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AVIATION RESEARCH ECOSYSTEM ADVANCED NOVEL APPROACH

D1.7 – Non-EU Associated

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Abstract

AREANA deliverable work package 1.7 outlines the aviation research programs of relevant non-associated countries; where known, the scope of these programs and the programs potential willingness for collaboration with national programs from associated nations.

11 countries have been examined in more detail: Australia, Brazil, Canada, China, India, Japan, Singapore, South Korea, Switzerland, United Kingdom and United States of America.

Many of these countries are potentially willing to collaborate further with national programmes and these should be approached for further discussions around the AREANA MOU.

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1. Executive Summary

This task will identify and analyse non-associated countries national and regional contribution to aviation research funding. The purpose of the task is to identify the type of funding allocated as research programmes and projects developed because of this funding. In support of the research, information has been collected from the main funding organisations within each country which have a focus on aviation research, or where this hasn't been possible, on programmes which have a wider scope. The data collected is focused on non-associated countries and a database has been created identifying the current funding opportunities, scope of the programme, the budget and timeframes over which the programme is running, which organisation owns the budget and makes the decisions on the which projects to fund as well as whether the nation and relevant programme has a willingness for collaboration with associated countries at some point in the future.

For the purposes of clarity the countries outlined in work package 1.7 were the countries which had not associated to EU programmes as the outset of the AREANA project in January 2024.

The initial work focused on the United Kingdom and Switzerland but has expanded to include 9 further countries which have been identified as relevant nations which have a significant aviation research base. Two of these countries, India and China were included to find out information on what programmes these nations were running without an expectation as to whether they might be interested in further collaboration.

It is worth noting that the data and analysis collected represents a snapshot in time and does not guarantee that programmes will exist or want to collaborate in the future (even if the programme has already started).

2. National Funding Cycles

Governments around the world generally run funding cycles aligned to political cycles and few countries have long term commitments to research funding which go beyond political cycles. The European Union's multi-annual financial framework (MFF) sets the overall budget for a period of 7 years, which is a longer timeframe than most national political cycles and is one of the few examples of programmes which span political cycles.

Aeronautics and aviation research is generally constrained around the entry into service of new aircraft, which is typically around 10-15 years. This is longer than national funding or European Union MFF funding cycles and is therefore difficult to reconcile with shorter term funding opportunities.

Countries which have aircraft manufacturing footprints generally have larger government aerospace funding programmes, however more and more countries consider aerospace to be of national strategic importance due to spillover opportunities into other sectors and are introducing programmes to fund higher technology areas such as aerospace.

There are few countries which have longer term funding arrangements for aerospace research, for example the UK government's ATI programme has a longer-term commitment for funding which goes beyond a political cycle, but the amount of funding is still prescribed by the national funding cycles. Also, most countries do not have aligned political or funding cycles which will create potential problems for future collaborations between national programmes, e.g. elections in the UK and Germany are at different times.

There are other potential issues such as geographical distance or time zones which may also cause potential problems for collaboration.

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3. Non-Associated Countries

3.1. Introduction

Aviation is inherently international, and collaboration plays an important role in delivering competitiveness to the sector. The European Union has extensive international programmes funded through Horizon Europe, principally in the Clean Aviation Joint Undertaking (CAJU). The CAJU is a public private partnership focusing on transforming aviation into a sustainable and climate neutral industry by 2050. The budget for the CAJU is €4.1billion. While this is a sizeable sum, it is a small fraction of the amount required to certify a new aircraft, especially a new aircraft with a new fuel and propulsion system such as hydrogen fuel cell / electric propulsion. To give some context, it cost Boeing over $32 billion to certify the 787 Dreamliner programme [1], which although being a clean sheet design, was still substantially similar to previous aircraft designs.

Alongside the EU's funding research and innovation programme, national programmes also play a major role in developing new technologies for zero emission aviation. Many European counties such as the UK, Germany and France have major aerospace programmes which invest in new technologies such as hydrogen propulsion, wing design and fuel systems.

The CAJU has a large budget, but as already identified, is not large enough to develop brand new zero emission aircraft. Therefore, identifying collaboration opportunities within national aerospace programmes to develop zero emission aircraft is a potential way to address the risks of developing new zero emission aviation.

