The Climate Crisis

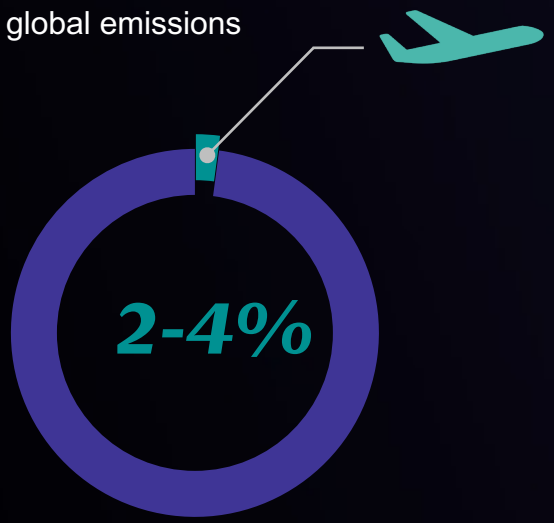
Implications for Airlines

6th New Zealand Aviation Meteorology Symposium

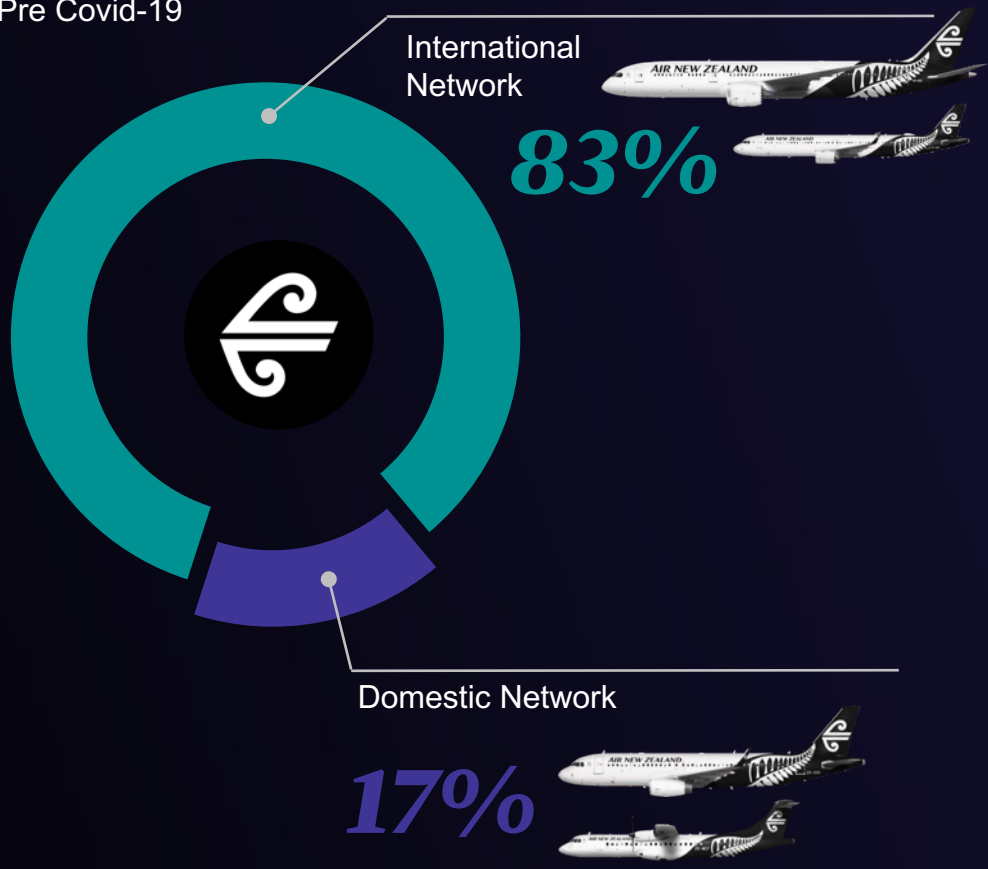
November 2022

Aviation is 2-4% of global emissions today, **but its share is forecast to grow over time, creating risks and opportunities for the airline sector**

Aviation's share of global emissions



Air New Zealand's Emissions
Pre Covid-19



Continued **Fuel Efficiency won't be enough**

Between 2009 and 2019 Air New Zealand achieved:

23% efficiency improvement

Reaching net zero by 2050 will require greater ambition, new technology and novel solutions

Airlines will not escape the impacts of climate change regardless of the path the globe takes to tackle the challenge

