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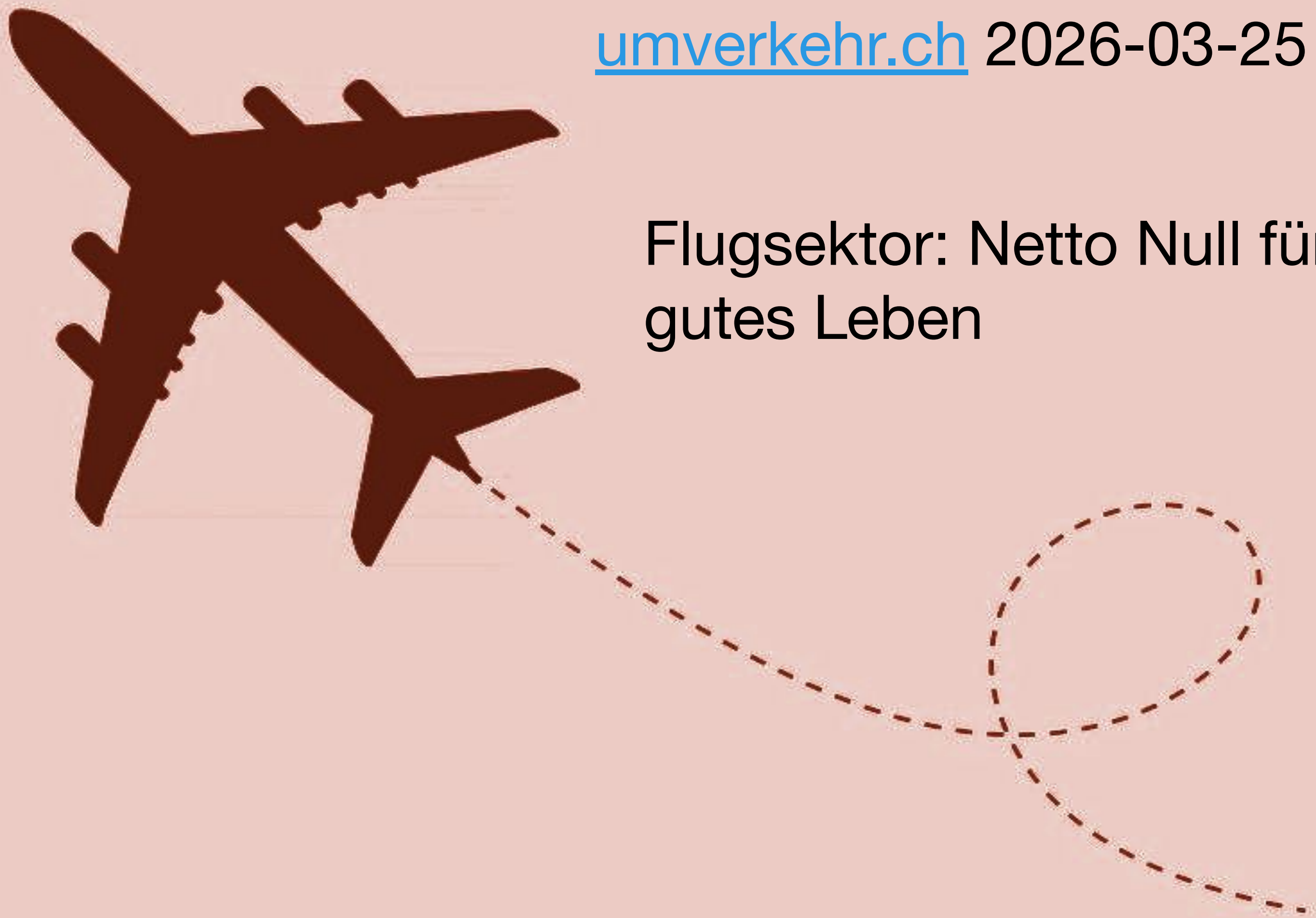
Flugsektor: Netto Null für ein gutes Leben



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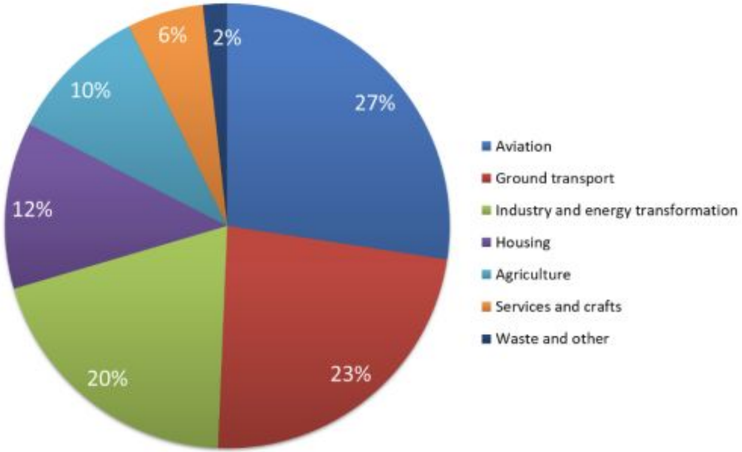

Figure 3: Total global warming impact of main source sectors in Switzerland in 2019, including international aviation (RFI=3). Own figure with data from FOEN (2021)

Table 16: Comparing the tax scenarios in 2023 (post-COVID-19 upper-bound elasticities)

	CO_2 Act	CO_2 Act with growth	UK Duty	CO_2 levy
Passengers	-21%	-26%	-15%	-19%
CO_2 emissions	-16%	-19%	-14%	-17%
Tax revenue (MCHF)	964	1 146	882	1 086

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Introducing an Air Ticket Tax in Switzerland: Estimated Effects on Demand

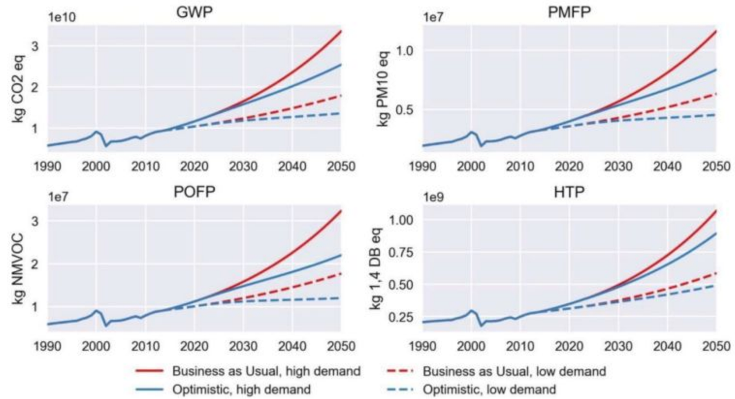

Figure 11: Predictions of the environmental impact potential of entire commercial Swiss air transport sector until 2050 (Cox et al., 2018)

Under this optimistic scenario, the global warming potential (GWP) of Swiss aviation would grow by 46% until 2050 (Figure 11). In a business-as-usual scenario with high demand growth, the GWP could even increase by 243% until 2050. No scenario that resulted in zero growth or a decrease in greenhouse gas emissions was found. The authors, however, excluded future changes to fuel production (biofuels, synthetic fuels), future engine technologies, such as aircraft powered by liquefied hydrogen, as well as policy measures (demand reduction by taxation) from the scope of their analysis.

