ICAO's aviation biofuels plans: A dangerous distraction

From 11th to 13th October, the International Civil Aviation Organisation (ICAO)[1] is holding a high-level "Conference on Aviation and Alternative Fuels", i.e. biofuels[2] in Mexico City.

ICAO supports the aviation industry's quest for unending rapid growth, a quest which is incompatible with keeping global warming to 1.5°C or even 2°C per (a goal endorsed by the Paris Agreement). Greenhouse gas emissions from international aviation alone grew by 87% between 1990 and 2014[3] and are rising faster than those from almost any other sector. Efficiency improvements lag far behind growth in the number of air passengers worldwide[4], and there are no available techno-fixes which would allow planes to fly without burning hydrocarbon fuels[5].

The only way for the aviation industry to genuinely reduce emissions would be for it to stop growing and to reduce the volume of air travel worldwide, which would reduce profitability for the industry. To avoid doing so, the industry, with ICAO endorsement, has promised "carbon neutral growth" from 2020[6], which it claims it can achieve largely through a combination of carbon offsetting and biofuels. ICAO's carbon offsetting plans were denounced by over 100 civil society organisations in 2016[7].

Ahead of the conference in Mexico, the ICAO Secretariat has published a proposal for vast-scale use of biofuels in aircraft[8]: it wants to see 128 million tonnes of biofuels a year being burned in plane engines by 2040, going up to 285 million tonnes (half of all aviation fuel) by 2050. By comparison, some 82 million tonnes of biofuels a year are currently used in transport worldwide[9]. Even if the figures proposed by the ICAO Secretariat are unrealistic, creating any new market for biofuels will compound the harm caused by existing policies promoting biofuels for road transport in the EU, US and elsewhere.

Monoculture plantations of crops and trees for biofuel covered at least 30 million hectares of land worldwide[10], but the indirect impacts of the steep growth in biofuels for road transport (mainly cars) since 2010 have gone far beyond the direct impacts. The harm done by existing biofuel policies and subsidies[11] includes increased land-grabbing in the global South; greater food price volatility, which undermines food security as well as food sovereignty; more deforestation and destruction of other biodiverse ecosystems as demand for vegetable oils, sugar cane and cereals increases; more synthetic fertilizer, pesticide and other agrochemical use; depletion and contamination of waterways; and overall climate impacts which are no lesser than those of fossil fuel oil (per tonne of fuel).

Large-scale biofuel use for planes would rely on palm oil.

The only aviation biofuels which can currently be produced reliably and at scale – although they are still expensive - are made from vegetable oils and animal fats, using a technology called hydrotreatment[12]. Any large-scale use of aviation biofuels made from hydrotreated vegetable oils (HVO) would almost certainly rely on palm oil. Palm oil is the cheapest type of vegetable oil available in large

quantities[13], and is cheaper to refine to HVO than other types of vegetable oil[14]. Since fuel is the single biggest cost for airlines[15], closing the still significant price gap between fossil-fuel based jet fuel and biofuels would be essential before the latter could be viable. Fuelling airplanes with HVO biofuels would thus almost certainly mean fuelling them with palm oil[16].

Palm oil could even be used in planes under the guise of "residues".

Neste, the world's leading HVO producer, is lobbying for support for large-scale aviation biofuels[17]. Neste uses an undisclosed fraction of crude palm oil, called PFAD, in its HVO biofuels[18], which it controversially classes as a 'residue'. PFAD accounts for around 5% of all crude palm oil, but its share could be increased if demand and prices go up[19].

Hype about future aviation biofuels in itself could fuel plantation expansion and land grabbing worldwide.

Mere expectation about a major future new market for biofuels risks playing into the hands of plantation companies and speculative land grabbers. ActionAid found that by May 2013, European investors had acquired 6 million hectares of land in sub-Saharan Africa for biofuel production for the EU[20]. Those large-scale land-grabs happened even though the EU has sourced virtually no biofuel feedstock from Africa[21]. Promoting a vast new market for biofuels for aviation could thus have devastating impacts due solely to speculation, even in the absence of an actual market.

We therefore call on ICAO's Member States to oppose the promotion of biofuels for aviation. They must, instead, take urgent measures to reduce the climate impacts of aviation by stemming and ultimately reversing its growth. This will require ending subsidies – including tax exemptions - for aviation, ending airport expansion, and investing in alternatives, including rail transport.

