AVIATION CO_2 REDUCTIONS

STOCKTAKING SEMINAR

TECHNOLOGY · OPERATIONS · SUSTAINABLE AVIATION FUELS

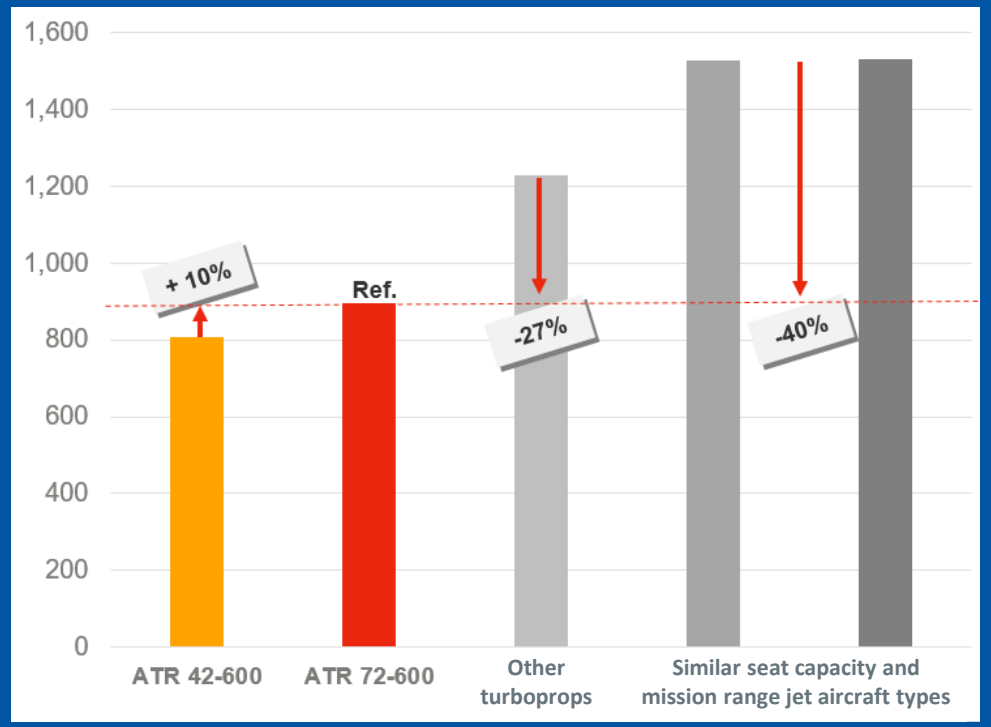
Advanced Aircraft Technologies

Stéphane Viala,

Senior Vice President Engineering – ATR

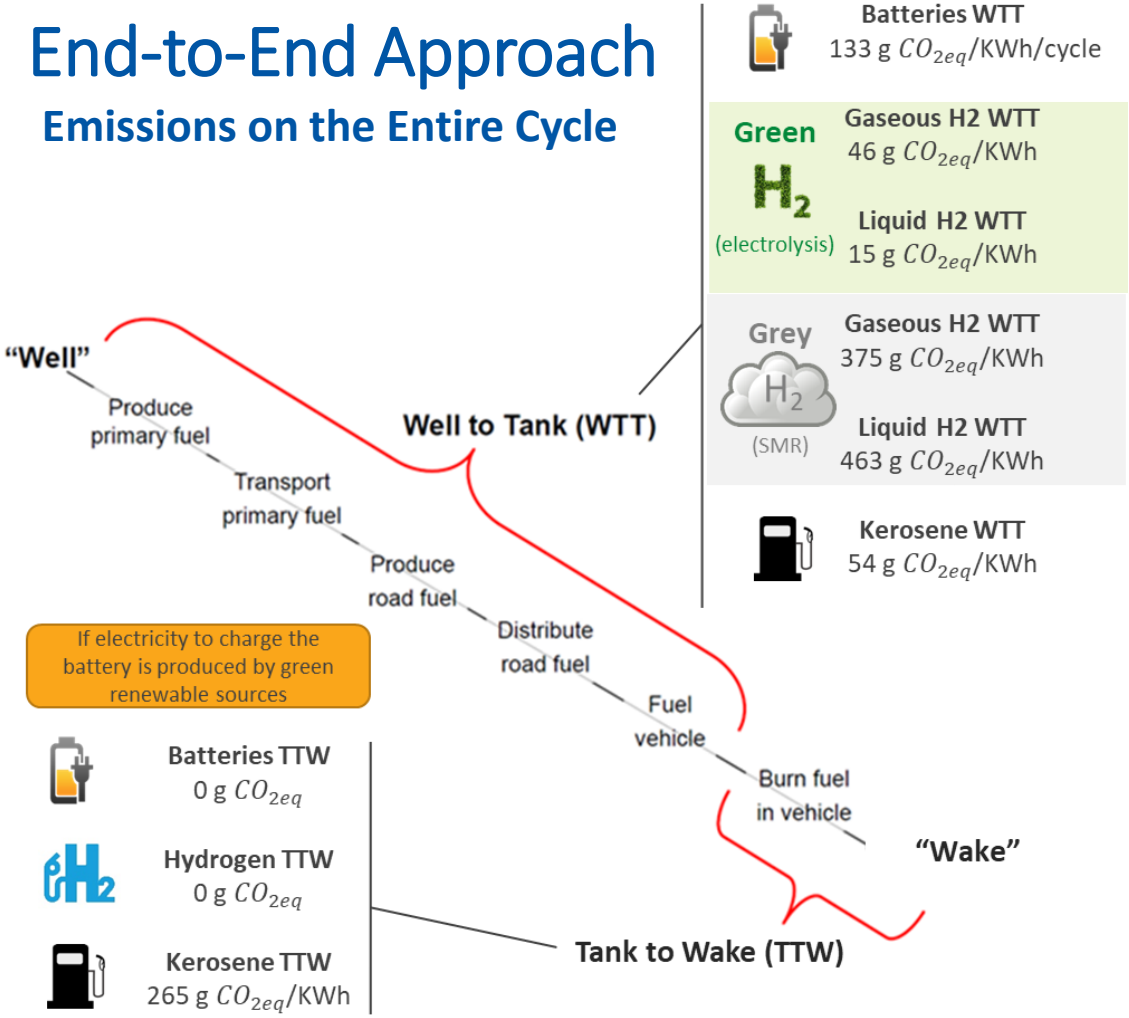
Unbeatable Fuel Efficiency

Fuel burn per trip on average regional sector (300 NM / 556 Km)



End-to-End Approach

Emissions on the Entire Cycle



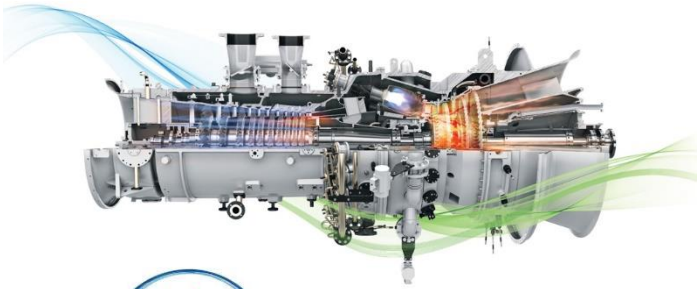
Current cost of different sources of energy

- **Kerosene: 0.07 $/kWh**
- Hydrogen: 0.39 $/kWh
- Electricity: 0.12 $/kWh

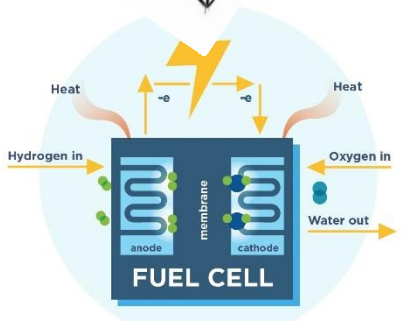
3 Key Enablers to Achieve Ambitious Targets

Over - 30% / PAX on the entire cycle to legitimate initial investments

Reduced NOx & Noise



Hydrogen Combustion



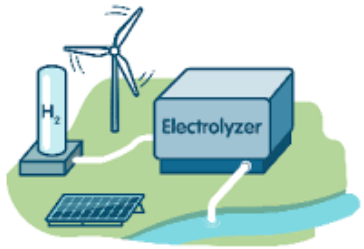
Fuel Cell

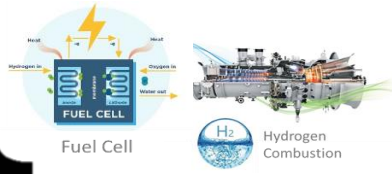
Sustainable Aviation Fuel (SAF)
With Power-to-Liquid Process

Road To Sustainable Aviation

- Simultaneous development of both H2 based aircraft and ground infrastructure necessary for a successful entry into service

Global investments' strategy





~2026 Horizon

Deployment of H_2 infrastructure

Validation of H2 based A/C concept

H_2 as feedstock for SAF

Regional Turboprop H2 based

- To achieve ambitious objectives:
  - Technical, economical and operational validation to be done on H2 based a/c above 50 PAX segment
  - SAF technology available but need to work on production capability and associated cost : will benefit from H2 infrastructure investment

Regional market as a natural contributor toward decarbonised aviation: moderate propulsive power & range

Thank You

ICAO