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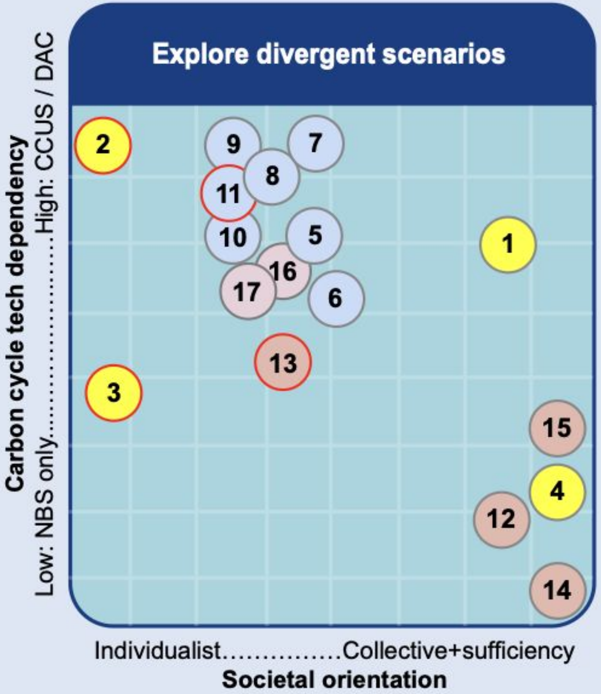
Reaching Swiss net zero in an uncertain world



Proposed scenarios
1 - Full spectrum
2 - Tech-driven
3 - Fragmented futures
4 - Commons focus

Main Swiss scenarios
5 - EP2050+ Climate Strategy
6 - EP2050+ Zero A
7 - EP2050+ B&C
8 - DeCIRRA Octopus
9 - DeCIRRA Butterfly
10 - DeCIRRA Snail
11 - DeCIRRA Clam

IPCC
12 - IPCC SSP1
13 - IPCC SSP2
14 - IPCC SR15 P1
15 - IPCC SR15 P2

IEA
16 - Net Zero Roadmap 2021
17 - Net Zero Roadmap 2023

○ **Net zero 2050 missed**

Net Zero Scenario	1. Full spectrum	2. Tech-driven	3. Fragmented futures	4. Commons focus
Net Zero	✓ Yes (2050)	✗ No (~70%)	✗ No (~50%)	✓ Yes (2045)
Carbon management	Multiple: CCUS, NBS, limited DAC	Heavy CCUS, weak NBS	Uneven CCUS, minor NBS, no DAC	Biodiversity-focus NBS, biochar, biomaterials
Tech	Industrial CCUS, EU CO_2 pipelines + storage	Breakthrough DAC and CCUS scale	Uneven deployment	Low-tech innovations
Policy	Fossil fuel exit, tech investment, EU agreements	Tech subsidies, EU agreements	Regional policies, few federal mandates	Sufficiency in housing, mobility, consumption
CO_2 price	● CHF 300–500/t	○ CHF 100/t	○ CHF 100/t	● CHF 300–500/t
Society and culture	Broad public support and knowledge	Passive citizens, no culture change	Distrust, polarization, culture divides	Active society, deep culture shift
Sufficiency	⚠ Partial	✗ No	✗ No	✓ Yes, all sectors
Trade / EU	●	◔	◔	○
CO_2 Pipelines	●	●	◔	○
EU CO2 storage	●	●	◔	○
International offsets	◔	●	●	○
Risk level	⚠ EU storage capacity and access	⚠⚠⚠ Technology breakthrough, offsets, EU storage	⚠⚠ Unstable society, offsets	Low–medium: inertia, incumbents, speed of culture change

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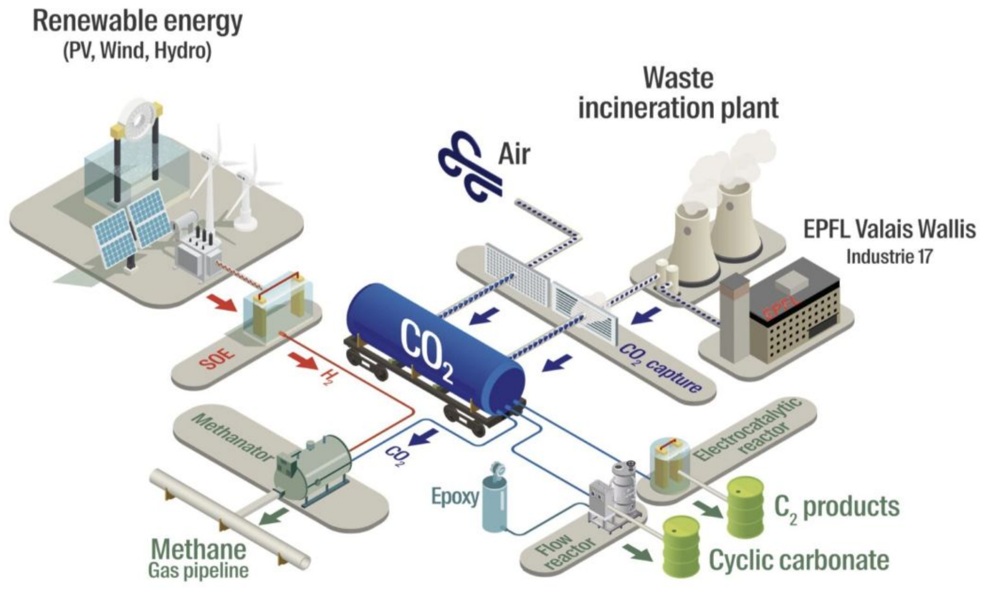

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Large-scale Demonstrator TRL 4/5 ⟶ TRL 7	Advancing Critical Technologies TRL 2/3 ⟶ TRL 4/5	CCUS Enablers
WP1: Postcombustion Capture (1 ton/day) Accelerated manufacturing for rapid scale-up Capture at Valais district heating site (Enevi) Target capture penalty: 20-30 \$/ton$_{CO_2}$ Kumar Varoon Agrawal, Vivek Subramanian, Jürg Schiffmann, Wendy Queen Roll-to-roll production of graphene membrane, High-efficiency capture process by energy harvesting using microturbines Production of porous sorbents for hybrid membrane/sorbent process	**WP4: Direct Air Capture (DAC)** Accelerated material discovery for low-cost DAC Wendy Queen, Nicola Marzari, Philippe Schwaller, Kumar Varoon Agrawal High-working capacity porous adsorbents with long lifespan combined with highly-selective membranes for dilute feed	**WP6: Process Modeling and Integration** Robust, energy-efficient and integrated process François Marechal, Marina Micari Process modeling, technoeconomics and life-cycle assessment
WP2: CO_2 to renewable CH_4 in gas grid (0.35 ton/day) Large-scale valorization of CO_2 Jan van Herle CO_2 to renewable CH_4 with high-efficiency (>70%) by integration of SOE with methanator	**WP5: CO_2 Refinery** CO_2 to value-added chemicals Xile Hu, Jan van Herle Stable CO_2 electrolyzer to ethylene, scale-up to 1 kW	**WP7: Economics, Financing, Governance, and Policy** Accelerating Swiss net zero Sascha Nick Financing model, Governance framework, public policy instruments
WP3: CO_2 Storage (5 ton CO_2) Acceleration of geological CO_2 storage Lyesse Laloui, Eleni Stavropoulou Short-term and long-term CO_2 storage demonstrator at EPFL		**WP8: Dissemination, Student Involvement, and Outreach** Training next generation of scientists Marina Micari, Kumar Varoon Agrawal, François Marechal EPFL student MAKE (carbon) team, Master's project

