

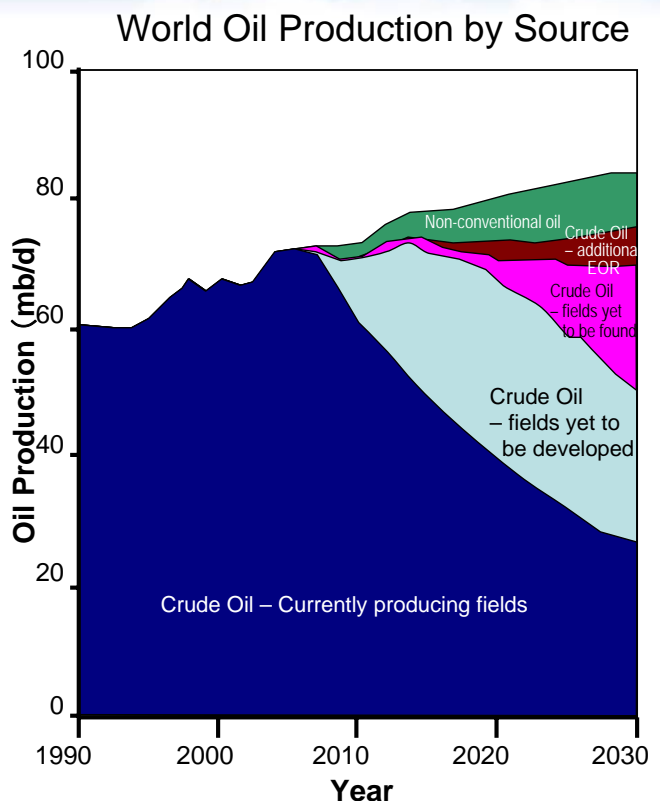
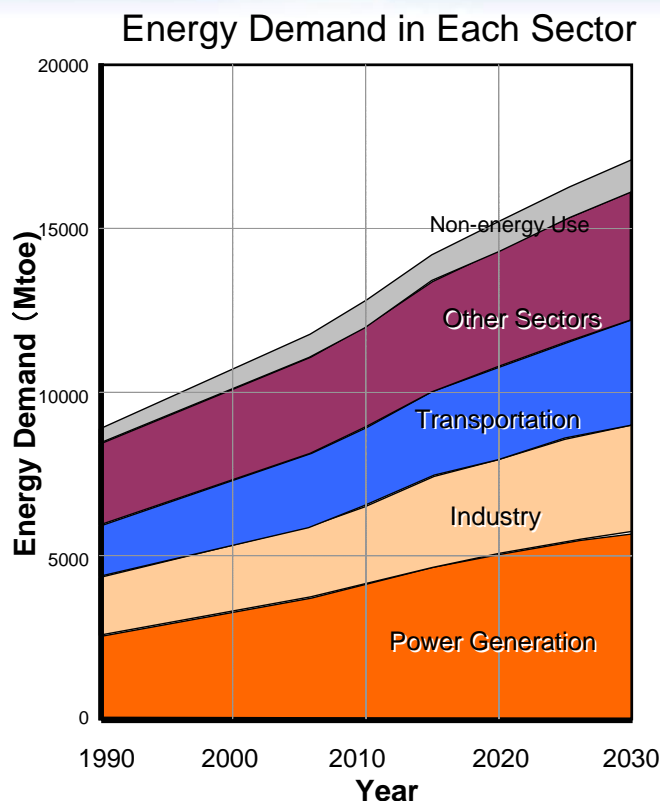
Fuel Cell Vehicle