The ARENEA work package 1, in its missions to create synergies in aviation research, aims to find out information on national programmes and their willingness and ability to collaborate outside of European or other international funding mechanisms. As aviation is globally important, for many countries this important sector is stimulated at a national level by providing grant funding for technology developments, for example the ATI Programme in the UK, LUFO funding in Germany etc. As these are national funding programmes, it is important to note that the funding will always go towards nationally important projects in the national interest. The aim of AREANA is not to change this, but to stimulate possible collaborations between nations with national funds, rather than rely purely on European funding for cross boarder collaboration.

A search of non-EU associated nations with aerospace and aviation programmes, which may be interested in international collaboration on national programmes, has resulted in the following list (in alphabetical order).

(Note that at the start of the AREANA programme, the UK, Canada and Switzerland had not yet associated with EU programmes; but have since associated. However, for practical reasons, they have remained in work package 1.7.)

Australia

Brazil

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Canada
China
India
Japan
Singapore
South Korea
Switzerland
United Kingdom
United States of America

Each of these countries has been examined in more detail to understand their respective aerospace and aviation programmes, and efforts have been made as to whether there is an interest in collaborating with other national programmes. As leaders in this work package, UKRI contacted many of these countries through the UK's Science and Innovation Network (SIN), a network based out of the UK's embassies around the globe, or through other contacts and searches.

It should be noted that the information provided here is a snapshot in time and does not always mean that there will be future funding opportunities for a particular nation. As discussed above, some countries do have longer term programmes which give a certain confidence about future spending, however, it is not possible to provide this level of detail for each country as most do not have longer term programmes.

3.2. Non-Associated Countries

3.2.1. Australia

Aviation is a very important sector in Australia due to the geographical distances between population centres. Despite this, it is not a major manufacturing player and does not have a significant aerospace manufacturing sector.

Australia has committed to reducing aviation emissions to 43% below 2005 levels by 2030 and achieving net zero emissions by 2050. The Aviation White Paper "Towards 2050" [2], outlines the opportunities for zero carbon aviation as using renewable hydrogen or electric powered aircraft on shorter routes; the adoption of SAF to replace traditional jet fuel; new and more fuel-efficient aircraft and increasing electrification of ground handling vehicles.

Australia has one aviation programme to develop aviation technologies, the Emerging Aviation Technology Partnership (EATP) Programme [3], with funding from The Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts. This programme has a $32.5 million budget for two rounds and runs until 2026. The EATP is focused on farming, boosting regional connectivity and improving outcomes for regional and remote First Nations communities. The EATP programme focuses mainly on drones and emerging advanced air mobility. The funding for the EATP

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programme has already been allocated and it is not known whether there will be additional funding in this programme or whether there will be a new and different aviation programme in the future.

3.2.2. Brazil

Brazil is an important player in the aviation industry, with Embraer's headquarters and main production based in the country. Brazil has plans to decarbonise aviation by 2050 through SAF mandates. Starting in 2027, airlines are to reduce emissions by 1% and progressively increasing to 10% by 2037 [4].

Brazil has two research programmes which both have wider scopes than just aviation alone: The National Bank for Economic and Social Development (BNDES) and FINEP (Brazilian Innovation Agency) [5]. BNDES supports many different areas of the economy. The support it provides to aviation is principally for Embraer and sustainable aviation fuels (SAF) scale up financing. FINEP programmes fund Brazilian research institutes and companies and encompasses everything from basic research to product innovation and recently has supported scale up phases.

3.2.3. Canada

Aviation is critical to Canada's transport network and is essential to connecting Canadians from coast to coast and the rest of the world. Aviation also fosters Canada's economic growth through domestic and international trade. Canada also has a substantial aerospace manufacturing footprint with Boeing, Airbus, Rolls Royce, Pratt and Whitney and Bombardier present in the country. Canada has ambitoious plans to decarbonising aviation outlined through its Aviation Climate Action Plan 2022-2030 [6] which describes a decarbonisation strategy; principally with SAF, improvements in operations and new aircraft technologies for shorter range aircraft. The plan also suggests that out of sector reductions are required to meet net zero by 2050.

Canada has several larger programmes to support the aviation and aerospace sectors. The Strategic Innovation Fund (SIF) [7], The Low Carbon Economy Fund (LCEF) [8], The National Research Council Industrial Research Assistance Programme (NRC IRAP) [9] and Global Innovation Clusters (GAC) [10].

