

Goals and Standards The ICAO Perspective



Environment Section
Air Transport Bureau
International Civil Aviation Organization

2 October 2009

Agenda



ICAO Objective and Goals for Environment

- Quantification and Mitigation Challenges



Technology Standards and Goals



ICAO framework to address the environmental challenge

ICAO

(International Civil Aviation Organization)

UN specialized agency

Established by the “Chicago Convention”
in 1944

Forum for cooperation in all fields of civil
aviation

190 Contracting States and 86
international organizations

Standards, policies & guidance for
environmental protection since 1960's

Focus on aircraft noise, local air quality
and global climate

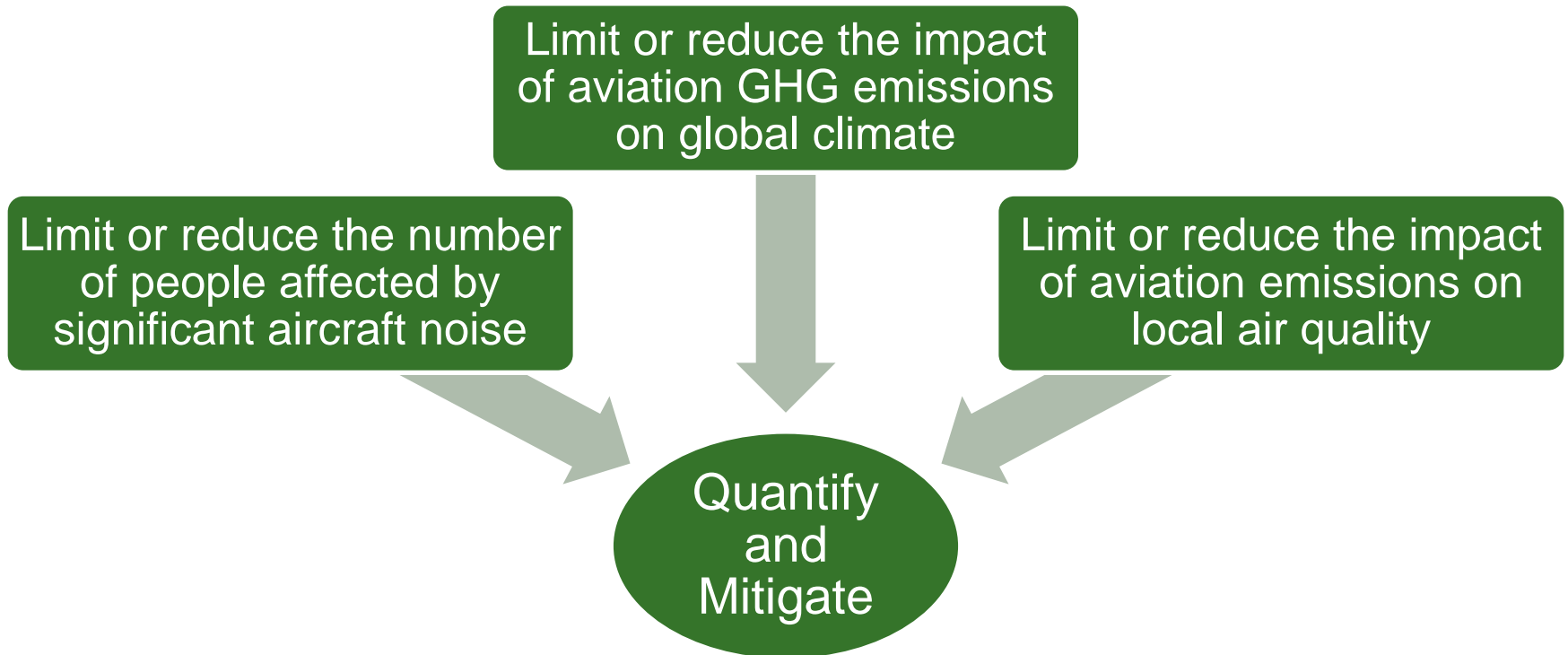


ICAO Strategic Objective for Environment



