

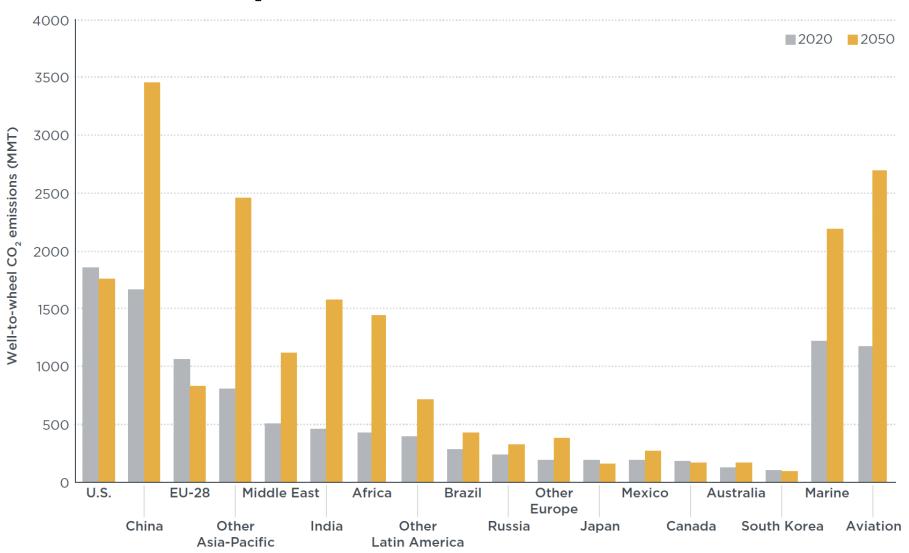
High-level roundtable: roadmaps towards zero emissions

Drew Kodjak,

Executive Director – International Council on Clean Transportation (ICCT)



Airlines are a large and growing share of the transport sector's climate impact.

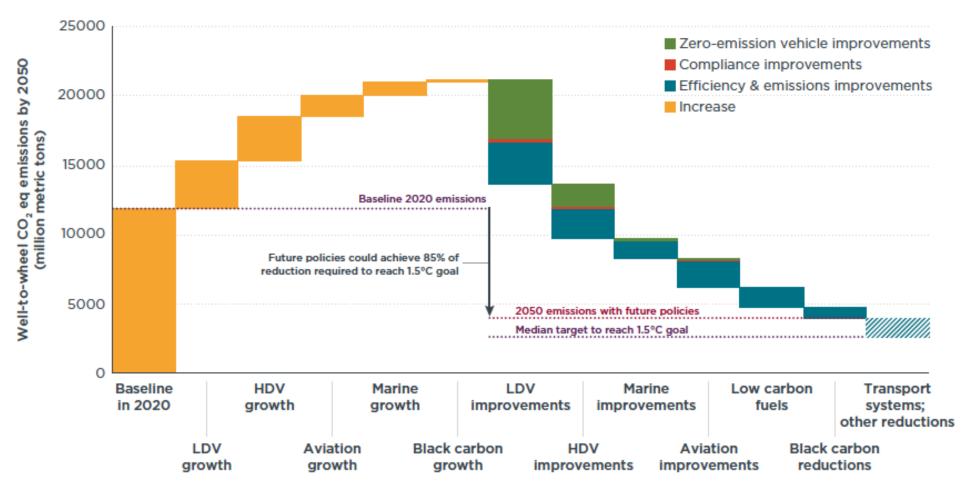


Transportation CO₂ emissions by region, with aviation and marine sectors, in 2020 and 2050

Source: ICCT, forthcoming.

Lower carbon aircraft and fuels will be key to decarbonizing transport.

Baseline CO₂ equivalent emissions and mitigation potential in 2050 by major transportation segment



SUMMARY OF THE AMBITIOUS YET FEASIBLE SCENARIO

Steps toward zero emission aviation

Silver buckshot, not silver bullet •

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mission

Idvanced concer

gellulosic anglect

Optimized wing

and

- Technologies will need to meet the • demands of different market segments
- Expect steps and transitions •
- Suite of policies needed to drive • the transition
 - 1. Standards
 - Incentives 2.
 - R&D support 3.
 - Consumer mobilization 4.

	Transition to zero carbon alternative fuels	
	Regional/short haul electric aircraft	2035+
on	Hydrogen for longer flights	
	Shift to alternative airframe and engine configurations	2030+
once	Strut-based wing, double bubble, blending wing body	
\sum_{r}	Open rotor, turboelectric engines	
	Deploy alternative jet fuels at scale	
ot ot	MSW, agriculture waste, flue gas, and renewable electricity feedstocks	2025+
	Maximize the notential of existing	То
	airframes and engines Laminar flow, improved transonic design, increased span Advanced composites, unitized construction, structural health monitoring	2035
tuk	Advanced composites, unitized construction, structural health monitoring	5

GTF, ultra high bypass ratio engines

Thank You