The SIF provides major investments in innovation projects on a wide scope of industrial areas, which includes aerospace. SIF provides funding for 2 categories of project: Business Innovation and Growth projects (led by individual companies funding to support their business) and Collaboration and Networks projects (led by companies or not for profits seeking funding to support their innovation network). Business Innovation and Growth projects have received $9.2billion in SIF funding since 2021 with 16 projects within the aerospace sector, and Collaboration and Network projects have received $1.2billion in funding.

The LCEF supports projects which, among other areas, reduces greenhouse gas emissions and generates clean growth. This fund is part of Canada's 2030 Emissions Reduction Plan.

The NRC IRAP is Canada's leading innovation programme for small and medium sized businesses. It has a budget of $100million until 2026.

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The Global Innovation Clusters for Advanced Manufacturing aim to strengthen the competitiveness and growth potential of Canada's advanced manufacturing ecosystem, securing supply chains and protecting the environment.

Canada is interested in collaborating with other nations in aviation and aerospace and has in the past collaborated with other nations to run research programmes.

3.2.4. China

China has ambitious plans to decarbonise its economy by 2060 and the Chinese aviation sector is aligning with these national targets. In the recent past, China has accelerated its manufacturing supply base for aerospace manufacturing; Boeing manufactures some parts there and Airbus have a final assembly line based in Tianjin, the first assembly line outside of Europe. China, however, has developed its own aircraft through COMAC (Commercial Aircraft Corporation of China) and this represents a challenge to the traditional duopoly of Boeing and Airbus. China also has ambitious plans to scale SAF production to replace fossil fuel kerosene.

China has two aerospace programmes: National S&T Megaprojects and The Technology Innovation Guiding Fund(s). Both of these programmes have a wider scope than just aviation and it is difficult to find out more information on these Chinese aerospace programmes. It has been difficult to make direct contact with the decision makers within Chinese research programmes. It would be challenging to collaborate with China due to the highly competitive situation and possible issues with intellectual property.

3.2.5. India

India has signed the Paris Agreement and has committed to reach net zero by 2070, the includes India's aviation sector which is aligned to industry aspirations to achieve net zero emissions by 2050. Both Boeing and Airbus have a presence in India, with the latter having a final assembly line for the C295 military aircraft.

India has two programmes related to aerospace and aviation. The Aeronautics Research and Development Board (under the Defence Research and Development Organisation, DRDO) and the Innovate for Defence Excellence (iDEX). India's aerospace and aviation research ecosystem is tied into its defence research. It has been difficult to make direct contact with the decision makers within Indian research programmes. There may interest in collaboration with India, however it may be difficult due to the challenging bureaucracy.

3.2.6. Japan

Japan is actively pursuing decarbonisation of aviation, aiming for net zero by 2050. They have a SAF target of 10% by 2030 (the same as the UK and higher than the EU's at 6%) [11]. Mitsubishi Heavy Industries (MHI) and Kawasaki Heavy Industries (KHI) both manufacture key components for Boeing. Also, Airbus uses the supply chain in Japan for parts and servicing.

The Ministry of Economy, Trade, and Industry (METI) deploys funding into two main specialised bodies with activities relevant to clean aircraft production. JAXA (the Japanese Aerospace Exploration Agency) the primary RTO focusing on civil and space for medium-high TRL applications and NEDO (New Energy and Industrial Technology Development Organisation), a pan-sector technology development and acceleration body active in primary energy, material production and future cross-cutting technology such as AI, robotics and 5G.

The JAXA aviation programme has four aspects aligning the research: 1) Sky Green+, contributing to environment and user-friendly sustainable air transport; 2) Sky4All, bringing aviation closer to people in daily life and disaster relief; 3) Sky DX, driving digital transformation of the entire life cycle of aircraft, and 4) Fundamental Research, strategically supporting R&D activities with expertise in aeronautics.

The NEDO programme is a wider scope programme called the Green Innovation Fund and has a budget of 2 trillion yen.

There is some appetite from Japan for collaboration with EU-associated nations for development of aeronautics research.

3.2.7. South Korea

South Korea is actively pursuing aviation decarbonisation with a 1% SAF blending mandate by 2027 [12].

South Korea's aerospace industry is largely driven by major players such as Korean Air and Korea Aerospace Industries (KAI). KAI manufacturers and assembles components for Boeing and Airbus and produce aircraft using homegrown technologies such as UAVs, rotor wing and other fixed wing aircraft. The Science, Technology and Innovation Office (STIO) under the Ministry of Science has committed $18 billion as the 2025 budget for research funding across multiple sectors. There is overlap between aeronautics and space - The Korean Aerospace Administration oversees the Korean Aerospace Research Institute (KARI) which oversees aerospace research and development, including rockets, satellites and other technologies with commercial applications.

