Dick Benschop

19 September 2019

Airneth Annual Lecture

Towards a sustainable future

Schiphol Group

Vision 2050 (draft)

Connecting the Netherlands

We **safely and seamlessly** operate
the world's **most sustainable** hub and regional airports

Quality of
Network

Quality of
Life

Quality of
Service

Enablers

- Safety first
- Robust organization

Schiphol Group

Integral Safety Management System

Schiphol Group

LVNL

KLM

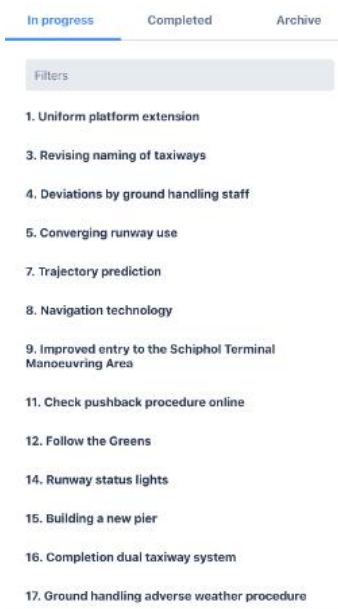
easyJet

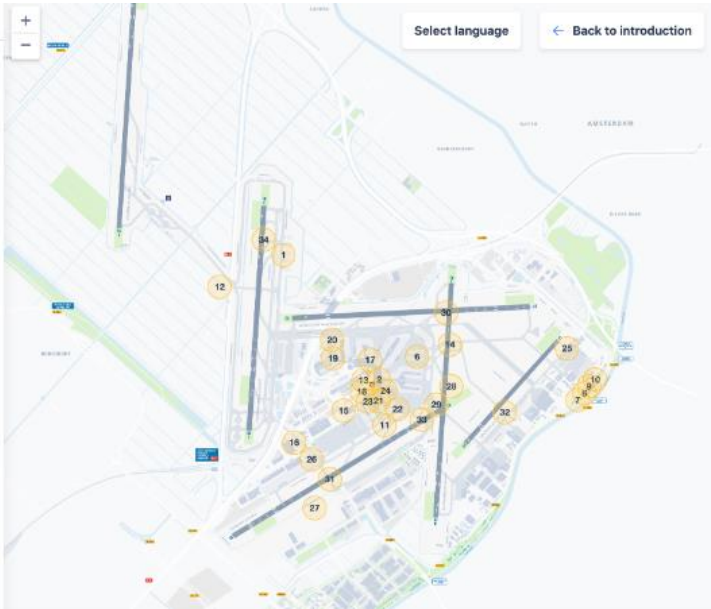
GTS aircraft refuelling

swissport

Safety in the Dutch Aviation Sector

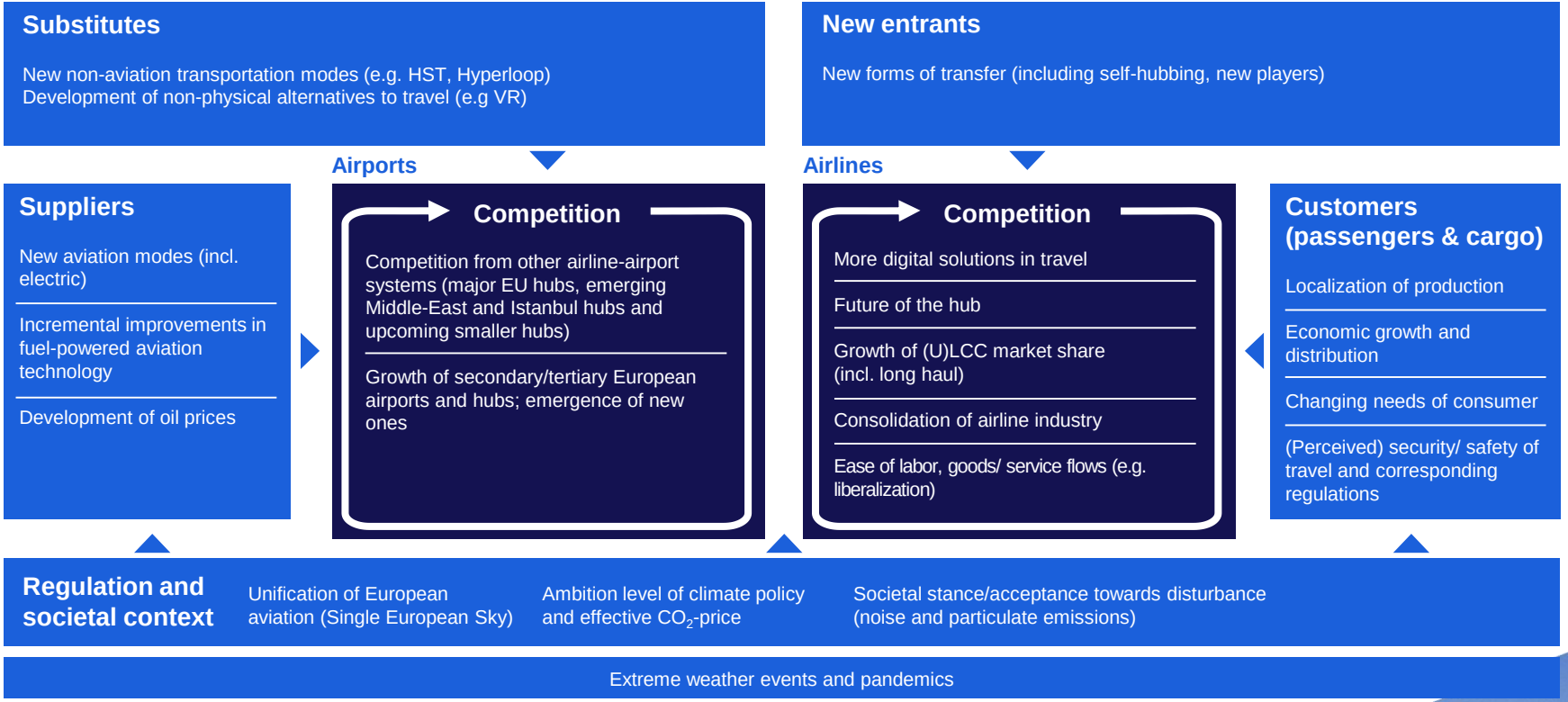
- Roadmap
- OVV recommendations
- NLR measures



