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Peculiarities of the development and implementation of aviation biofuels in Ukraine

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Abstract

Ukrainian industry has some experience in production of biofuels for motor transport (biodiesel and bioethanol). There are already adopted normative documents that regulate questions of production, quality and application of biofuels. Numbers of scientific-research organizations actively investigate these kinds of alternative fuels. But, for today there are no any industrial projections for alternative jet fuels manufacturing in Ukraine. However, keeping up with the times, we have started development and implementation of alternative jet fuels into Ukrainian civil aviation. These actions are stipulated by the number of reasons: exhausting of crude oil deposits, therefore increasing of prices for crude oil and so for jet fuels; increasing "greenhouse effect", caused by carbon dioxide emissions in a result of hydrocarbons burning; worsening of ecological situation because of aviation industry activity.

Comparing to motor transport, aviation is seemed to be more resistant to such cardinal innovations as use of biofuels. It is mainly connected with provision of flight safety, reliability and durability of aircraft. There also some economical and legislative barriers for aviation biofuels implementation.

The large-scale process of alternative fuels implementation into aviation requires development of complex general concept that will cover all activities in this sphere. The researchers of the National Aviation University have developed the Concept of biofuels implementation into aviation. This Concept comprises development of scientific-practical principles for the rational use of new ecologically safe fuels and lubricants for aviation technique. Practical realization of the Concept includes the following steps: development and production of experimental samples of the biofuel with execution of series of bench tests, development and accumulation of normative-technical documentation base, development and implementation of unified technology for biofuel production, development of the system of biofuel transportation to airports, development of the system for biofuel quality control at the airport and before aircraft filling. Thus, implementation of alternative jet fuels with provides further development of Ukrainian aviation within the principles of sustainability.

Biography

Anna Yakovleva has received her MSc in Ecology at the National Aviation University. For today she is a Post-graduate student and a junior scientific researcher. Sphere of scientific interests – Aviation chemmotology, alternative jet fuels and environmental protection. She has published more than 10 papers in Ukrainian and international scientific journals.