



# NISA

## Nordic Initiative for Sustainable Aviation

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An association working to promote and develop a more sustainable aviation industry

**Main purposes:** Facilitate, coordinate and push forward the development of sustainable and alternative fuel for the aviation industry

**Overall objectives are:**

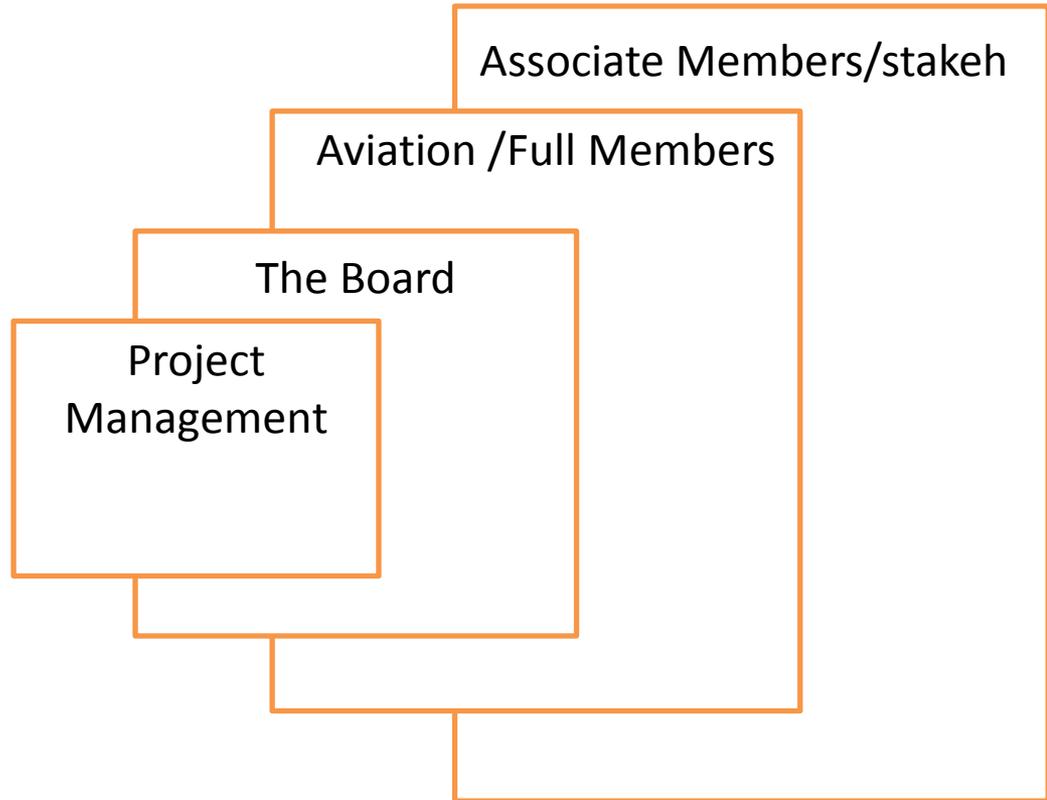
Helping catalyzing and promoting by no later than 2016 at least 3 pilot projects covering the value chain for sustainable jet fuel