s4s-ccus.epfl.ch

Configurable Swiss CCUS net zero model 2025-2100

Draft 2026-02-20

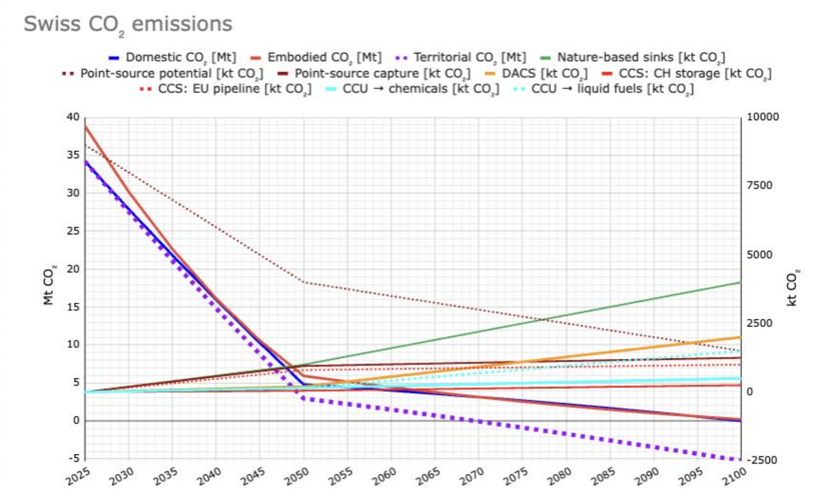
sascha.nick@epfl.ch

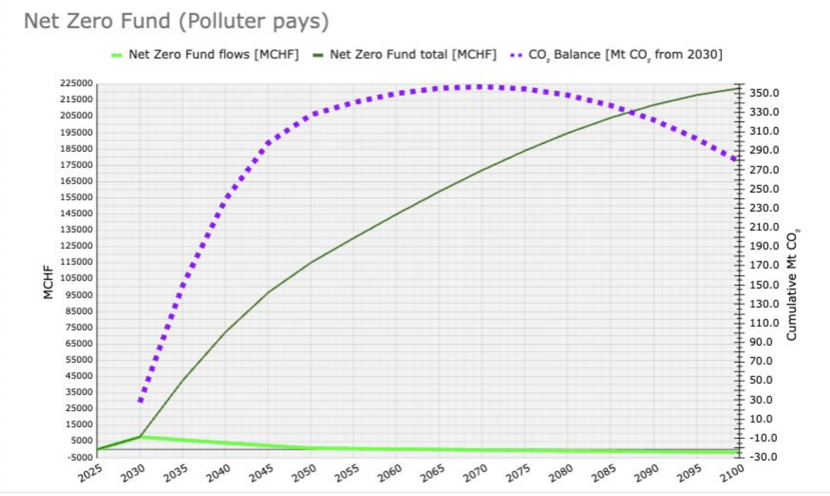
1. Full spectrum — Reset

Input parameter	2025	2050	2100	on/off
Energy				
Population [M]	9	11	13	
Final energy/cap [GJ]	150	**110**	**100**	
% domestic final energy	60%	**65%**	**75%**	
% fossil domestic energy	65%	**10%**	**0%**	
% fossil embodied in imports	80%	**20%**	**1%**	
Intensity domestic fossil [kg CC	65	60	56	
Intensity imported fossil [kg CO	90	70	60	
CCUS energy intensities				
Point-source CCS [GJ/t CO_2]	3.8	**3.0**	**2.5**	
DAC [GJ/t CO_2]	7.2	**6.0**	**4.5**	
CO_2 storage [GJ/t CO_2]	0.45	0.42	0.40	
CCU chemicals [GJ/t CO_2]	36.0	**28.0**	**22.0**	
CCU fuels [GJ/t CO_2]	32.0	**29.0**	**25.0**	
Assumed ηPtL→kerosene	37.2%	41.7%	49.5%	
CO_2 flows				
Point-source potential [kt CO_2]	9000	4000	1500	1
Nature-based sinks [kt CO_2]	0	**1000**	**4000**	1
CCS: CH storage [kt CO_2]	0	**50**	**250**	1
CCS: EU pipeline [kt CO_2]	0	**800**	**1000**	1
CCU → chemicals [kt CO_2]	0	**150**	**500**	1
CCU → liquid fuels [kt CO_2]	0	**150**	**1500**	1
CCU → kerosene [kt]	0	47	475	
DACS [kt CO_2]	0	**200**	**2000**	1
Costs				
Electricity cost CHF/MWh	60	**175**	**175**	
Nature-based [CHF/t CO_2]	250	**250**	**250**	
Point-source capture [CHF/t CC	200	**120**	**100**	
Storage cost [CHF/t CO_2]	200	**100**	**70**	
CCU → chemicals [CHF/t CO_2]	3000	**1500**	**1200**	
CCU → fuels [CHF/t CO_2]	3000	**2000**	**1500**	
DACS cost [CHF/t CO_2]	1200	**600**	**250**	
Carbon price [CHF/t CO_2]	30	**350**	**1000**	1
Subsidy for CCS/DACS [CHF/t	250	**120**	**100**	1
Subsidy for U [CHF/t CO_2]	100	**80**	**0**	1
Net Zero Fund (Polluter pays) [C	280	**280**	**280**	1
Net Zero Fund interest rate	2.5%	2.0%	1.0%	

Risk dimension 2050				
Net zero 2050 reached	≤0	≤5 Mt	>5 Mt	2.9
Overshoot / CO_2 to 2050	<90%	<115%	>=115%	107%
Tech deployment	<0.25 Mt	≤1.5 Mt	>1.5 Mt	1.35
CCUS energy burden	<3%	<10%	>=10%	2%
EU storage dependency	<20%	<60%	>=60%	94%
CCU energy cost	<70%	<100%	>=100%	70%
Net Zero Fund	>110%	>=90%	<90%	149%
PAYG coverage (in/out)	>150%	>95%	<=95%	165%