*"Why we need to face the **climate change challenge** head on"*

Physical **Risks**

Flooding and sea level rise
Drought and heat stress
Wind

Transition **Risks**

Policy
Liability
Investor Expectations
Changes in demand

Business **Impacts**

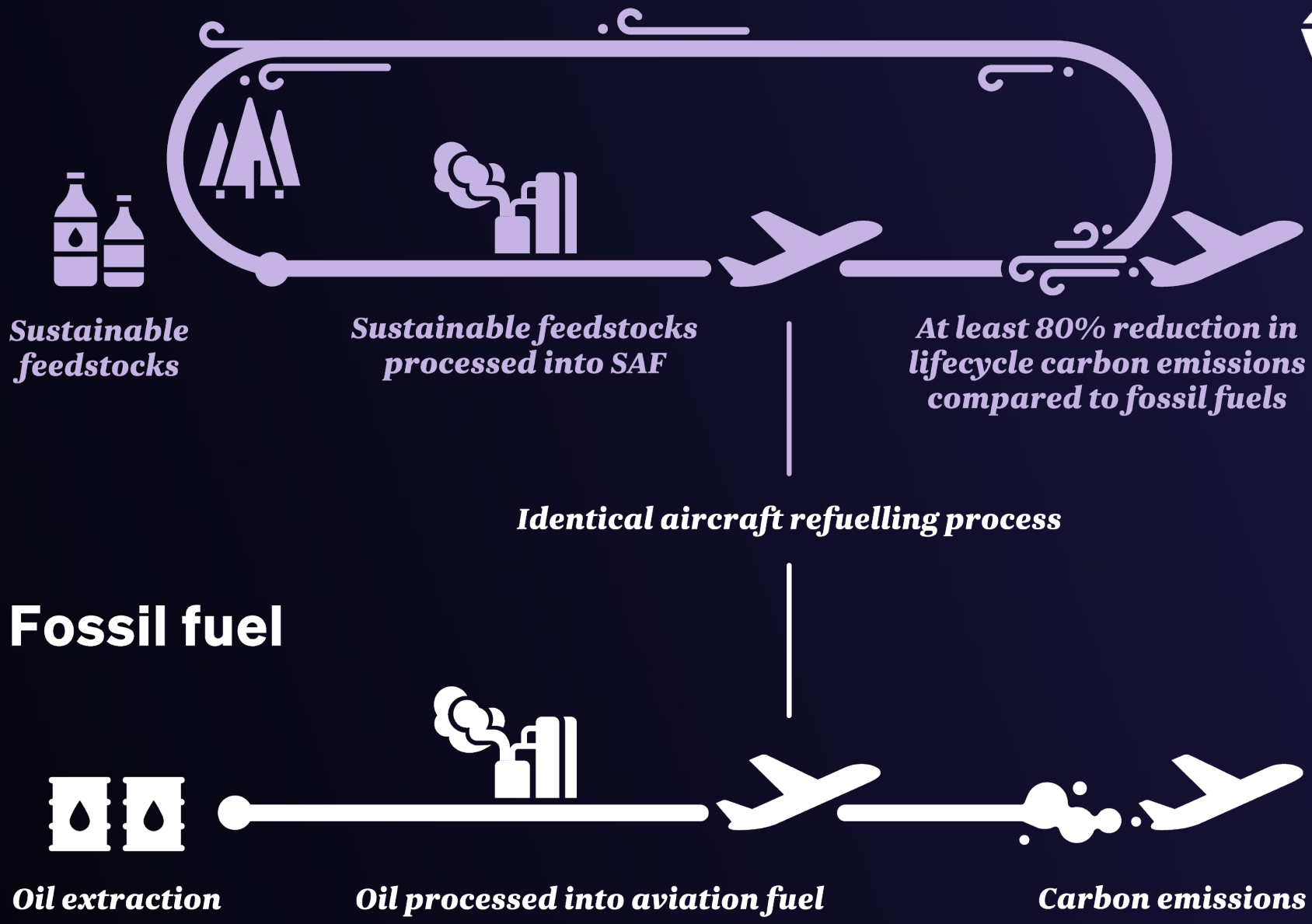
- Increased operation costs
- Distressed assets
- Physical damage to assets
- Carbon pricing and taxes
- Government policy changes
- Changes to consumer sentiment
- Litigation and liability costs
- Investor expectations
- Limited access to capital

Air New Zealand committed to net zero carbon emissions by 2050, and this year set an interim science-based target

Flight NZ0 Decarbonisation roadmap

	Sustainable Aviation Fuel	Zero Emissions Aircraft (ZEA)	Fleet Renewal	Operational Efficiency	Carbon Removals
Description	Non-fossil derived jet fuel, carbon reduction potential ~ 85%, compatible with existing aircraft without modification	Future hydrogen or battery or hybrid aircraft technologies	Rollover current fleet to new jets that achieve greater fuel efficiency	Optimising carbon efficiency from flight and ground operations	Credible carbon removal solutions aligned to international best practice
Decarbonisation Potential by 2050	↓ 50%	↓ 20%	↓ 20%	↓ <2%	Residual

Sustainable Aviation Fuels



Hydrogen
Powered

Battery
Electric

AIR NEW ZEALAND

A STAR ALLIANCE MEMBER™