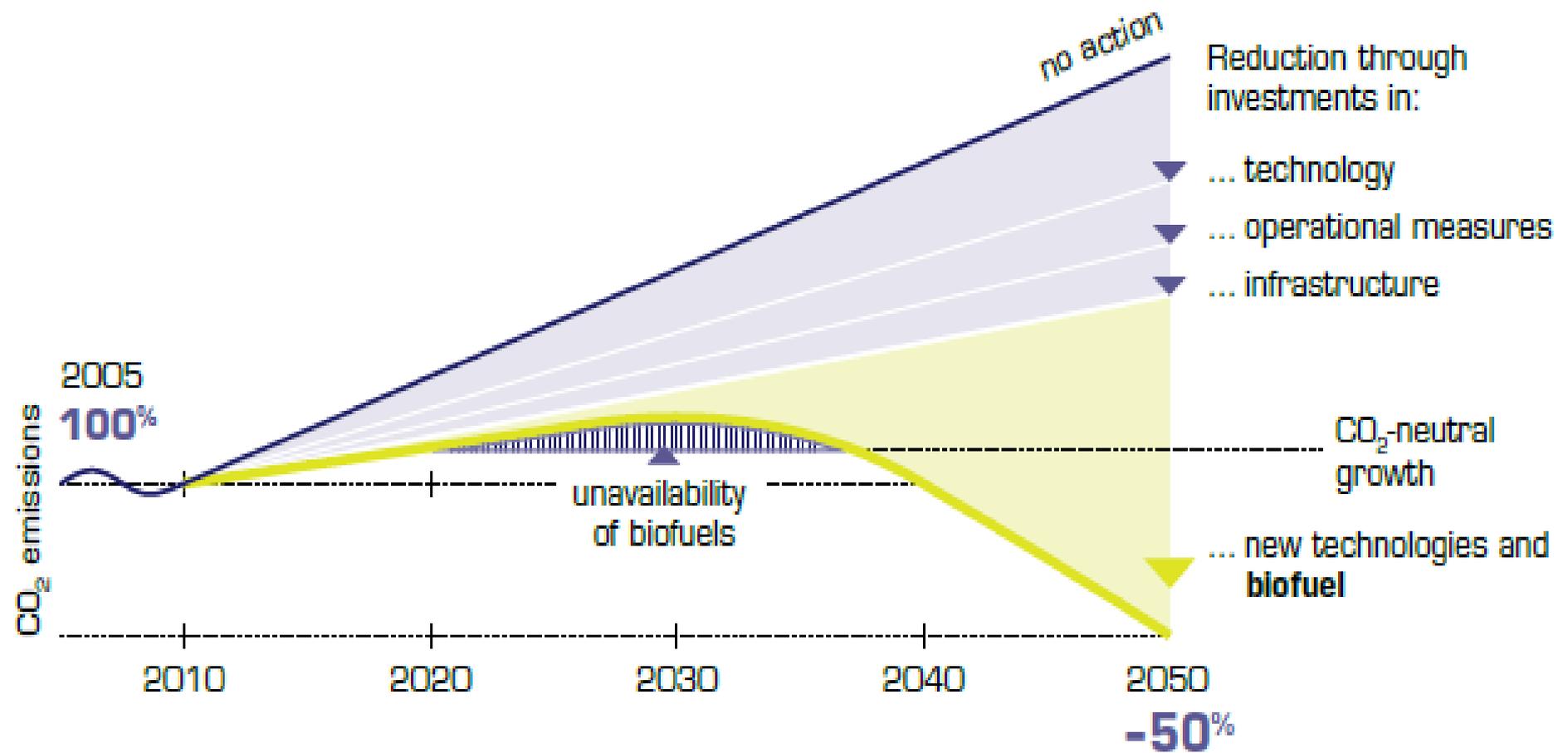
Catalyzing the development of a business case by 2015-2016 for a project covering a full scale biofuel production for aviation in the Nordic Region

Contribute to ensure the Nordic region as a minimum meets its share of the EU Flight Path target of 2 million tons or more of sustainable jet fuel in 2020

| Org/company                | Country                          |
|----------------------------|----------------------------------|
| SAS                        | Sweden, Denmark, Norway, Finland |
| NISA                       | Nordic                           |
| Swedavia                   | Sweden                           |
| Avinor                     | Norway                           |
| Copenhagen Airports        | Denmark                          |
| Airbus                     | France, Germany, UK              |
| Boeing                     | USA/UK                           |
| Finnair                    | Finland                          |
| Finavia                    | Finland                          |
| Atlantic Airways           | Faroe Islands                    |
| Air Greenland              | Greenland                        |
| Icelandair                 | Iceland                          |
| TUI Fly Nordic             | Sweden                           |
| Danish Confederations/BDL  | Denmark                          |
| NHO Luftfart               | Norway                           |
| IATA                       | Switzerland                      |
| Svenskt Flyg               | Sweden                           |
| FlygBranschen              | Sweden                           |
| Ministry of Transport      | Finland                          |
| Danish Transport Authority | Denmark                          |
| Isavia, Reykjavík          | Iceland                          |
| Swedish Transport Agency   | Sweden                           |
| Energimyndigheten          | Sweden                           |
| Energistyrelsen            | Denmark                          |

# Organization





Source: IATA annual report, 2010; ATAG presentation



# OUR CLIMATE ACTION



*Targets are at the global level – not on States or operators and targets do not mean slowing down the growth of aviation*

# Sustainability is key

(Corporate social responsibility)

- Not just a word - but a safeguard for a growing future aviation
- Push for solid sustainability criteria for biomass and processes
- Total sustainable supply chains
- Sufficient Life Cycle Analysis
- Encourage the development and adoption of a global sustainability standard (RSB)



## SAFUG

- Exhibit minimal impact on biodiversity
- Meet a sustainability standard with respect to land, water, and energy use
- Do not displace or compete with food crops
- Provide a positive socioeconomic impact
- Do not require any special fuel handling equipment, distribution systems, or changes to engine design

## Regional Biofuel-consortia/initiatives established

Brazilian Alliance for Aviation Biofuels, ABRABA Brazil

Aviation Initiative for Renewable Energy in (AIREG) ([Germany](#))

AlfaBird, Sustainable Way for Alternative Fuels in Aviation and Flight Path 2020 ([EU](#))