	2025	2030	2035	2040	2045	2050	2055	2060	2065	2070	2075	2080	2085	2090	2095	2100
Energy																
Total final energy [PJ]	**1350**	1322	1294	1266	1238	**1210**	1219	1228	1237	1246	1255	1264	1273	1282	1291	**1300**
Total domestic final energy [PJ]	**810**	805	801	796	791	**787**	805	824	843	862	881	900	918	937	956	**975**
+CCUS energy in CH [PJ]	**0.0**	3.0	5.8	8.4	10.8	**13.0**	18.7	24.2	29.6	34.7	39.6	44.3	48.8	53.1	57.2	**61.1**
Domestic+CCUS final energy [PJ]	**810**	808	806	804	802	**799**	824	848	873	897	920	944	967	990	1013	**1036**
% fossil domestic energy	**65%**	54%	43%	32%	21%	**10%**	9%	8%	7%	6%	5%	4%	3%	2%	1%	**0%**
% fossil embodied in imports	**80%**	68%	56%	44%	32%	**20%**	18%	16%	14%	12%	11%	9%	7%	5%	3%	**1%**
Intensity domestic fossil [kg CO_2/GJ]	**65**	64	63	62	61	**60**	60	59	59	58	58	58	57	57	56	**56**
Intensity imported fossil [kg CO_2/GJ]	**90**	86	82	78	74	**70**	69	68	67	66	65	64	63	62	61	**60**
Point-source CCS [GJ/t CO_2]	**3.8**	3.6	3.5	3.3	3.2	**3.0**	3.0	2.9	2.9	2.8	2.8	2.7	2.7	2.6	2.6	**2.5**
DAC [GJ/t CO_2]	**7.2**	7.0	6.7	6.5	6.2	**6.0**	5.9	5.7	5.6	5.4	5.3	5.1	5.0	4.8	4.7	**4.5**
CO_2 storage [GJ/t CO_2]	**0.45**	0.44	0.44	0.43	0.43	**0.42**	0.42	0.42	0.41	0.41	0.41	0.41	0.41	0.40	0.40	**0.40**
CCU chemicals [GJ/t CO_2]	**36.0**	34.4	32.8	31.2	29.6	**28.0**	27.4	26.8	26.2	25.6	25.0	24.4	23.8	23.2	22.6	**22.0**
CCU fuels [GJ/t CO_2]	**32.0**	31.4	30.8	30.2	29.6	**29.0**	28.6	28.2	27.8	27.4	27.0	26.6	26.2	25.8	25.4	**25.0**
CO_2 flows																
Domestic CO_2 [Mt]	**34.2**	27.9	21.8	16.0	10.3	**4.8**	4.4	4.0	3.6	3.1	2.7	2.2	1.7	1.1	0.6	**0.0**
Embodied CO_2 [Mt]	**38.9**	30.2	22.7	16.1	10.6	**5.9**	5.2	4.4	3.8	3.1	2.6	2.0	1.5	1.0	0.6	**0.2**
Point-source potential [kt CO_2]	**9000**	8000	7000	6000	5000	**4000**	3750	3500	3250	3000	2750	2500	2250	2000	1750	**1500**
Point-source capture [kt CO_2]	**0**	190	380	570	760	**950**	980	1010	1040	1070	1100	1130	1160	1190	1220	**1250**
Nature-based sinks [kt CO_2]	**0**	200	400	600	800	**1000**	1300	1600	1900	2200	2500	2800	3100	3400	3700	**4000**
CCS: CH storage [kt CO_2]	**0**	10	20	30	40	**50**	70	90	110	130	150	170	190	210	230	**250**
CCS: EU pipeline [kt CO_2]	**0**	160	320	480	640	**800**	820	840	860	880	900	920	940	960	980	**1000**
CCU → chemicals [kt CO_2]	**0**	30	60	90	120	**150**	185	220	255	290	325	360	395	430	465	**500**
CCU → liquid fuels [kt CO_2]	**0**	30	60	90	120	**150**	285	420	555	690	825	960	1095	1230	1365	**1500**
DACS [kt CO_2]	**0**	40	80	120	160	**200**	380	560	740	920	1100	1280	1460	1640	1820	**2000**
Territorial CO_2 [Mt]	**34.2**	27.6	21.1	14.8	8.8	**2.9**	2.2	1.5	0.7	-0.1	-0.9	-1.7	-2.6	-3.4	-4.3	**-5.3**
Costs																
Electricity cost CHF/MWh	**60**	83	106	129	152	**175**	175	175	175	175	175	175	175	175	175	**175**
Nature-based [CHF/t CO_2]	**250**	250	250	250	250	**250**	250	250	250	250	250	250	250	250	250	**250**
Point-source capture [CHF/t CO_2]	**200**	184	168	152	136	**120**	118	116	114	112	110	108	106	104	102	**100**
Storage cost [CHF/t CO_2]	**200**	180	160	140	120	**100**	97	94	91	88	85	82	79	76	73	**70**
CCU → chemicals [CHF/t CO_2]	**3000**	2700	2400	2100	1800	**1500**	1470	1440	1410	1380	1350	1320	1290	1260	1230	**1200**
CCU → fuels [CHF/t CO_2]	**3000**	2800	2600	2400	2200	**2000**	1950	1900	1850	1800	1750	1700	1650	1600	1550	**1500**
DACS cost [CHF/t CO_2]	**1200**	1080	960	840	720	**600**	565	530	495	460	425	390	355	320	285	**250**
Carbon price [CHF/t CO_2]	**30**	94	158	222	286	**350**	415	480	545	610	675	740	805	870	935	**1000**
Subsidy for CCS/DACS [CHF/t CC	**250**	224	198	172	146	**120**	118	116	114	112	110	108	106	104	102	**100**
Subsidy for U [CHF/t CO_2]	**100**	96	92	88	84	**80**	72	64	56	48	40	32	24	16	8	**0**
Net Zero Fund (Polluter pays) [CHI	**0**	**280**	280	280	280	**280**	280	280	280	280	280	280	280	280	280	**280**
Cash flows - use of funds																
Nature-based sinks [MCHF]	**0**	50	100	150	200	**250**	325	400	475	550	625	700	775	850	925	**1000**
Point-source capture [MCHF]	**0**	35	64	87	103	**114**	116	117	119	120	121	122	123	124	124	**125**
DACS [MCHF]	**0**	43	77	101	115	**120**	215	297	366	423	468	499	518	525	519	**500**
CH storage [MCHF]	**0**	2	3	4	5	**5**	7	8	10	11	13	14	15	16	17	**18**
EU pipeline [MCHF]	**0**	29	51	67	77	**80**	80	79	78	77	77	75	74	73	72	**70**
CCU → chemicals [MCHF]	**0**	81	144	189	216	**225**	272	317	360	400	439	475	510	542	572	**600**
CCU → liquid fuels [MCHF]	**0**	84	156	216	264	**300**	556	798	1027	1242	1444	1632	1807	1968	2116	**2250**
Total cash out [MCHF]	**0**	324	595	814	980	**1094**	1569	2016	2434	2824	3185	3518	3822	4097	4344	**4563**
Cash flows - sources of funds																
CO_2 tax PAYG [MCHF]	**1027**	2626	3452	3543	2938	**1679**	1834	1929	1958	1916	1802	1609	1336	979	534	**0**
Taxpayer subsidy S [MCHF]	**0**	38	67	88	99	**102**	105	108	111	113	116	118	120	122	123	**125**
Taxpayer subsidy U [MCHF]	**0**	6	11	16	20	**24**	34	41	45	47	46	42	36	27	15	**0**
Total cash in [MCHF]	**1027**	2670	3530	3646	3058	**1805**	1973	2078	2113	2077	1963	1769	1492	1127	672	**125**