Signatories

International organisations and networks:

- ActionAid International
- ACIDSE
- ETC Group
- Friends of the Earth International
- Global Alliance for Incinerator Alternatives (Gaia)
- Global Forest Coalition
- Mighty Earth
- Oxfam International
- Plataforma Internacional contra la Impunidad
- Third World Network

Regional organisations and networks:

- Corporate Europe Observatory, Europe
- Fern, Europe
- Asia Pacific Forum on Women, Law and Development (APWLD), Asia

- Red Latinoamericana de Mujeres defensoras de Derechos Sociales y Ambientales, Latin America
- Transport and Environment, Europe

National organisations and networks:

- "System Change, not Climate Change, Austria
- 2 Celsius, Romania
- Abibiman Foundation, Ghana
- Acción Por la Biodiversidad, Argentina
- AFRICANDO, Spain
- Amigos da Terra Brasil, Friends of the Earth Brazil
- Amigos de la Tierra, Spain
- Amigos de la Tierra, Friends of the Earth Argentina
- Amis de l'Afrique Francophone-Benin (AMAF-BENIN), Benin
- Animals Tasmania, Australia
- Arbeitskreis Regenwald und Artenschutz (ARA), Germay
- ASEED, Netherlands
- Balkani Wildlife Society, Bulgaria
- Biofuelwatch, UK/US
- BioScience Resource Project, US
- Brot für die Welt, Germany
- Campaign Against Climate Change, UK
- Campaign for Climate Justice Network (CCJN), Nepal
- Centar za životnu sredinu, Friends of the Earth Bosnia and Herzegovina
- Center for Biological Diversity, US
- Center for International Environmental Law (CIEL), US
- CESTA, Friends of the Earth El Salvador
- CNCD-11.11.11, Belgium
- Coalition for Rivers, Czech Republic
- Coalition Marocaine pour la Justice Climatique, Morocco
- Coordinadora de Pueblos y Organizaciones del Oriente del Estado de México en Defensa de la Tierra, el Agua y su Cultura, Mexico
- Coordination Office of the Austrian Bishop's Conference for International Development and Mission (KOO), Austria
- Corner House, UK
- Danish NGO Council for Sustainable Traffic, Denmark
- Denkhaus Bremen, Germany
- Développement Pour Tous, Guinea-Conakry
- Dogwood Alliance, US
- Ecologistas en Acción, Spain
- Econexus, UK
- EKOenergy, Finland
- Energie Hunger - Nein Danke, Germany
- Environmental Rights Action, Friends of the Earth Nigeria
- FDCL - Center for Research and Documentation Chile-Latin America, Germany
- Fellow Travellers, UK
- Finance & Trade Watch, Austria
- Forest Peoples Programme, UK
- Frente Amplio No Partidista en contra del Nuevo Aeropuerto y otros Megaproyectos en la Cuenca del Valle de México, Mexico
- Friends of the Earth Ghana
- Friends of the Earth Japan
- Friends of the Earth United States, US
- Fundacion del Rio, Nicaragua
- Gaia Foundation, UK
- Global Anti-Aerotropolis Movement (GAMM), UK/Thailand
- Global Justice Ecology Project, US

- Grain, Spain
- Green Delaware, US
- Groundwork, Friends of the Earth South Africa
- KRUHA Indonesia (People's Coalition for the Right to Water), Indonesia
- Les Amis de la Terre, Friends of the Earth France
- Mangrove Action Project, US
- Milieudefensie, Friends of the Earth Netherlands
- NABU, Germany
- New York Climate Action Group, US
- NOAH, Friends of the Earth Denmark
- Oakland Institute, US
- ÖBV/Via Campesina Austria, Austria
- ONG Carbone Guinée, Guinea-Conakry
- Partnership for Policy Integrity, US
- People's Alliance Against Airport Expansion and Airport City - Yogyakarta, Indonesia
- Plane Stupid, UK
- Policy analysis and Research Institute of Lesotho (PARIL), Lesotho
- Pro Natura, Friends of the Earth Switzerland
- Pro Wildlife e.V., Germany
- Pro-Public, Friends of the Earth Nepal
- Protos, Belgium
- Quercus, Portugal
- Regenwald-Institut e.V., Germany
- Rettet den Regenwald - Rainforest Rescue, Germany
- RSEU, Friends of the Earth Russia
- Rural Reconstruction Nepal, Nepal
- Sahabat Alam Malaysia, Friends of the Earth Malaysia
- Sobrevivencia, Friends of the Earth Paraguay
- Spire, Norway
- Verdegaia, Galicia, Spain
- Welthaus Diözese Graz-Seckau, Austria
- ZERO – Association for the Sustainability of the Earth System, Portugal

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[1] ICAO is a “specialised UN organisation” set up in 1944, with 191 Member States

[2] Some startup companies and researchers are proposing “alternative aviation fuels” that would not be biofuels, e.g. converting carbon dioxide into jet fuel, however there is no evidence that those could work, except by using greatly more energy to produce such fuels than the energy released when they are burned. Nearly all of the Research and Development of “alternative aviation fuels” is going towards biofuels.