Initiatives for the Production and Consumption of Biojet Fuel for Aviation ([Spain](#))

Saltwater Tolerant Biomass As A Source of Aviation Fuel, ([Abu Dhabi](#))

Commercial Aviation Alternative Fuels Initiative (CAAFI) ([US](#))

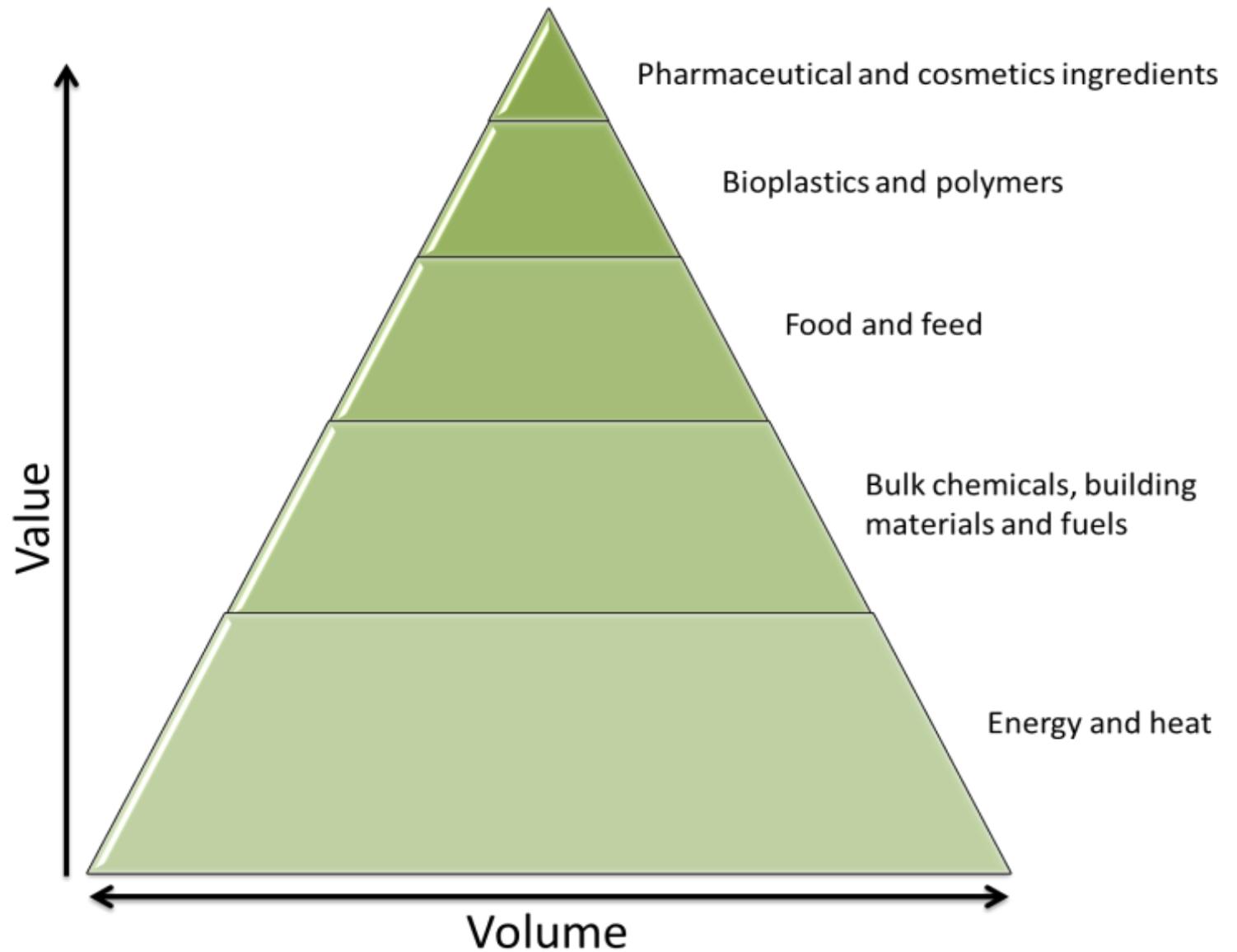
Flight Path to Sustainable Aviation Fuels CSIRO ([Australia and New Zealand](#))

NISA, [The Nordic Countries](#)

Also initiatives in [Indonesia](#), [China](#), [Mexico](#), [Qatar](#), [Italy](#) and more....

