

'Duurzaamheid vereist technologische doorbraken'

in de luchtvaartsector

'Mobility, Climate & Environment | Aeronautics'

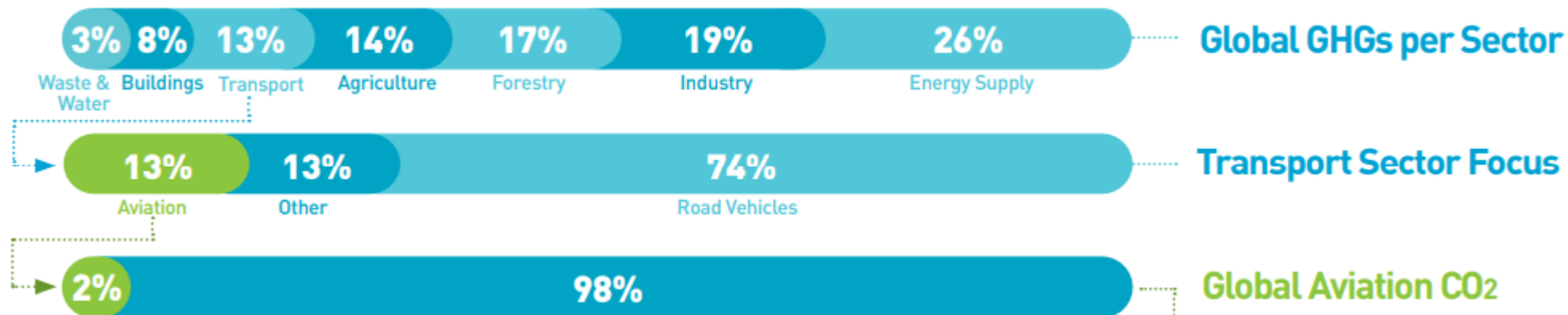
Inhoud

- Impact van de luchtvaartsector (ICAO)
- Doelstellingen & uitdagingen Aerospace Sector
- Roadmap Aeronautics en aansluiting op maatschappelijke uitdagingen

- Toekomst van mobiliteit
- Wat moet er op de disruptive Aeronautics roadmap?

Emission: Green House Gasses in Aerospaces

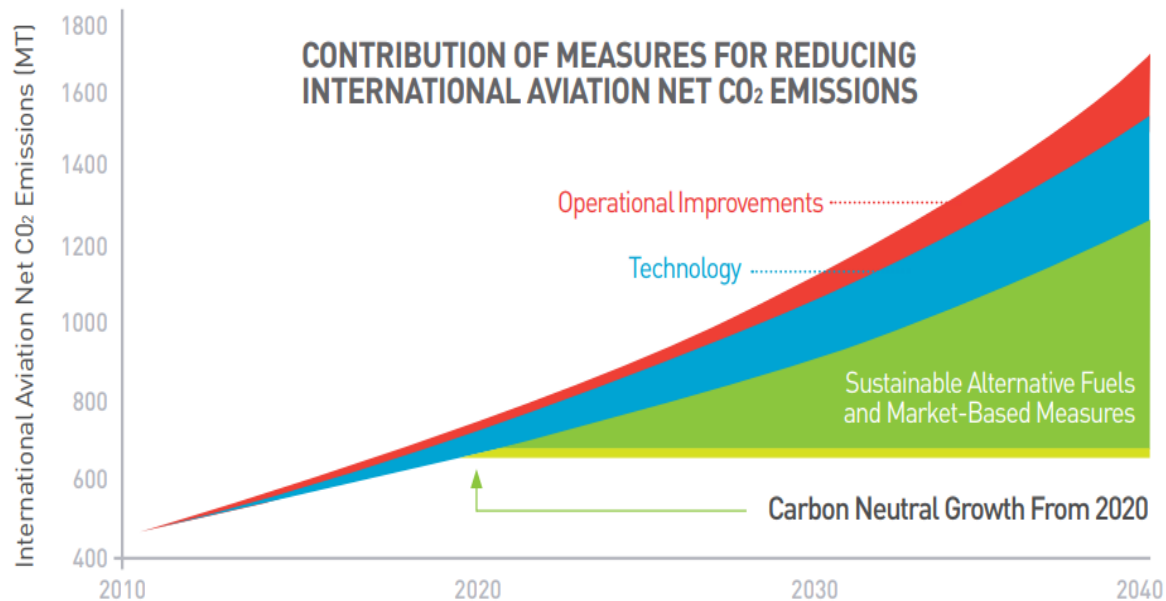
Wat is de bijdrage en wat is er bereikt?



Doelstellingen & Uitdagingen Aerospace Sector

- ICAO Goals

- 2% annual efficiency improvement through 2050
- Carbon neutral growth from 2020 onwards



- Challenges in the Aerospace Sector

Growth

Strong contribution to global mobility with a growth of 4,5% up to 2035
CO₂ emission will be more than doubled to around 6%

Time scale

A more sustainable approach takes time.
Results beyond 2030

New Technologies

Market introduction of faster (supersonic) aircrafts

Road map Aeronautics (Manufacturing & Maintenance)

Themes	Targets (properties and products)	Technology & Innovation themes	NL strenghts 2014-2021
Mobility	Payload effectivity and efficiency	Future concepts	Flapless wings New wiring concepts
Climate/ Environment	Reduction of CO ₂ , NO _x and noise	Engine subsystems and components	Geared turbofan In-flight in-situ acoustic absorption
		Aerostructures	Morphing wing
	Toxity	Aerostructures	Cr-free (research-sunset roadmap)

- What is in place? A few examples
 - Drag reduction, Natural Laminar Flow, Morphing concepts, Function integration, Light weight material
- What needs to be added / update on the roadmap?
 - Hybrid Electric Propulsion, Boundary layer ingesting engine, Personalized mobility

The future of mobility: Clean & Personalized



German start-up
Lilium Flying Taxi heeft
90 M\$ opgehaald voor
de ontwikkeling van
een 5 seater

(dailymail online Sept.
11th)

Als dit de toekomst is wat moet er dan nog additoneel op de (disruptive)
Aeronautics roadmap?

Laatste slide

‘Slagzin...’

‘Maatschappelijke uitdaging | Roadmap’