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Aviation emission inventory at the territory of Azerbaijan Republic

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The chronology of history of the civil aviation of Azerbaijan Republic starts from the beginning of the 20th century.
At present, Azerbaijan's civil aviation fully complies with the requirements and standards of the International Civil Aviation Organization (ICAO). Azerbaijan is a member of International Aviation Communities such as ICAO, IATA, ECAC and the International Aviation Committee (IAC). Aircrafts of "Azerbaijan Hava Yollari" perform regular flights to dozens of cities around of the world, while cargo routes of "Silk Way Airlines" stretch across all continents to almost a hundred countries.
Freight transportation routes of aircompany "SW Airlines" extended its transcontinental flight operations world-wide.
Baku Cargo Terminal is one of the biggest and most technically advanced cargo terminals in CIS and offers entire range of cargo services in a state-of-the-art infrastructure located on one of the oldest routes "Silk Way" linking East and the West, exchanging business, cultures, technologies, and ideas. Advanced location of the Terminal at the territory of Heydar Aliyev International Airport allows significantly increasing the cargo turnover and turning Baku into an important transfer zone.
Civil aviation fleet of Azerbaijan Republic includes mid-, and long range aircrafts. With the modernization of fleet "Azerbaijan Hava Yollari" extended its flight route network and enabled to provide high quality service.
Nowadays the civil aviation fleet of "Azerbaijan airlines" includes following aircrafts: Boeing 757-200, Boeing 767-300 (ER), Airbus 319, Airbus 320, ATR 42-500, ATR 72, Embraer 170.
However increasing of aviation flight operations at the airports and flight routes bring to increment of huge volume of fuel consumption that causes substantial air pollution.
Categories of emission sources in civil aviation includes all general aviation and commercial aircrafts flying on International and domestic en-route and operated on regular, charter and cargo flights schedule, as well as taxiing on ground, taking off and landing.
Aircrafts produce emissions of carbon dioxide (CO_2), methane (CH4), nitrous oxide (N2O), carbon monoxide (CO), non-carbon organic gases, sulphur dioxide (SO_2), particulate pollutant and nitric oxide (NO_x).
In this connection the estimation of aircrafts annual fuel consumption on the region is one of the important aspects for taking risk management actions to mitigate aviation emission impact on environment.
Thus in this article on the basis of long term statistical data of flight operations the fuel consumption and emission was considered in Baku Flight Information Region (Azerbaijan Republic). For the emission assessment the 2nd level method was applied. This method includes comparative assessment of emission both at the heights below and higher 914 m (3000 feet). According to the emission inventory the pollution map was developed that illustrated most exposure areas and indicating degree of pollution at the different areas.

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