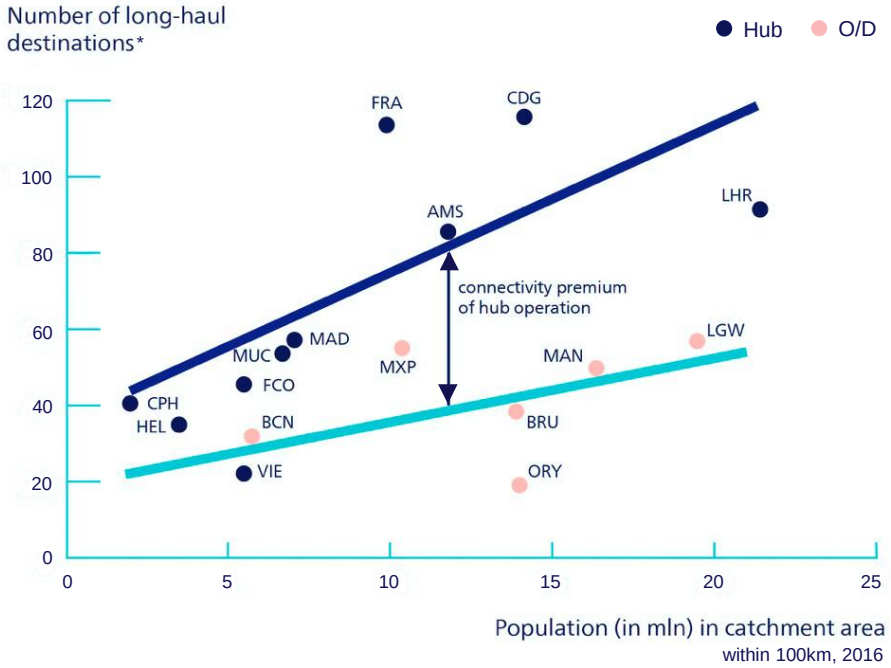


Quality of Network

Trends and developments that shape our future



Hub generates a connectivity premium



Bron: IATA PAX-IS; SEO; OAG, CBS; MGI CityScope

* Passenger scheduled flights for calendar year 2017. Long haul: above 6 hours