There has been recent collaboration between South Korea and European partners in the EU-ROK Aviation Partnership Project (APP) which ran from 2021 to 2024. The project aimed to enhance partnerships between EU and North Asian counties in the domain of civil aviation.

There is potential for collaboration between European Partners and South Korea to build and enhance collaboration in aviation programmes.

3.2.8. Singapore

Singapore has ambitious plans for its aviation industry including commitments to achieve net zero aviation emissions by 2050 through the Singapore Sustainable Air Hub Blueprint [13], mainly focusing on sustainable aviation fuel (SAF), however Singapore is actively exploring hydrogen powered aviation as parts of its aviation decarbonisation plan.

Singapore has one large aviation programme called the Aviation Development Fund (ADF). The ADF has a budget of $280 million and is due to finish in 2025 and is run and managed by the Civil Aviation

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Authority of Singapore (CAAS). Although the ADF does fund some aerospace technology projects, it also funds other aviation projects such as cargo monitoring and early check in.

There is some appetite for collaboration between Singapore and EU-associated countries.

3.2.9. Switzerland

Switzerland has one programme funding research and innovation in aviation, 'Sonderfinanzierung Luftverkehr' (Special Financing for Air Transport). This programme covers early-stage research and development (TRL1-6) and has a budget of CHF50million annually and is delivered and managed by the Federal Office of Civil Aviation. The programme supports developments in environmental protection, security and safety, financial aid is only granted on request with a maximum grant rate of 80%.

At the moment, the Federal Office of Civil Aviation has suggested that it is not willing to collaborate with other nations on aviation research.

3.2.10. United Kingdom

The United Kingdom is one of the major global players in aerospace and aviation with a large manufacturing footprint and significant research budgets to match the importance of the sector to the UK economy. The UK has committed to net zero aviation by 2050 [14], with a target of net zero for domestic flights by 2040 [15]. The UK has a SAF mandate to promote uptake increasing from 2% in 2025 to 10% by 2030. The UK also has invested in zero emission aircraft technologies: hydrogen and electric flight.

The UK has four programmes related to aerospace and aviation. The ATI Programme [16], the Future Flight Challenge [17], the Non-CO2 Programme [18] and the Advanced Fuel Fund [19].

The ATI Programme is the UK Government's flagship industrial aerospace programme which funds on-aircraft technologies from TRL 4-6. The ATI Programme started in 2013 and is scheduled to currently finish in 2030. The ATI Programme is run and managed by the Department of Business and Trade (DBT) and has a budget of £195million per year. The ATI Programme supports the development of on-platform technologies and follows the co-developed industry-government strategy 'Destination Zero'. The programme mainly funds technology developments in wing and engines but includes other aspects of on platform technologies such as hydrogen propulsion systems and materials research, particularly composites The DBT is currently unwilling to collaborate with other national programmes.

The Future Flight Challenge is a government funded programme, supporting the future aviation system of systems, principally for drones, eVTOLS and smaller aircraft. The programme started in 2019 and is currently scheduled to finish in 2026. The Future Flight Challenge is principally an industrial programme funding TRL 3-6 and is run and managed by Innovate UK, part of UKRI.

The Non-CO2 Programme is an academic programme examining the non-CO2 effects of aviation, such as contrails and NOx emissions, of current and future aircraft types, looking at lower TRL 1-3. Starting

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in 2024, it is scheduled to finish in 2028, it is funded by NERC, part of UKRI, and the Department for Transport (DfT).

The Advanced Fuel Fund started in 2023 and is scheduled to finish in 2026. The programme is funded by the Department for Transport and has funded first-of-a-kind (FOAK) commercial and demonstration-scale projects in the UK at all development stages up to construction, directly contributing to the establishment of a UK SAF industry.

The UK does have some willingness to develop international collaborations with other national programmes.

3.2.11. United States of America

The United States of America's aviation industry is committed to achieving net zero carbon emissions by 2050 and has released an aviation climate action plan in 2024 on how it will achieve this [20]. Boeing has its major production hubs based in the country, however there is also a strong presence of many of the major primes and OEMs, for example Airbus, GE, P&W, Rolls Royce and Safran all have bases in the US.