Minimize the adverse effect of
global civil aviation on the
environment

ICAO Environmental Goals



ICAO Quantification Approach

GHG Emissions Example

Data
Collection

Fuel consumption by State
and air carrier

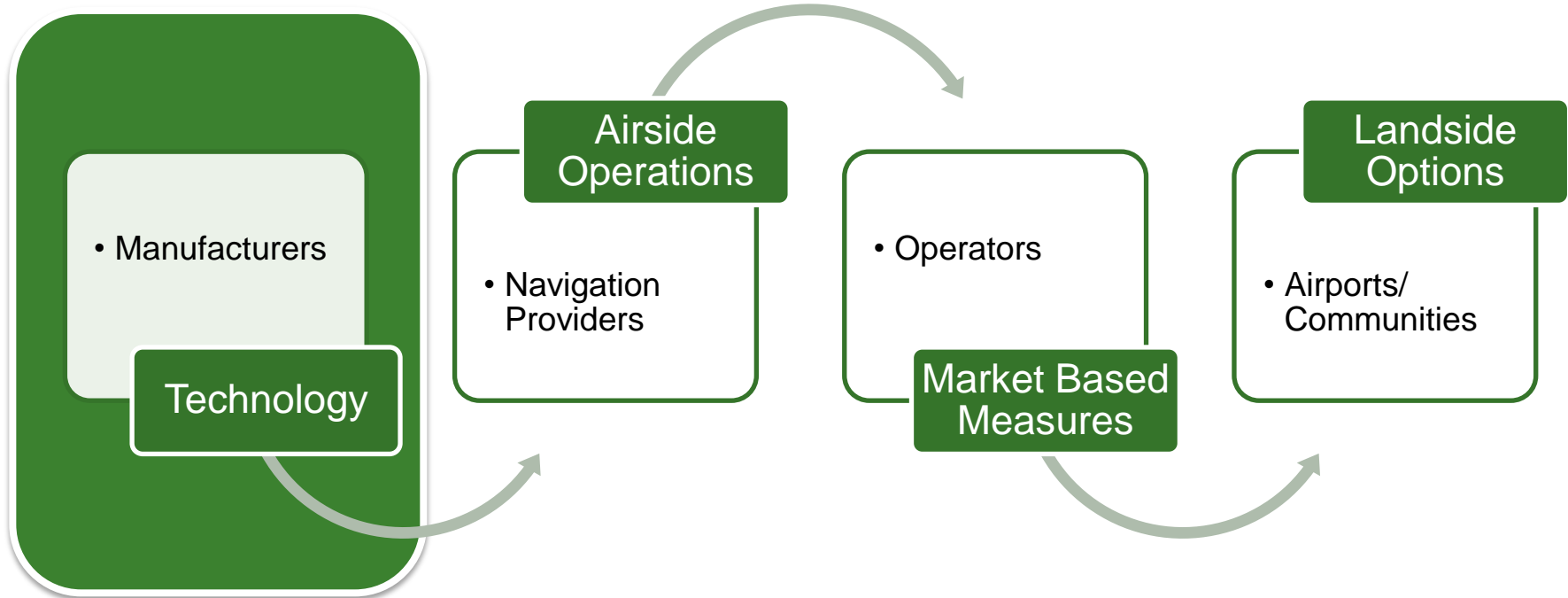
Forecasting

Air traffic and fleet

Modelling

AEDT/SAGE (US FAA), AEM
(EUROCONTROL),
AERO2K (EC), FAST (MMU)

Mitigation Challenge





Establishing Technology Standards and Goals

Technology Standards

Balance environmental benefit with technological feasibility, economic viability, and do not adversely impact other environmental factors

Purpose

Disable a backward slide on environmental improvement

Principles

Certification metric based on standard conditions and not correlated with single events