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Article

Towards True Climate Neutrality for Global Aviation: A Negative Emissions Fund for Airlines

Sascha Nick * and Philippe Thalmann

Laboratory of Environmental and Urban Economics (LEURE), Ecole Polytechnique Fédérale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland

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Abstract: What would it take for aviation to become climate-neutral by 2050? We develop and model a trajectory for aviation to reduce its CO_2 emissions by 90% by 2050, down to a level where all residual emissions can be removed from the atmosphere without crowding out other sectors that also need negative emissions. To make emitters pay for the carbon removal, we propose and model a negative emissions fund for airlines (NEFA). We show that it can pay for the removal of all CO_2 emitted by aviation from 2030 onwards, for a contribution to the fund of USD 200–250 per ton CO_2 emitted. In our baseline simulation, USD 3.3 trillion is invested by the fund over 40 years in high-quality carbon removal projects designed for biodiversity and societal co-benefits. While we do propose a number of governance principles and concrete solutions, our main goal is to start a societal dialogue to ensure aviation becomes both responsible and broadly beneficial.

Press Release No: 66

Date: 4 October 2021

Net-Zero Carbon Emissions by 2050

FLY NET ZERO

Translations:

Élimination des émissions nettes de carbone d'ici 2050 (pdf)
Zero emissão líquida de carbono até 2050 (pdf)
Cero emisiones netas de CO2 en 2050 (pdf)
国际航协：2050年实现净零碳排放 (pdf)

Boston - The International Air Transport Association (IATA) 77th Annual General Meeting approved a resolution for the global air transport industry to achieve net-zero carbon emissions by 2050. This commitment will align with the Paris Agreement goal for global warming not to exceed 1.5°C.

"The world's airlines have taken a momentous decision to ensure that flying is sustainable. The post-COVID-19 re-connect will be on a clear path towards net zero. That will ensure the freedom of future generations to sustainably explore, learn, trade, build markets, appreciate cultures and connect with people the world over. With the collective efforts of the entire value chain and supportive government policies, aviation will achieve net zero emissions by 2050," said Willie Walsh, IATA's Director General.

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ICAO / ICAO Newsroom / Countries' support global 'Net-zero 2050' emissions target to achieve sustainable aviation

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Countries' support global 'Net-zero 2050' emissions target to achieve sustainable aviation

Ministers and other high-level officials concluded high-level environment talks at ICAO Headquarters in Montréal on 22 July 2022, supporting a collective global goal of net-zero carbon emissions by 2050.

Montréal, 25 July 2022 – Ministers and officials engaged in high level environment talks brokered by ICAO have urged countries to cooperate further through the UN agency toward a collective global long term aspirational goal (LTAG) of net-zero carbon emissions by 2050, in support of the Paris Agreement's temperature target.

The conclusions came Friday evening after four days of deliberations among Ministers and other high-level officials representing 119 countries at ICAO Headquarters in Montréal, with over 700 participants from States and International Organizations attending the hybrid Meeting.

Recognizing that each State's special circumstances and respective capabilities will inform the ability of each to contribute within its own national timeframe, while showcasing a collaborative spirit through constructive dialogue and respect for diversity, the new conclusions will aid a just and green transition for the decarbonisation of international aviation.

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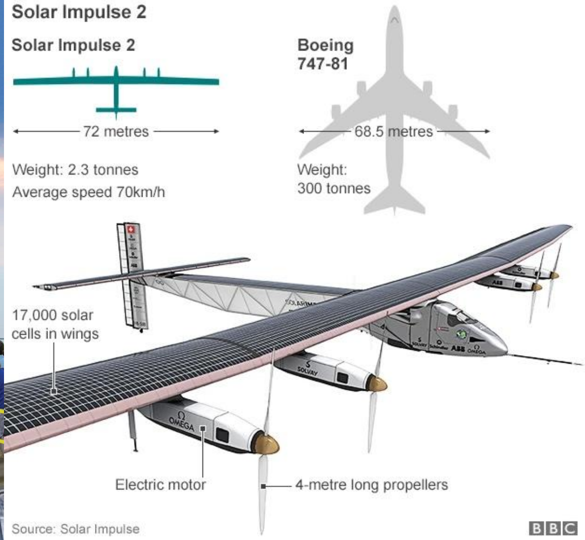
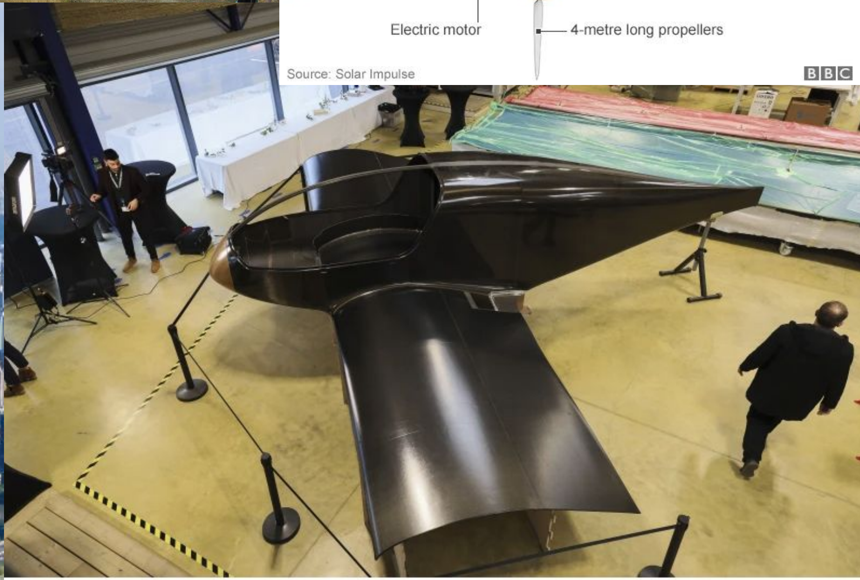
Climate-neutral Aviation?





The Climate Impulse, a plane powered by liquid hydrogen, is displayed in a hangar in Les Sables d'Olonne, France on Thursday, Feb. 13, 2025. (AP Photo/Yohan Bonnet)

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“Climate-neutral” e-fuels?