Quality of Network

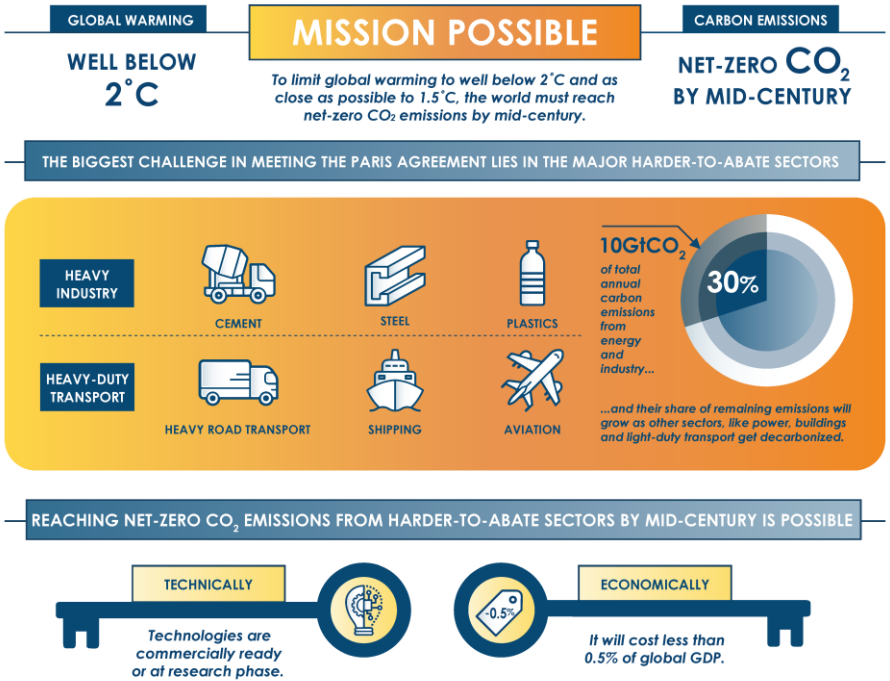
Quality of Life

Quality of Life

- Zero waste 2030
- Resource efficiency
- Sustainable resources

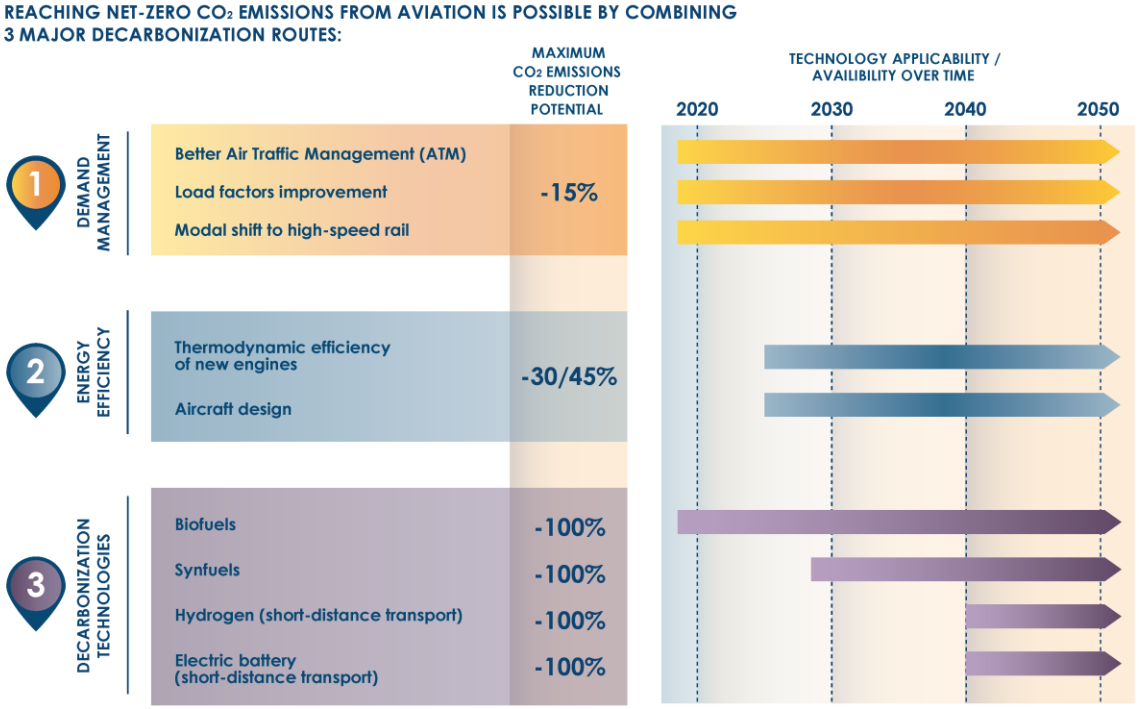
- Climate neutral
- Net-zero emissions by 2030
- Energy efficiency