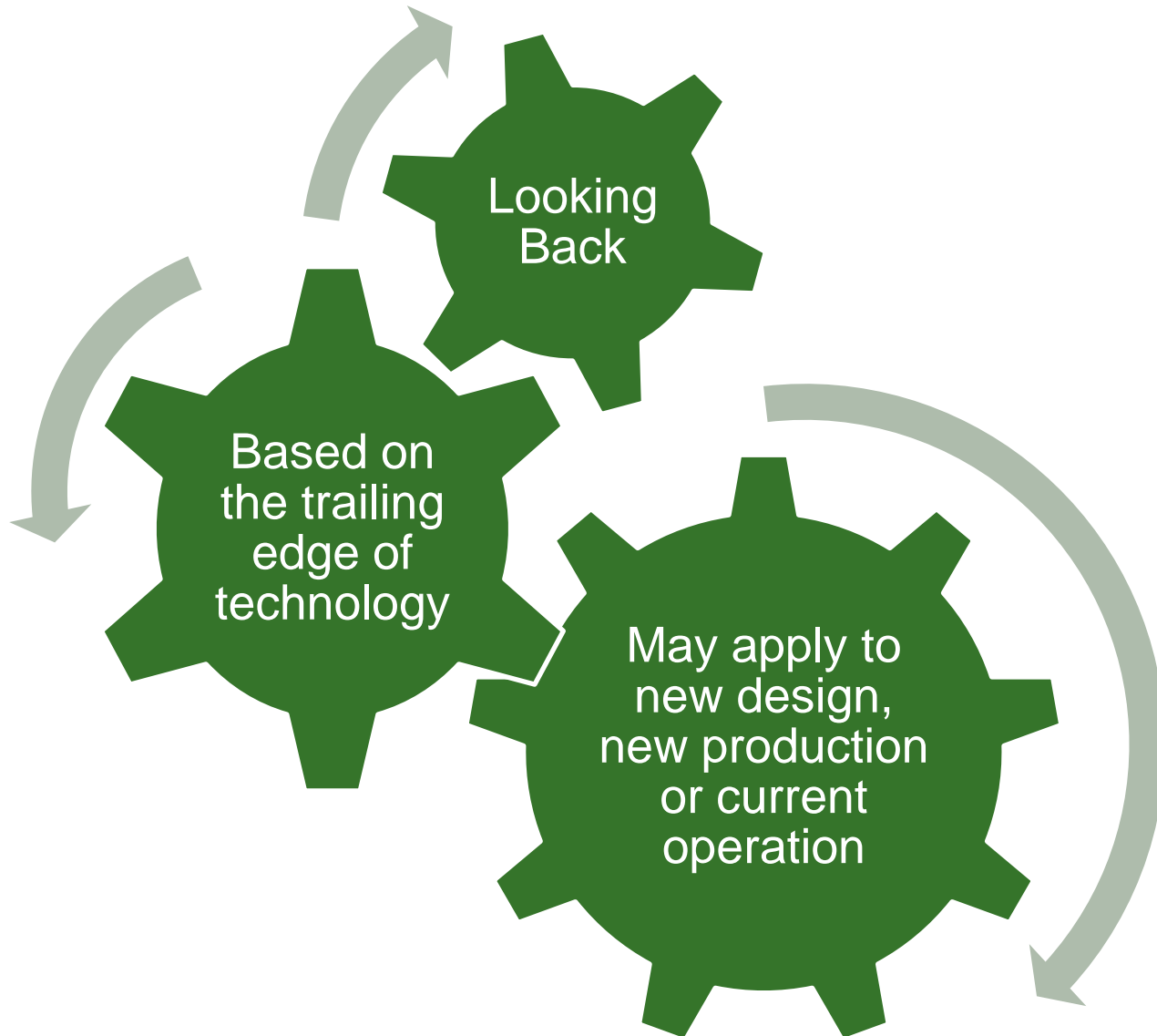
General correlation between certification metric and overall environment