The United States has several programmes to support research and development. The FAA (Federal Aviation Administration) provides grant funding to industry and academia through the CLEEN (Continuous Low Energy, Emissions and Noise) programme and Aviation Research Grants Programme [22]. Two initiatives under the Inflation Reduction Act (IRA) support technology development (FAST-TECH) and development of Sustainable Aviation Fuels (FAST-SAF) [23]. DARPA (Defense Advanced Research Projects Agency) [24] and ARPA-E (Advanced Research Projects Agency–Energy) provide grant funding to high-risk innovative technology development. Finally, NASA supports civil aviation technologies through a series of projects with industry, including ACCES looking at disruptive technologies.

Through its various programmes, the US supports all aspects of future aviation. It is also worth noting that the US also has a strong investor landscape, with some of the newer aerospace companies either setting up or moving to the US.

4. Conclusions

The ARENA project aims to improve the efficiency of aviation research in Europe and to strengthen international cooperation with friendly nations outside the EU. AREANA was structured to deliver this with 3 work packages. The first work package focuses on coordinating and supporting European, national and regional aviation research and innovation programmes. As a part of work package 1, the project examined the aviation ecosystem of non-associated countries and the possibility of whether these countries would be interesting in collaborating with European nations at a national level rather than through European funding. This has been delivered in work package 1.7, this deliverable.

The work package identified counties of significant interest, either as major players in aviation research, e.g. United States of America; countries with close ties to the associated countries, e.g. Singapore, and other friendly nations such as Australia. The work package also looked at China and India as major nations with large GDP which have a growing interest in aviation technologies.

11 countries were examined to determine their aviation ecosystems, and many were contacted to determine whether there would be interest in further collaboration. At the beginning of this programme, several countries had not associated and were therefore fell under the category of non-associated countries, but have since associated (Canada, Switzerland and the United Kingdom).

The work focused on examining what programmes are currently in progress along with any information which might be available on future funding opportunities.

Analysis of the 11 countries identified, shows that there is approximate alignment between countries which have large funding programmes and those with an aerospace manufacturing footprint. The nations with large programmes obviously want to keep aerospace technologies and grow their manufacturing footprint and thus fund aerospace research.

The countries which have shown interest in possible further collaboration are Canda, Japan, South Korea, Singapore and the United Kingdom although as it has not been possible to directly contact some of these countries and so it is likely that there will be interest from other nations, although there may be challenges in collaborating with some of these nations for other reasons.

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5. Glossary

ARC	Aerospace Research Consortium, UK
ATI	Aerospace Technology Institute UK
CLEEN	Continuous Low Energy Emissions and Noise
DRDO	Defence Research and Development Organisation, India
DBT	Department for Business and Trade, UK
DfT	Department for Transport, UK
eVTOL	electric vertical take-off and landing
GDP	gross domestic product
IRA	Inflation Reduction Act
KHI	Kawasaki Heavy Industries
MHI	Mitushibi Heavy Industries
MLIT	Ministry of Land, Infrastructure, Transport and Tourism, Japan
METI	Ministry of Economy, Trade and Industry, Japan
OEM	Original Equipment Manufacturer
SAF	Sustainable Aviation Fuel
SAP	Singapore Aerospace Programme

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7. Appendix 1

Table 1 - Non-associated countries main national programmes and funding organisations

No.	Country	Programme	Is the programme aerospace/aviation specific or does it have a wider scope	Who Provides the Budget
1	United Kingdom	ATI Programme	Aviation	Department for Business and Trade
2	United Kingdom	Future Flight Programme	Aviation	UKRI
3	United Kingdom	Aviation Non-CO2	Aviation	UKRI
4	United Kingdom	Advanced Fuel Fund	Aviation (SAF)	Department for Transport
5	Switzerland	Sonderfinanzierung Luftverkehr	Aviation	Federal Office of Civil Aviation
6	Canada	Strategic Innovation Fund	Wider Scope	Innovation, Science and Economic Development
7	Canada	Low Carbon Economy Fund	Wider Scope	Environment and Climate Change Canada
8	Canada	National Research Council (IRAP)	Wider Scope	National Research Council Canada
9	Canada	Global Innovation Cluster	Wider Scope	Innovation, Science and Economic Development
10	South Korea	National R&D Budget	Wider Scope	Ministry of Science and ICT

