alternative Jet Fuels (AJF) that would provide energy security and environmental and social benefits relative to conventional fuels, while reducing duplication of effort, enhancing efficiency, and encouraging a coordinated R&D approach among Federal and non-Federal stakeholders. The Strategy complements department and agency R&D policy directives and should guide decisions about R&D program budgets and priorities.

R&D Goals and Objectives:

Feedstock Development, Production, and Logistics: R&D objectives in this category represent what individual regional supply chains could do to optimize their systems to reduce cost, technology uncertainty and risk, increase yield, and optimize AJF precursors. **Fuel Conversion and Scale-Up:** Fuel conversion and scale-up R&D efforts focus on reducing the cost of production for biochemical, thermochemical, and hybrid conversion processes while increasing the conversion efficiency and volume of fuels produced.

Fuel Testing and Evaluation: Federal R&D efforts in fuel testing and evaluation focus on facilitating the approval of additional AJF pathways by enabling the efficient evaluation of fuel engine performance and safety through advancement of certification and qualification processes and collection and analysis of data, including those for combustion emissions.

Integrated Challenges: Several key scientific and technical challenges require R&D efforts that either bisect the above components of the AJF development path (i.e., R&D related to feedstock and fuel) or take place outside that path (e.g., during production, deployment, and use). Research in this area requires an interdisciplinary, multi-disciplinary, and multi-faceted approach.

In addition to the scientific and technical challenges, other non-technical challenges are associated with the commercial-scale deployment of AJFs. The benefits of scientific and technical advances can be limited by these challenges, which include volatility in the price of conventional fuels; inadequacies of the production infrastructure; barriers posed by legislation, regulations, and policy; financing structures; uncertainty of investments; and constraints in labor forces and skills. Socio-economic analyses have an important role to play in alleviating such non-technical barriers in this emerging industry, and maximizing the benefit of R&D advances.

International Coordination

Federal agencies should continue to facilitate international coordination in three primary areas: scientific and technical R&D conducted under multi-lateral and bilateral agreements to mutually share risks, minimize duplication of effort, and benefit from best practices; harmonization efforts to define sustainability criteria to ensure that biofuels achieve desired greenhouse gas reduction goals and do not negatively influence food security and biodiversity; and policy and market-development efforts to ensure a global market for AJFs.

The U.S. Government and industry should continue to cooperate in AJF initiatives that are emerging in

diverse countries and participate in AJF activities of the United Nations International Civil Aviation Organization's Committee on Aviation Environmental Protection.

Source: Whitehouse

Read more:

https://www.whitehouse.gov/sites/default/files/federal_alternative_jet_fuels_research_and_development_strategy.pdf