Certification Standards based on already certified technology (TRL>8)

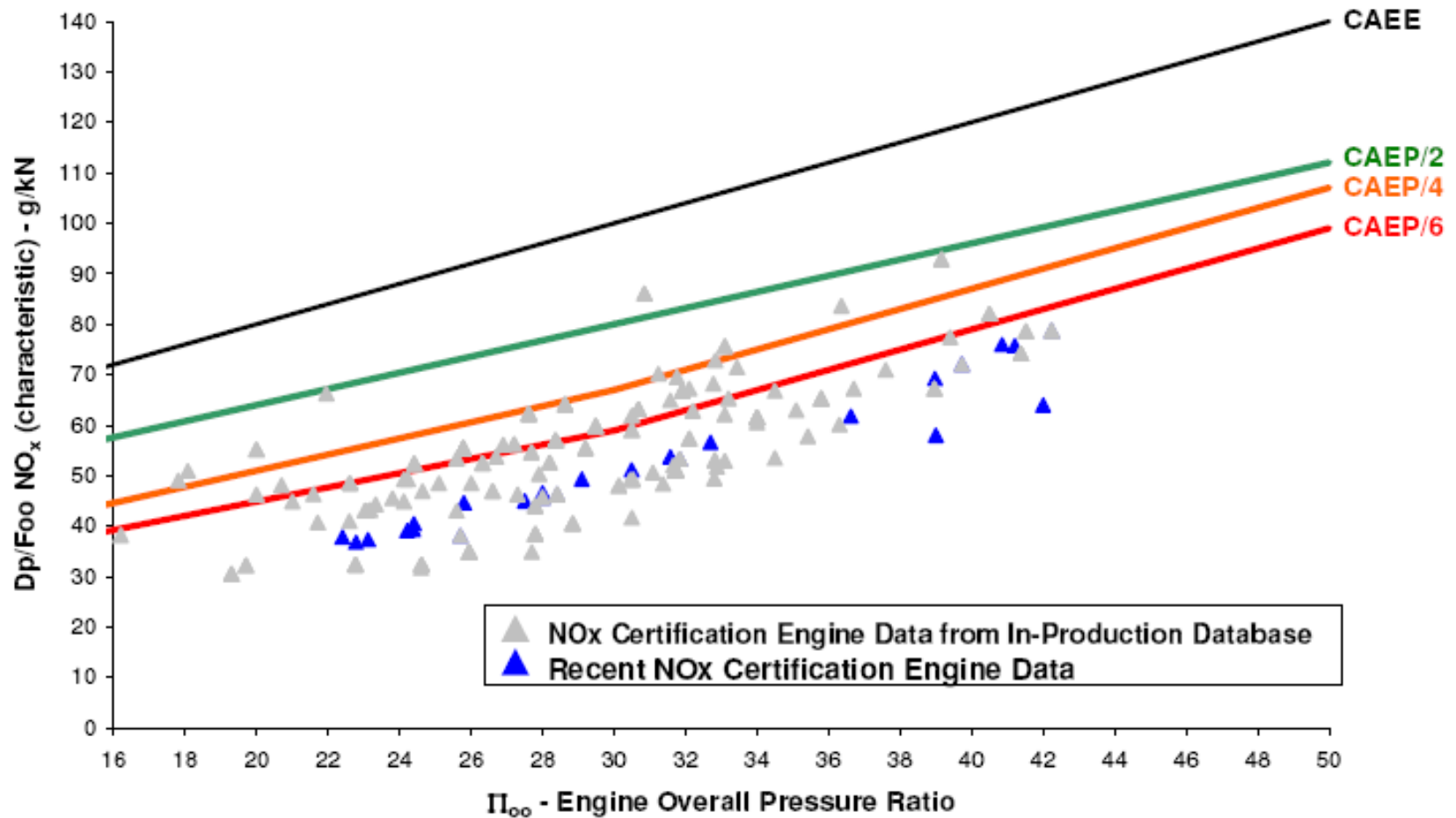
Technology availability across all manufacturers