Takashi Moriya
Operating Officer
Honda R&D Co., Ltd.
October 27, 2009

Blue Skies
for Children

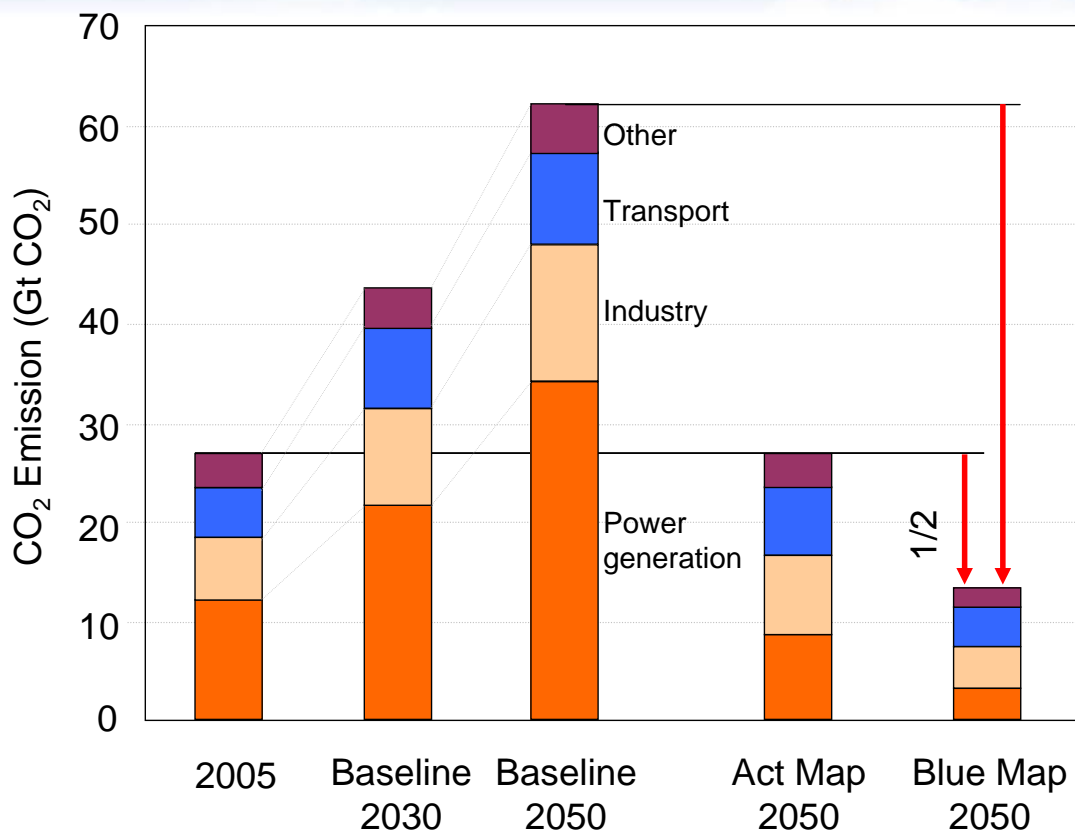
Energy Demand & World Oil Production : Forecast