Energy Transitions Commission: it is technically possible and economically feasible to decarbonize aviation



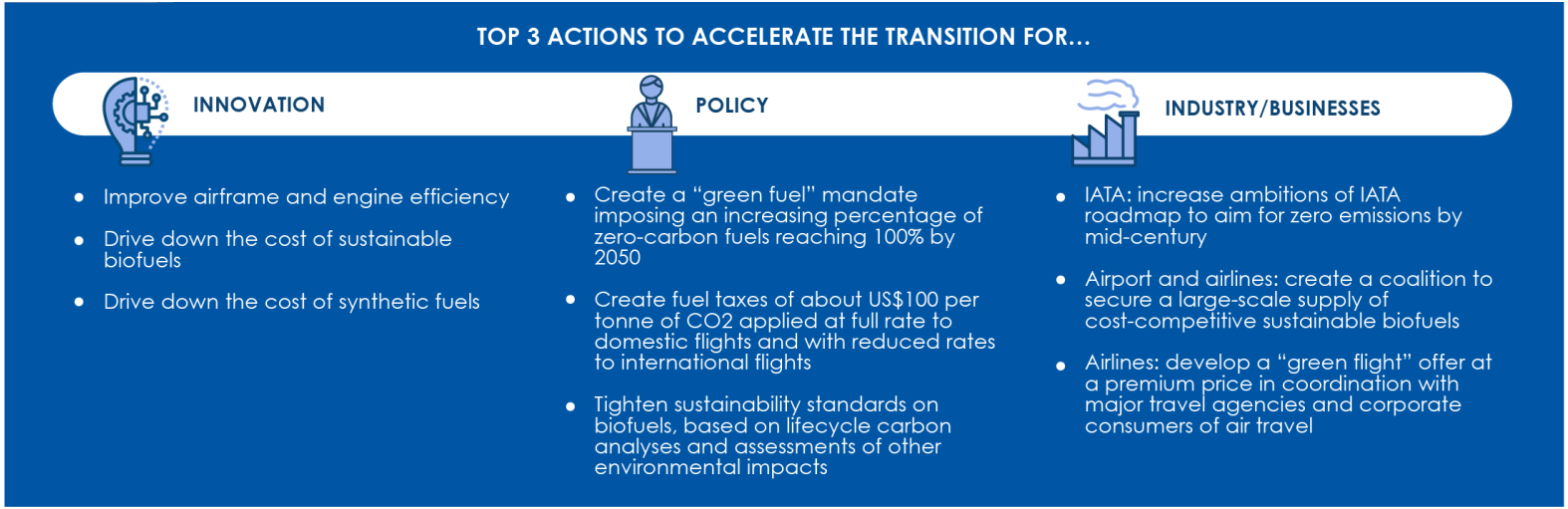
Source: Energy Transitions Commission (2018). Mission Possible

Mission possible in aviation: 3 major decarbonization routes



Source: Energy Transitions Commission (2018). Mission Possible

Mission possible in aviation: top actions needed



Source: Energy Transitions Commission (2018). Mission Possible

What do we do?

Smart and sustainable action plan

Main goal is to **reduce CO_2 emissions from aviation originating in the Netherlands to the 2005 level in 2030** by:

- Optimising flight paths and procedures
- Incentivising use of cleaner aircraft via airport charges
- Greater utilisation of sustainable aviation fuel
- Radical fleet renewal
- Use of international train services and other sustainable modalities for short distances
- Working towards emission-free airports
- A swift and sustainable journey to and from the airport

What do we do?

