Towards Sustainability



The current status and future outlook of fuel cell vehicles in Toyota







Vincent Mattelaer – Senior Engineer – R&D Fuel Cell Division



Forecast International Climate Change



Source: From the IPCC Working Group III 5th Assessment Report (2014)

Regarding GHG emissions, there is no time to lose

Toyota 2050 Challenge

To go beyond zero environmental impact and achieve a net positive impact, Toyota has set itself six challenges. All these challenges, whether in climate change or resource and water recycling, are beset with difficulties, however we are committed to continuing toward the year 2050 with steady initiatives in order to realize sustainable development together with society.

Toyota 2050 Challenge





Future Vision: HyGrid (Hybrid Hydrogen – Electricity Grid)



Source: HyGrid Study Group HP



Mirai is not a car, it's a symbol





Mirai is not a car, it's a symbol

The Toyota Way

"Contribution to society through Monozokuri."



Toyota Earth Charter (1992)





Prius at Tokyo Auto Show (1995)



FCEV-1 (1996)



Developing Hydrogen FCEV for 20 years





Mirai = "Future" in Japanese

3F

1919

Mix of powertrains required to achieve 90% CO2 reduction.



Toyota FCEV sales plan in 2020



GLOBALTARGET: More than 30,000 FC-stacks per year as of 2020

Mirai Sales Distribution in Europe





March 20	19:
Japan:	2834
USA:	5022
EU:	459
TOTAL:	8319



Hydrogen Refuelling Infrastructure



http://h2.live/en

700 bar station		2019 ACTUAL
Germany		70
UK		10
Denmark		10
Norway		4
Sweden		3
Netherlands		2
Belgium		2
France		4
Italy		1
Iceland		2
Austria		5
Switzerland	+	1
Latvia		0
TOTAL		114



Other developments



Caetano Fuel Cell Bus



Sora Fuel Cell Bus



Tundra Fuel Cell Pizza delivery



Project Portal Fuel Cell Truck



Toyota Fuel Cell Truck



Toyota Fuel Cell Forklift



Mirai Technology

FCEV Overview and Components





In-House Development and Production





Application of Core Hybrid Technology



Application of Core Hybrid Technology





Huge potential for cost reduction



ALWAYS A BETTER WAY

Thank you

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