11	Singapore	Singapore Aerospace Programme (SAP)	Aviation	A*Star
12	India	Aeronautics Research & Development Board	Aviation	Defence Research and Development Organisation (DRDO)
13	India	Innovation for Defence Excellence (iDEX)	Aviation & Defence	Department of Defence Production
14	USA	CLEEN	Aviation	FAA
15	USA	FAST-TECH (IRA)	Aviation	The Inflation Reduction Act Program Office - U.S. Department of the Treasury
16	USA	FAST-SAF (IRA)	Aviation	The Inflation Reduction Act Program Office - U.S. Department of the Treasury
17	USA	Aviation Research Grants	Aviation	FAA
18	USA	DARPA	Aviation and Defence	Department of Defence
19	USA	ARPA-E	Wider Scope	Department for Energy
20	China	National S&T Megaprojects	Wider Scope	Unknown
21	China	The Technology Innovation Guiding Fund	Wider Scope	Unknown
22	Brazil	BDNES	Wider Scope	Unknown
23	Brazil	FINEP	Wider Scope	Unknown

24	Australia	EATP Program	Aviation	Department of Infrastructure, Transport, Regional Development, Communications, Sports and the Arts
25	Japan	JAXA	Wider Scope	Ministry of Economy, Trade and Industry
26	Japan	Green Innovation Fund	Wider Scope	Ministry of Economy, Trade and Industry

Table 2 - Non-Assocated countries national programmes and funding type and which organisations can participate in the calls

No.	Country	Programme	Grant	Loan	SME	Large	RTO	Uni	Public Sector
1	United Kingdom	ATI Programme	Yes	No	Yes	Yes	Yes	Yes	Yes
2	United Kingdom	Future Flight Programme	Yes	No	Yes	Yes	Yes	Yes	Yes
3	United Kingdom	Aviation Non-CO2	Yes	No	No	No	No	Yes	No
4	United Kingdom	Advanced Fuel Fund	Yes	No	Yes	Yes	No	No	No
5	Switzerland	Sonderfinanzierung Luftverkehr	Yes	No	Yes	Yes	Yes	Yes	Yes
6	Canada	Strategic Innovation Fund	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	Canada	Low Carbon Economy Fund	Yes	No	Yes	Yes	Yes	Yes	Yes

8	Canada	National Research Council (IRAP)	Yes	No	Yes	No	Yes	Yes	Yes
9	Canada	Global Innovation Cluster	Yes	No	Yes	Yes	Yes		Yes
10	South Korea	National R&D Budget	Yes	No	Yes	Yes			
11	Singapore	Singapore Aerospace Programme (SAP)			Yes	Yes			
12	India	Aeronautics Research & Development Board							
13	India	Innovation for Defence Excellence (iDEX)							
14	USA	CLEEN	Yes	No	Yes	Yes	Yes		No
15	USA	FAST-TECH (IRA)	Yes	No	Yes	Yes	No	No	No
16	USA	FAST-SAF (IRA)	No	Tax Credit	Yes	Yes	No	No	No
17	USA	Aviation Research Grants	Yes	No	Yes	Yes	Yes	Yes	Yes
18	USA	DARPA	Yes	No	Yes	Yes	Yes	Yes	
19	USA	ARPA-E	Yes	No	Yes	Yes	Yes	No	No
20	China	National S&T Megaprojects							

21	China	The Technology Innovation Guiding Fund							
22	Brazil	BDNES		Yes	Yes	Yes			
23	Brazil	FINEP		Yes	Yes	Yes			
24	Australia	EATP Program	Yes	No	Yes	Yes	Yes	Yes	Yes
25	Japan	JAXA	Yes	No	Yes	Yes	Yes	Yes	
26	Japan	Green Innovation Fund	Yes	No	Yes	Yes	Yes	Yes	Yes

Table 3 - Non associated county strategy references

No.	Country	Strategy
1	United Kingdom	Destination Zero
5	Switzerland	AVISTRAT-CH
6	Canada	National Aerospace and Defence Strategic Framework
10	South Korea	In development
11	Singapore	Air Transport Industry Transformation Map (ITM) 2025 and the Sustainable Air Hub Blueprint

12	India	National Civil Aviation Policy (NCAP) 2016
14	USA	U.S. National Aviation Safety Plan (NASP), the National Aviation Climate Action Plan, and the FAA Reauthorization Act of 2024
20	China	Belt and Road Initiative, BRI
22	Brazil	Programa Voo Simples Combustível do Futuro Asas para Todos
24	Australia	Aviation White Paper, Towards 2050
25	Japan	Various strategic plans led by MLIT and METI