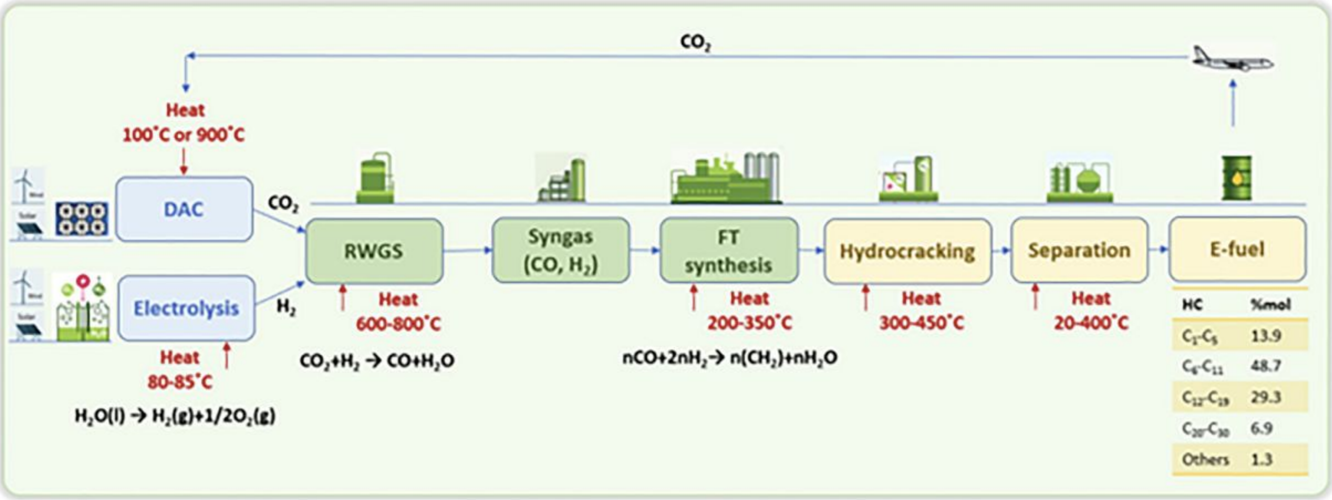


Figure 1. The e-fuel production involves producing hydrogen through water electrolysis and sourcing CO_2 via direct air capture

DAC technology extracts CO_2 directly from the atmosphere to create aviation e-fuels, which form a closed-loop system. This approach aligns with the circular economy concept, reduces aviation’s carbon footprint, and contributes to the fight against climate change.

DAC, direct air capture; RWGS, the reverse water gas shift; FT, Fischer-Tropsch; HC, hydrocarbon.

Top left:
Synhelion DAWN, Jülich DE, ca. 100 kL/yr

Above:
Ineratec Era One, Frankfurt DE, “up to 2’500 t/yr”

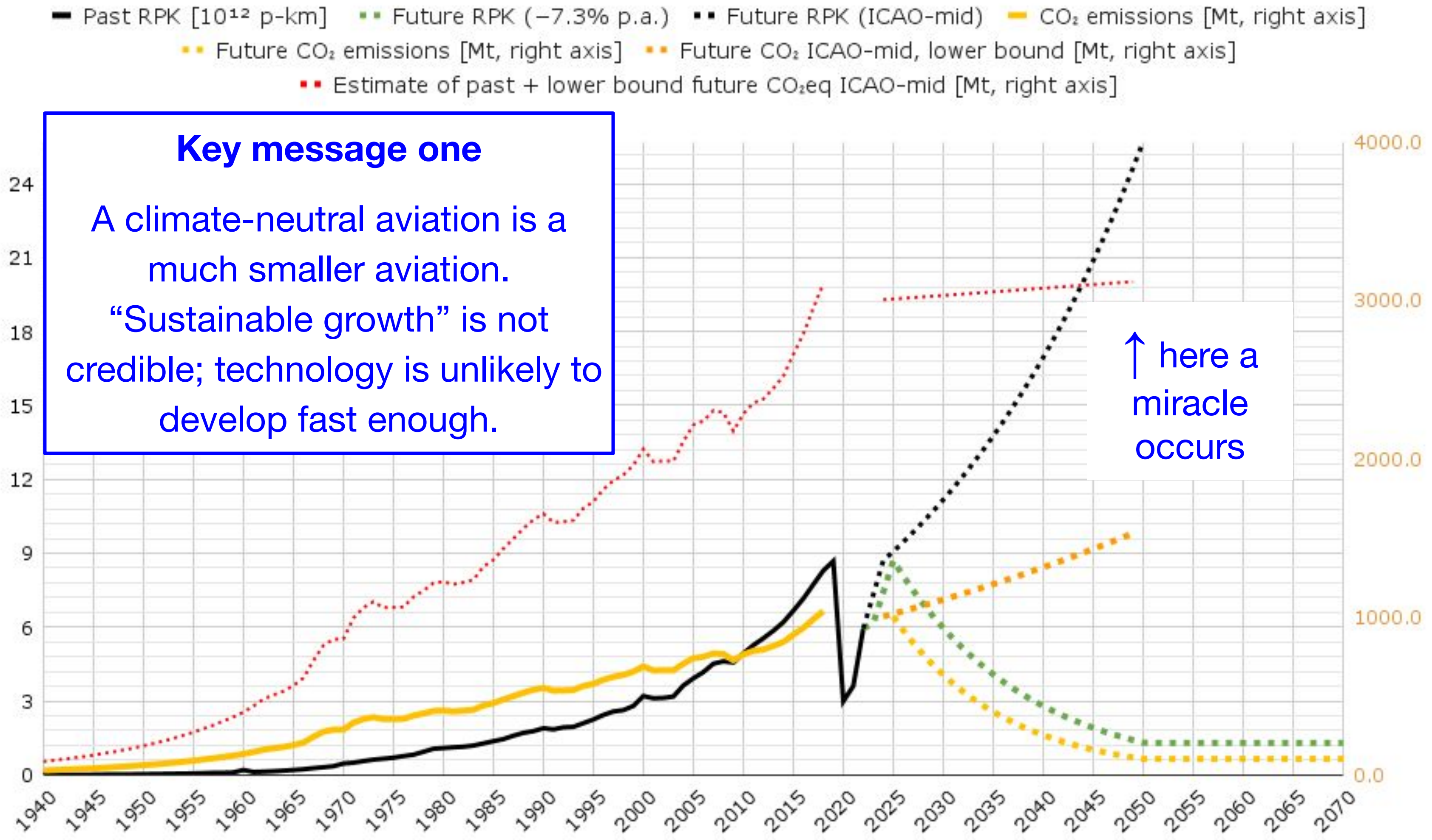
Left:
Ozkan et al., 2024
doi.org/10.1016/j.isci.2024.109154