Technology availability across all seat-classes

Technology Standards



ICAO Technology Standards for NO_x



Ref: Independent Experts NO_x Review and the Establishment of Medium and Long Term Technology Goals for NO_x (ICAO Doc 9887), 2006

Technology Goals

Balance environmental benefit with technological feasibility, economic viability, and do not adversely impact other environmental factors

Purpose

Provide stretch targets for industry R&D to aim at in cooperation with States

Principles

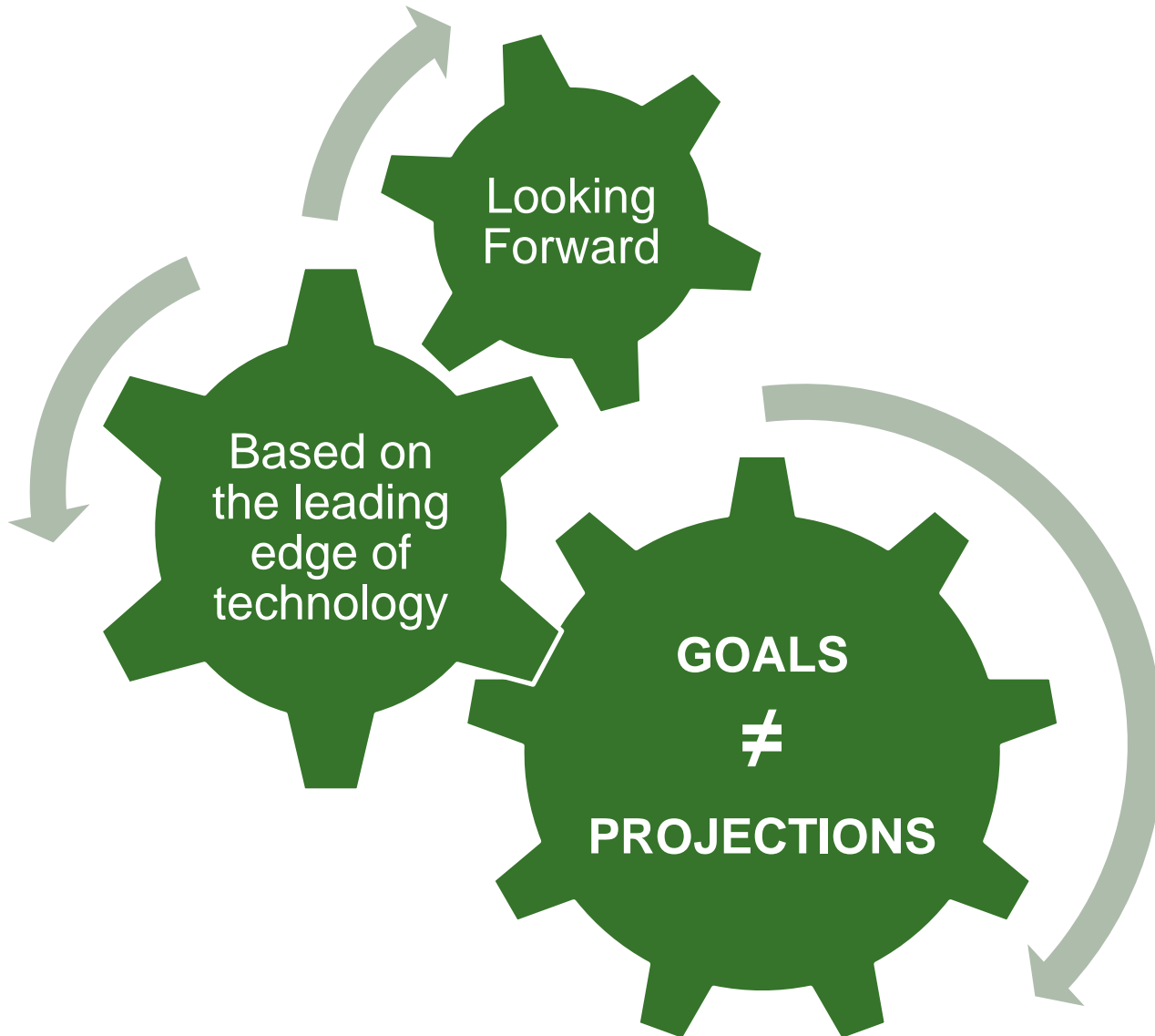
Use the same metric as certification to enable direct comparison