[3] http://unfccc.int/resource/docs/2016/sbi/eng/19.pdf

[4] The airline industry association IATA forecasts the number of air passengers worldwide to continue growing at a rate of 3.9% a year: iata.org/publications/Documents/global-report-sample2.pdf . Fuel efficiency per passenger, on the other hand, is improving at a rate of just 1.1% a year: theicct.org/sites/default/files/publications/ICCT_Aircraft-FE-Trends_20150902.pdf

[5] Hydrocarbons are molecules that contain only carbon and hydrogen atoms. All transport fuels made from fossil fuels are hydrocarbons, but it is possible to make hydrocarbons from plants and animal fats, too.

[6] icao.int/Meetings/a39/Documents/Resolutions/10075_en.pdf

[7] fern.org/sites/fern.org/files/Final_September.pdf

[8] icao.int/Meetings/CAAF2/Documents/CAAF.2.WP.013.4.en.pdf

[9] bp.com/content/dam/bp/en/corporate/pdf/energy-economics/statistical-review-2017/bp-statistical-review-of-world-energy-2017-renewable-energy.pdf

[10] ec.europa.eu/europeaid/sites/devco/files/study-impact-assesment-biofuels-production-on-development-pcd-201302_en_2.pdf

[11] See biofuelwatch.org.uk/files/EU-Bioenergy-Briefing2.pdf for details and weblinks regarding the negative impacts of biofuels promoted and used by the EU

[12] Hydrotreatment is a technology which was originally developed and has been routinely used for fossil fuel refining in oil refineries. The only biofuel refinery that regularly produces aviation biofuels at present is one owned by AltAir in California. It uses hydrotreatment technology. Neste has produced some aviation biofuels in one of its refineries, using such a technology, and there are no technical hurdles to producing aviation fuels in any HVO refinery, although the production costs are still much higher than those of HVO for road transport, and far more expensive than conventional jet fuel. Neste and Total are hoping that the use of much cheaper HVO in aviation fuel blends of up to 15% will shortly be approved (theicct.org/sites/default/files/publications/Aviation-Alt-Jet-Fuels_ICCT_White-Paper_22032017_vF.pdf).

[13] See for example biofuelsdigest.com/bdigest/2017/02/12/slump-in-vegetable-oil-prices-amidst-argentine-uncertainties/

[14] HVO refining requires hydrogen. Palm oil, as a saturated oil, requires less hydrogen in this process than other types of virgin vegetable oils such as rapeseed or soybean oil, which reduces the refining cost (uop.com/?document=uop-hydrorefining-green-diesel-tech-paper&download=1).

[15] iata.org/whatwedo/Documents/economics/chart-of-the-week-23-Jun-2017.pdf

[16] Neste, who produce 60% of the world's HVO at present, uses palm oil, as do the oil companies Eni, Cepsa and Repsol. Total is converting an oil refinery in France to HVO and is expected to also use palm oil. See rainforest-rescue.org/petitions/1096/trashing-rainforest-for-biofuel-a-total-disaster#more
gain.fas.usda.gov/Recent%20GAIN%20Publications/Spain%E2%80%99s%20Biodiesel%20and%20Renewable%20Diesel%20Overview%20_Madrid_Spain_6-27-2017.pdf
gain.fas.usda.gov/Recent%20GAIN%20Publications/Spain%E2%80%99s%20Biodiesel%20and%20Renewable%20Diesel%20Overview%20_Madrid_Spain_6-27-2017.pdf
eni.com/en_IT/innovation/technological-platforms/green-refinery.page

[17] E.g. icao.int/Meetings/altfuels17/Documents/Henrik%20Erametsa%20-%20Neste%20Corporation.pdf

[18] In an email to Biofuelwatch dated 31.7.17, a Neste spokesperson responded to a query about the proportion of Palm Fatty Acid Distillate in the company's biofuels, stating: "For competitive reasons Neste has decided not to disclose the proportions of specific waste and residue feedstocks and therefore unfortunately we cannot give clarifications to those specific requests. "

[19] nature.com/articles/ncomms3160

[20] actionaid.org/sites/files/actionaid/adding_fuel_to_the_flame_actionaid_2013_final.pdf

[21] ecofys.com/files/files/ecofys-2013-report-on-land-grabbing-for-biofuels.pdf