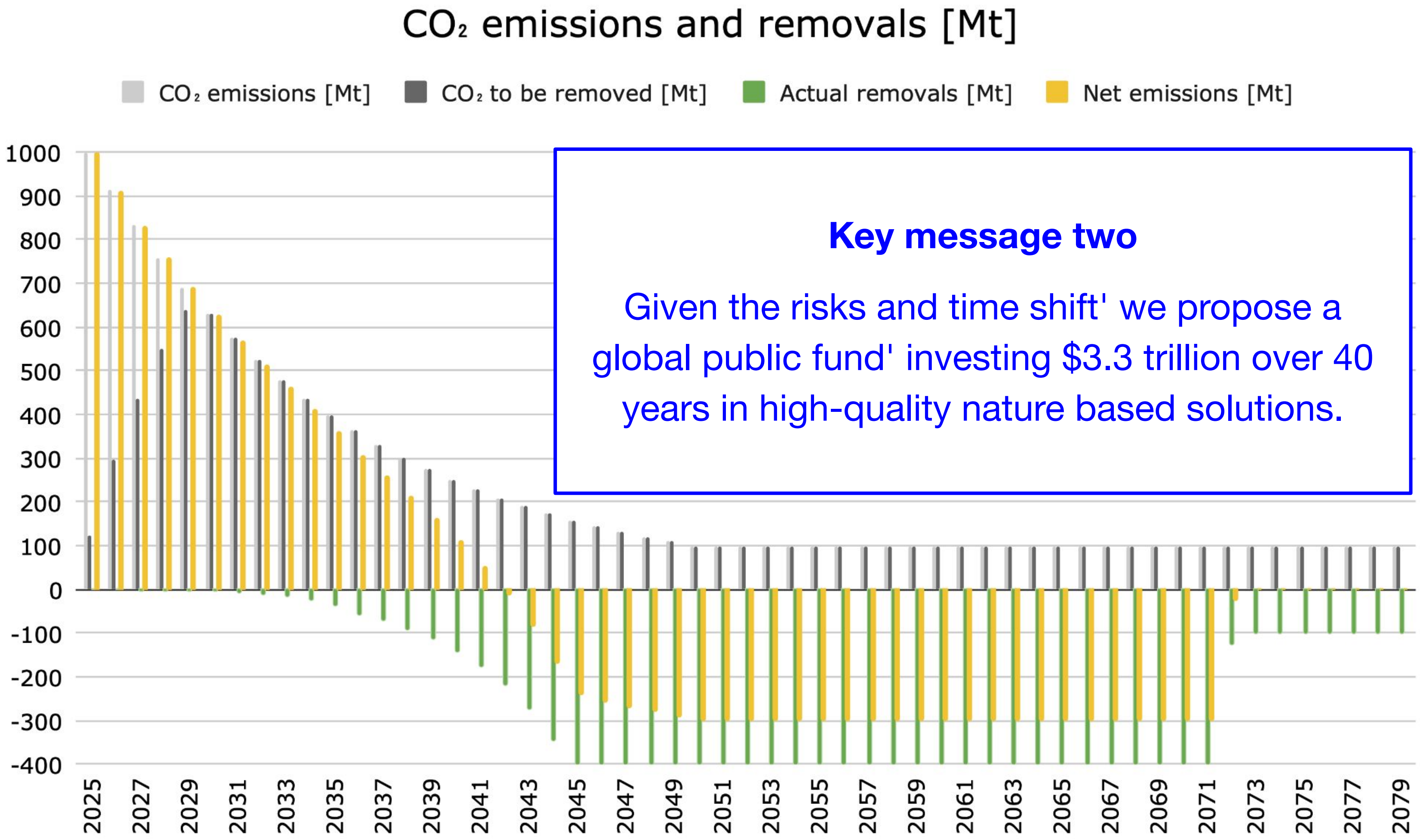
Aircraft	**Fuel volume** [liters]	**Fuel mass** [kg]
Antonov AN-225	375'000	300'000
Airbus A380	323'546	253'983
Boeing 747-8	238'610	190'888
Boeing 777-200LR	181'283	145'538
Airbus A350-1000	158'791	124'651
Boeing 787-10 ‘Dreamliner’	126'372	101'456
BAC Concorde	119'600	95'680
Airbus A320	27'200	21'760
Boeing 737 Max	25'940	20'752
Airbus A300 ‘Beluga’	23'860	19'088
Dassault Falcon 6X	19'156	15'325

Sascha NICK

Key message one

A climate-neutral aviation is a much smaller aviation. “Sustainable growth” is not credible; technology is unlikely to develop fast enough.





Key message two

Given the risks and time shift' we propose a global public fund' investing $3.3 trillion over 40 years in high-quality nature based solutions.

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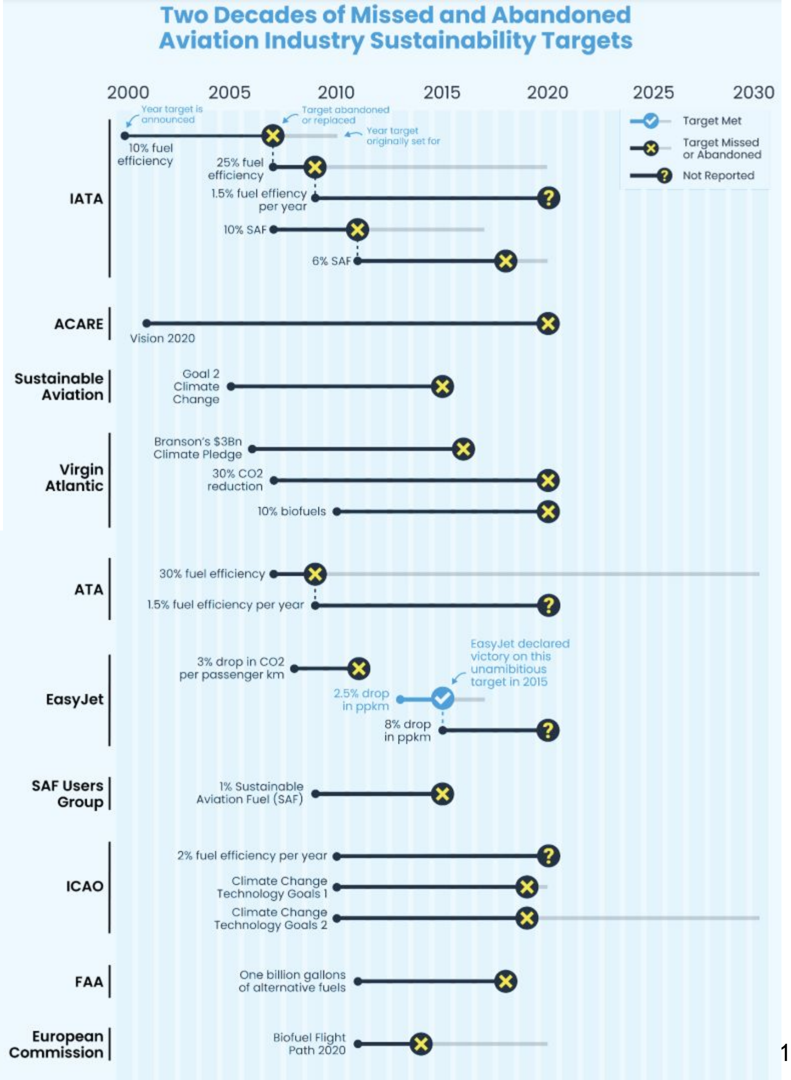
Key message three

Based on its track record' aviation cannot be trusted to decarbonize voluntarily and must be regulated.



Structure of the proposed Negative Emissions Fund for Airlines (NEFA)

Governance: ICAO or NEFA

Reporting + monitoring
- Report flights, aircraft, fuel, CO_2, contrails
- Monitor payment to NEFA
- UNFCCC: submit NDC as virtual country
- Restrict alternative fuels to low-impact

Annual capacity auction

2025

−7.3% p.a. until 2050

stable from 2050

...

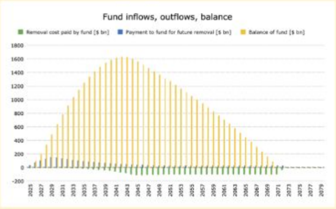
Airline 2

Airline 1

Commitments:
- Reduce RPK >2.5% p.a.
- Buy capacity at auction
- Pay CO_2 price to NEFA
- Report flights and CO_2

Benefits:
- Access to NEFA airports
- Climate neutrality
- Societal legitimacy

NEFA
- Collect and invest airline payments



- Build and monitor a portfolio of carbon removal projects
- Int'l fund governance

Payment to projects
Payment from airlines
Payment from auction

...