Technology Goals based on Current TRL < 8 technologies that will be TRL>8 at a given time

Technology availability with at least one manufacturer

Technology availability specific to the seat-class considered

Technology Goals



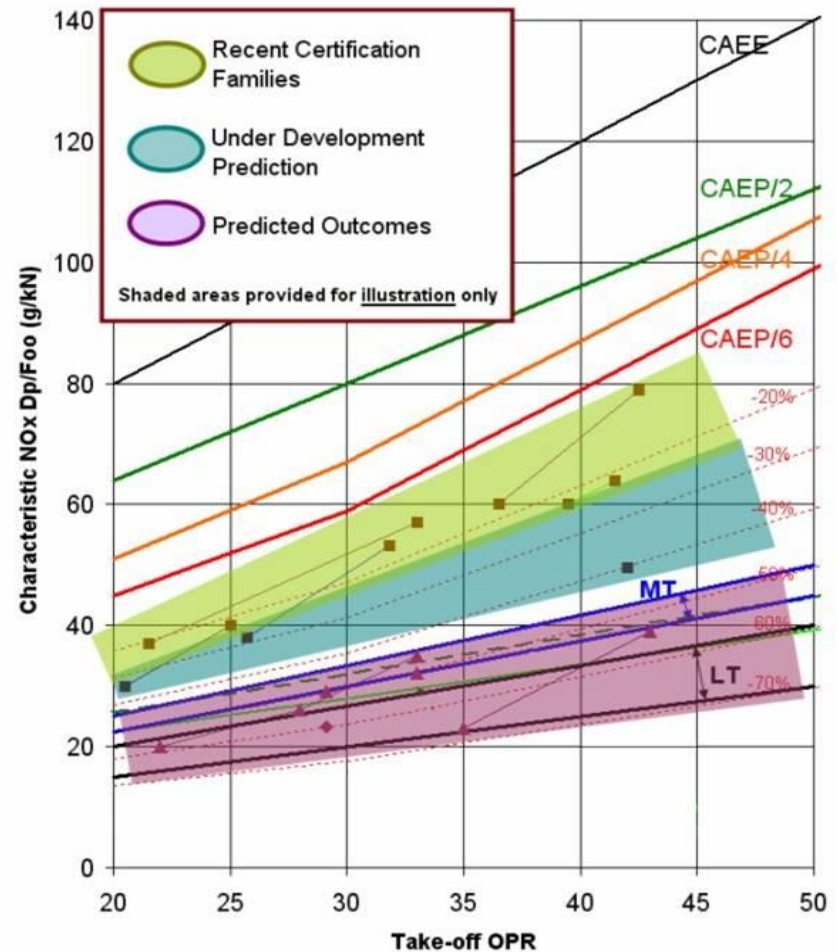
ICAO Technology Goals for NO_x

Mid Term (2016)

- 45% below CAEP/6

Long Term (2026)

- 60% below CAEP/6



Ref: Independent Experts NO_x Review and the Establishment of Medium and Long Term Technology Goals for NO_x (ICAO Doc 9887), 2006

ICAO Environmental Policy Framework

Goals & Standards – Quantify & Mitigate