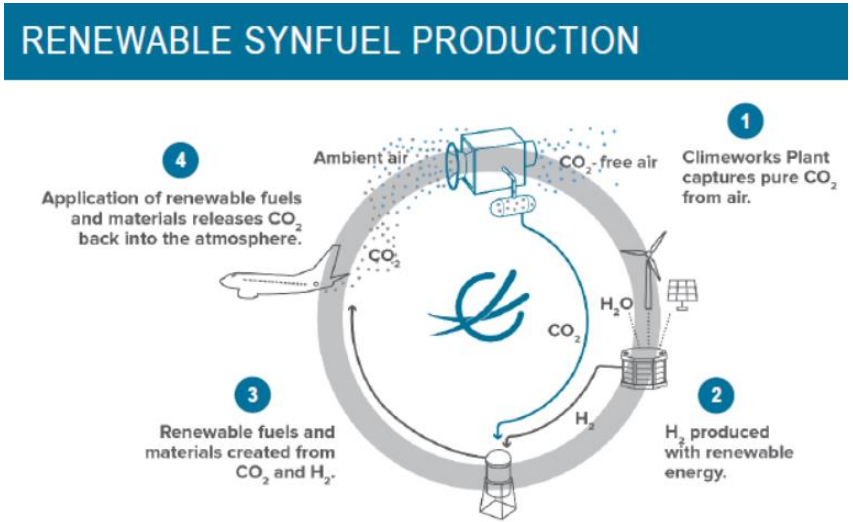
Climate Agreement Sustainable Aviation

- ICAO emission targets for international aviation (2% fuel efficiency / year)
  - Carbon-neutral growth from 2020
  - Reduce CO2 emissions from aviation with 50% to the 2005 level in 2050
- Targets Smart and Sustainable action plan
- Bring ICAO targets in line with Paris Agreement – towards net-zero emissions
- Sustainable aviation fuels, hybrid electric propulsion, fleet renewal, ground operations
- But… no funding

Our investments

Renewable Jet Fuel from DAC Plant

- Study to realize funding for a pilot plant for the production of synthetic kerosene at Rotterdam-The Hague Airport



Source: Climeworks, capturing CO_2 from air

Our investments

Bio fuel from waste streams plant

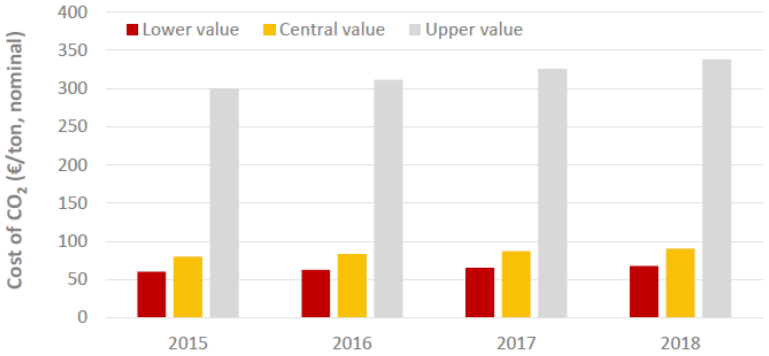
- Schiphol invests € 2 million in design phase; construction and off-take by a.o. KLM, SkyNRG and SHV Energy
- Expected operational year: 2022
- Plant capacity: 75.000 ton bio kerosene per year
- Expected CO2 reduction: 270.000 ton per year

Click to play SkyNRG video

Policy framework

- ICAO – Paris Agreement
  - New target for aviation: net-zero by mid century
- Internalisation of external costs
- EU-ETS
- Carbon price effects sensitivities

Cost of CO_2-emissions in a 2°C scenario



Source: Analysis SEO based on CE Delft (2017)

Illustration for various KLM-routes from Schiphol, 2018

Route	Distance (km)	Fuel (l per return pax)	CO_2-emissions (kg per return pax)	Ticket price (€ per return)	CO_2-price (€ per return passenger)			Price increase/ demand decrease
					Lower	Central	Upper	
Amsterdam – New York	6,106	363	908	750	61	82	307	8-41%
Amsterdam – Santiago (longest KLM route)	13,246	707	1,846	900	125	166	624	14-69%

Source: Analysis SEO

Policy framework: internalisation of external costs essential

- Support CORSIA and ETS; strengthen ETS
- **Taxation?**
  - Ticket tax
  - Kerosene tax
- Proceeds should be used for innovation and deployment
- **Fuel mandates?**
  - Sustainable aviation fuel mandate
- Role of passengers and companies
  - Offsetting programs
- **Maintain a level playing field!**

	Demand	SAF-share	Corresponding volume (kton)
A	Norway	0,5% in 2020 (**mandatory**) Up to 30% in 2030	5-6 300
B	Sweden	1% in 2021 Up to 30% in 2030	11 330
C	France	2,5% in 2025 Up to 5% in 2030	200 400
D	Spain	Mandate considered	
E	UK	Mandate considered	
F	Netherlands	Industry comitted to 14% in 2030	575

International advocacy: net-zero aviation by mid century