NEFA project 2

NEFA project 1 for carbon removal
- Only in NEFA countries w. credible 1.5°C NDCs
- Designed for co-benefits
  - Biodiversity, restoring ecosystems
  - Societal: investments, jobs, capacity building

Climate Club: EU + other c
- Require airline participation
- Participate in the Climate C
- Submit credible 1.5°C NDC
- Ensure NEFA projects are g
- Engage citizens to ensure b

Key message four

A well-designed governance ensures compliance' mobilizes significant resources for biodiversity and societal wellbeing' and gives a future to aviation.

Why join the Climate Club?

NEFA project funding + benefits
Benefits of 1.5°C climate
No public funding needed
Societal benefits + acceptance
Aviation beneficial for all

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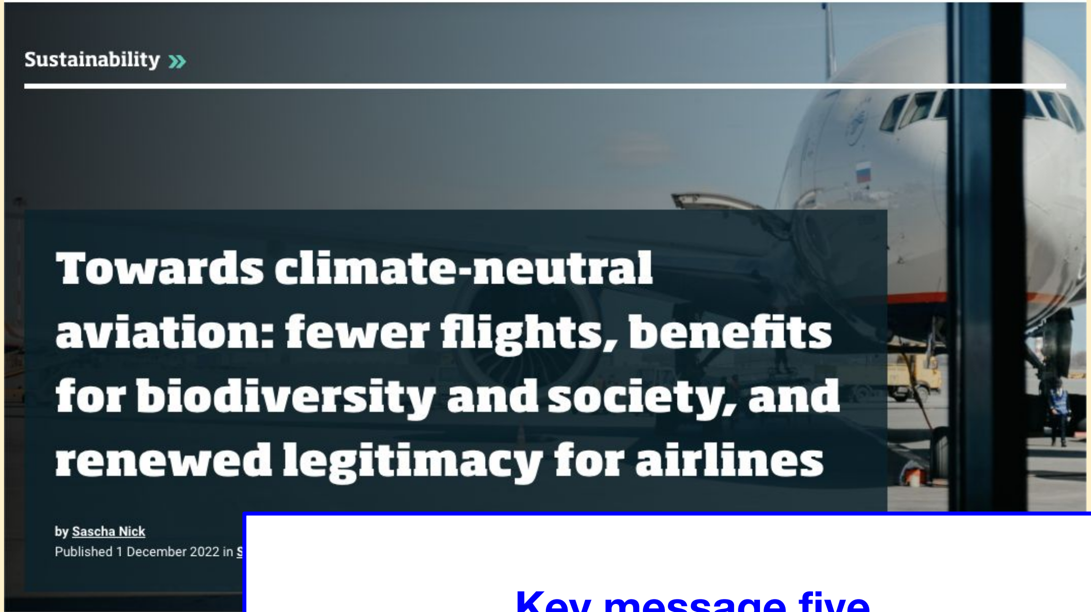

Key message five

From the perspective of main stakeholders' big but not insurmountable changes are needed' many with positive side-effects.

Large companies

Most obviously, the total cost of flying would go down by two thirds, and videoconferencing would be used even more than today. Over time, globalized supply chains might be at a disadvantage and could be reconfigured to become more regional or local, with only a few components truly globally sourced – for example, specialized microprocessors. As this would happen over two decades, there is time to adjust, and in the process make supply chains more resilient, circular, and sustainable. Now is the time to rethink business models, eliminate planned obsolescence, and start curbing extraction, material, and energy use. However, given the time needed to reconfigure supply chains, planning should start immediately, starting with new products and services.

Academia

In terms of operations, reducing academic staff travel would just be the beginning. This would mean more local or regional conferences, with fewer participants, remotely connected to related events elsewhere when needed, but little flying. Executive or other learning programs could be planned in ways that would minimize travel – adjusting schedules, combining events, on-site teams remotely connected to other teams, and longer and more local gatherings incorporating multiple activities. More fundamentally, helping society to rapidly adjust to a post-fossil fuel, limited extraction world could become an essential focus of research and teaching, especially in business education.

Agricultural communities

Any transition towards sustainability will only work if it benefits communities and wins their support. Climate change, biodiversity loss, soil depletion, and very different precipitation patterns are already affecting almost every agricultural community in the world, and they must adapt to these threats in order to survive. A limitation in air transport capacity will also impact global food exports, reducing the markets available to many agricultural communities, which would be extremely challenging, especially for disadvantaged populations. On the other hand, continuing today's agricultural trajectory will lead to a collapse in ecosystem services, including food production, which would disproportionately affect such communities. There is no single solution, but our proposal mobilizes around $100 billion each year for decades to invest in nature-based solutions, with most carbon removal projects managed by and for the benefit of local communities in participating countries. Restoring and protecting wetlands, mangroves, corals, forests, and other ecosystems would all qualify, as would soil health projects, which would also improve food production resilience.

Airlines

Surprisingly, aviation is perhaps the easiest sector to adapt, even though it is the one that will be transformed most by the transition to climate-neutral aviation. Predictable flight reductions would facilitate investments and asset management, hiring and training, flight route planning, ultimately ensuring service quality. Reporting guidelines developed for the current Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) could be adapted. The 25-year transition period is longer than the timeframe airlines had for previous adaptations, even before COVID-19. The 1980s, the reference period for the number of flights, was a profitable and predictable period for airlines. Most importantly, in a world of constrained resources, becoming climate neutral would renew airlines' social license and ensure the future of the aviation sector.

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[24] ÉCONOMIE

Bourse

Accueil | Économie | Transport aérien: Voler sur des avions «verts» en 2050 coûtera plus cher

Abo Transport aérien

Voler sur des avions «verts» en 2050 coûtera plus cher

Des chercheurs de l'EPFL ont mis au point un modèle pour financer la décarbonation de l'aviation civile d'ici à trente ans. Il suppose une réduction drastique des vols et une hausse des tarifs.

Ivan Radja
Publié: 14.11.2022, 07h00

L'aviation civile a émis 1 milliard de tonnes de CO_2 en 2019. Le chemin vers le zéro net carbone en 2050 est encore long.

AFP

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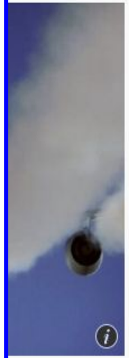
Key message six

Holistically' the proposed approach reverses globalization and deregulation' and shifts resources from the top 1% to the rest of humanity' reducing biodiversity loss' the climate crisis' inequality' and improving resilience.

It also gives a future to aviation and shows the way forward for other "hard to decarbonize" sectors.

la décarbonation de l'aviation civile d'ici à trente ans. Il suppose une réduction drastique des vols et une hausse des tarifs.

Ivan Radja



Deux chercheurs suisses ont calculé à quelles conditions le secteur du transport aérien peut respecter ses promesses de décarbonation. Pour l'instant, le compte n'y est pas.