[Airbus and Boeing](#), - several engagements globally, - and as well [ICAO](#) and [IATA](#) of course plays overall coordinating and supporting roles

- There is a clear requirement for stronger political and economic support as well as cooperation both nationally and internationally
- There is a need to create global solutions and guidelines for production of sustainable aviation fuels, while reducing emissions of greenhouse gases
- Sustainable jetfuel (sustainable future for aviation) is a serious issue for society
- It is important to engage and facilitate the public interest in the industry's efforts to create a sustainable future for aviation
- Biofuels for aviation should become part of National Energy Plans worldwide
- Need to establish public-private partnerships to coordinate the development to ensure access to sustainable fuel, regional cleantech solutions and consequently, additional employment and growth
- NISA intention to co-ordinate and co-operate more with international bodies and NGO's



# Aviation Sustainable jetfuel

**NISA  
Progres  
Plan:**

**National  
studies  
to  
Nordic  
Flight  
Path**

**Prestudy phase - February / Aug 2014**

**September 2014**

**March 2015 – Summer 2016**

**Ultimo 2016**

Network/pre-studies/initiatives  
Sweden

Network/pre-studies/initiatives  
Norway

Network/pre-studies/initiatives  
Denmark

Network/pre-studies/initiatives  
Finland

Network/pre-studies/initiatives  
Other/International initiatives

**Nordic Workshop**

Invited stakeholders from authorities, researchers and the supply chain

Outcome:

1. Dialogue and collaboration - cross borders
2. First step to a Nordic Study in sustainable jetfuels

**Nordic study**

Nordic perspectives in the use and production of advanced biojetfuels

Co-funded by Nordic Council of ministers

Steering group: Representatives from authorities in all the Nordic countries and NISA

Outcome:

1. Nordic Route Forward
2. Recommendations
3. Nordic potentials
4. Policy paper/ICAO 2016

**Nordic Flight Path Business case**

## **Sustainable jetfuels/Nordic/national studies - and NISA Workshop Sep 2014:**

### **Aviation statements:**

A liquid fuel is a prerequisite for still many years

The market is there – will expand in the coming years

Alternative fuel specifications is in place – more will be approved in near future

Infrastructure is a societal condition - Aviation is a part of the infrastructure

### **Nordic potentials:**

Non fossil materials/feedstock are available

Technical solutions are within reach - matter of priorities and financing

A lot of strengths and opportunities, - Private/Private and Private/Public visa versa

Clean tech cooperation with solutions that could benefit industry, research and society

### **Suggestions on steps ahead:**

Access to money for the necessary developments and decisions (R&D) and projects

Economy of scale – and large breakthrough projects

Integration of new fuels production in existing plants/co-processing

Dialogue on incentives/regulation/blend-in mandates etc

Airline customer-requirements for reducing carbon footprint, Green funds etc

# Biofuels for aircraft

The Nordic Council of Ministers has launched a study of the climatic impact and commercial potential of using biofuels for aircraft. Feb 23, 2015



“I hope that a Nordic approach will identify there is potential for green growth in biofuels for aircraft. Denmark can’t propel this by itself, but the prospects may change dramatically if the Nordic countries join forces,” Petersen says. The outcome of these efforts will be presented at a conference in 2016. In addition to their positive climatic impact, biofuels for aircraft may also have significant commercial potential.

## **Green aviation**

At its general meeting in 2016, the UN’s aviation organisation ICAO will discuss policy instruments that will reduce the aviation industry’s CO2 emissions. “I hope that this Nordic initiative will teach us a great deal about advanced biofuels for aircraft and help global climate ambitions....” Petersen concludes

# Next steps

**Joint Nordic study / Nordic Council of Ministers, national energy-/transport/environment agencies and the aviation sector (NISA)**

**Invitation to tender: “Perspectives on the use of advanced biofuels for aviation – Nordic perspectives”**

**Possibilities, barriers and gaps:**

- Building on ongoing and former initiatives like the feasibility studies by Avinor, NIRAS/Denmark, Swedish studies, Finnish Trp Ministry, – Airbus and Boeing, ao projects and experiences globally
- Identify possible cross-cutting initiatives and collaborations (Nordic companies, organisations authorities, institutions etc.), synergy solutions etc
- Identify international actors with whom a Nordic initiative on production could engage
- Opportunities of strategic collaboration processes
- Dialogue with, and stronger pressure on, existing fuel suppliers
- Influencing the political landscape, dialogue, partnerships etc

## Further ongoing Nordic projects

- Four Nordic demo-flights (SAS two, Finnair and Norwegian) on sustainable fuel autumn 2014
- A Flight Green Fund under construction (SkyNRG and others)
- Gardemoen (Norway) and Karlstad (Sweden) first biohubs, spring 2015
- FT production in pipeline, Norway, - based on residuals from forests
- Study on Future Liquid Aviation Biofuels Based on Ethers for Gas Turbine Engines – Budget more than 4 Mio € (80% granted) 4 years from Jan 1<sup>st</sup> 2015
- Neste Oil (Finland) involved in different development projects



**NISA**

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2015

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# Pass ways.....