HONDA
The Power of Dreams



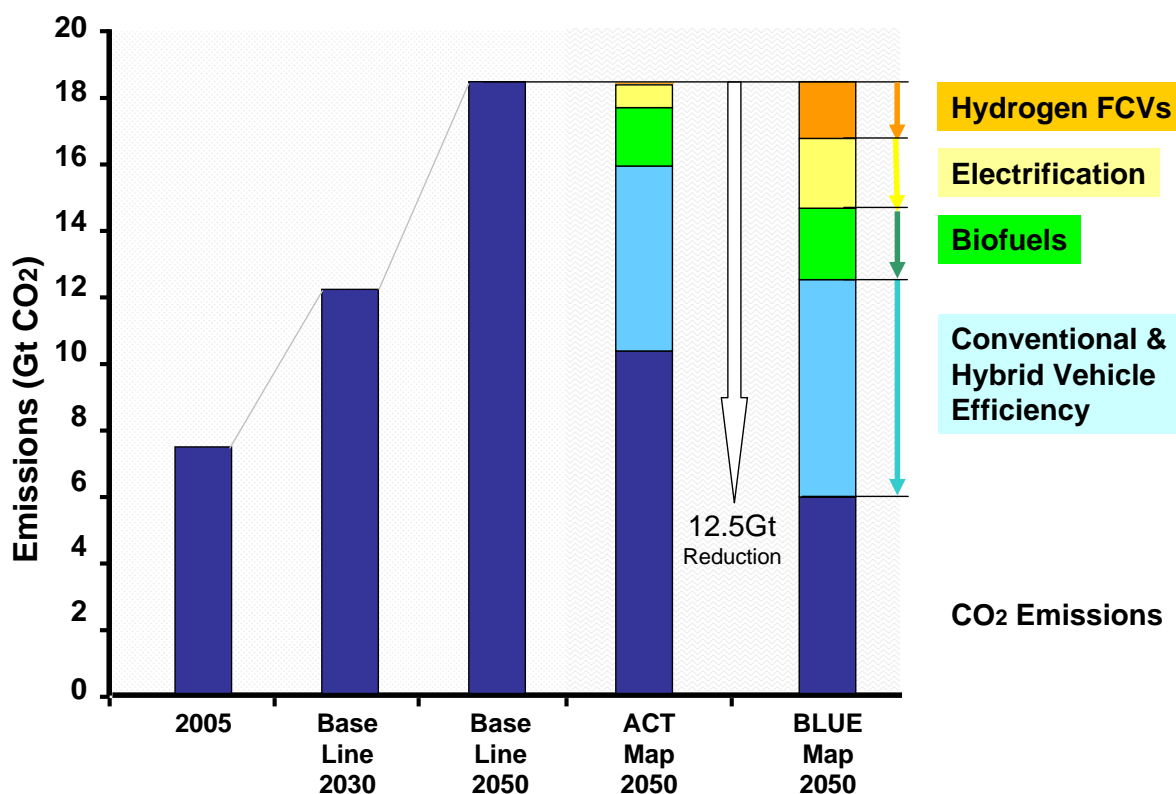
Source: WEO 2008 Reference Scenario

CO₂ Emissions Increase and Reduction Scenarios by 2050

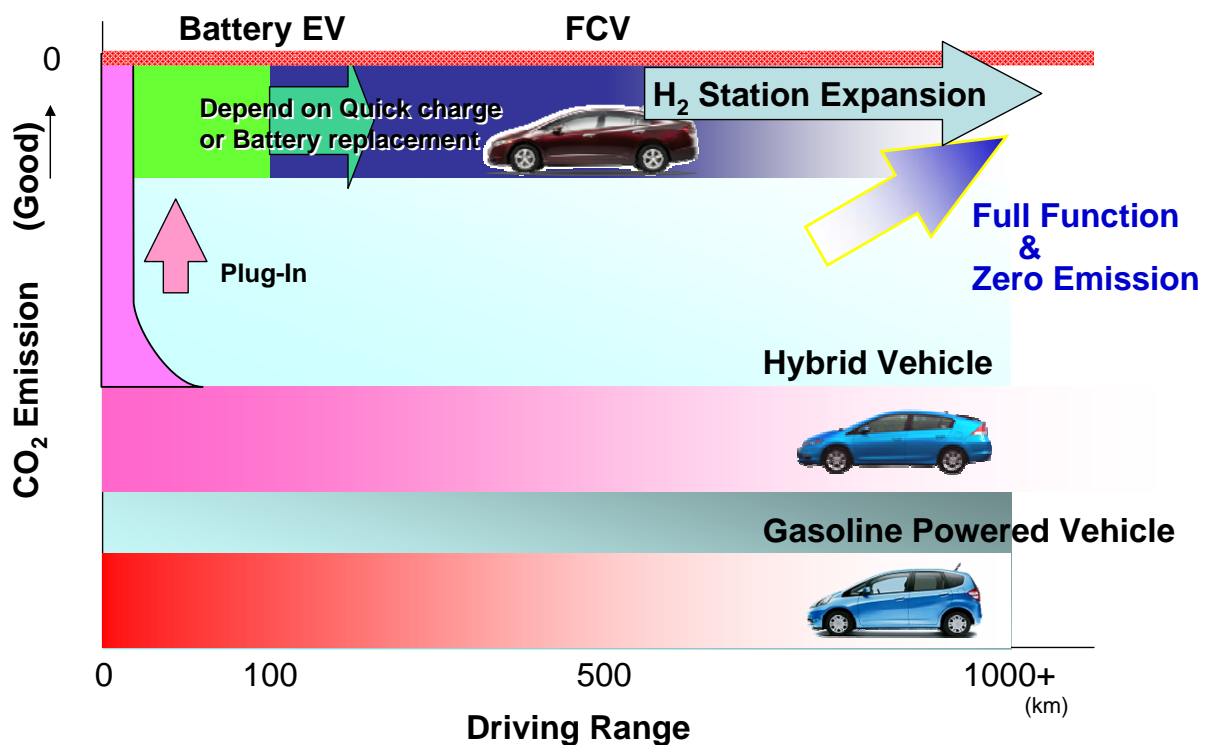
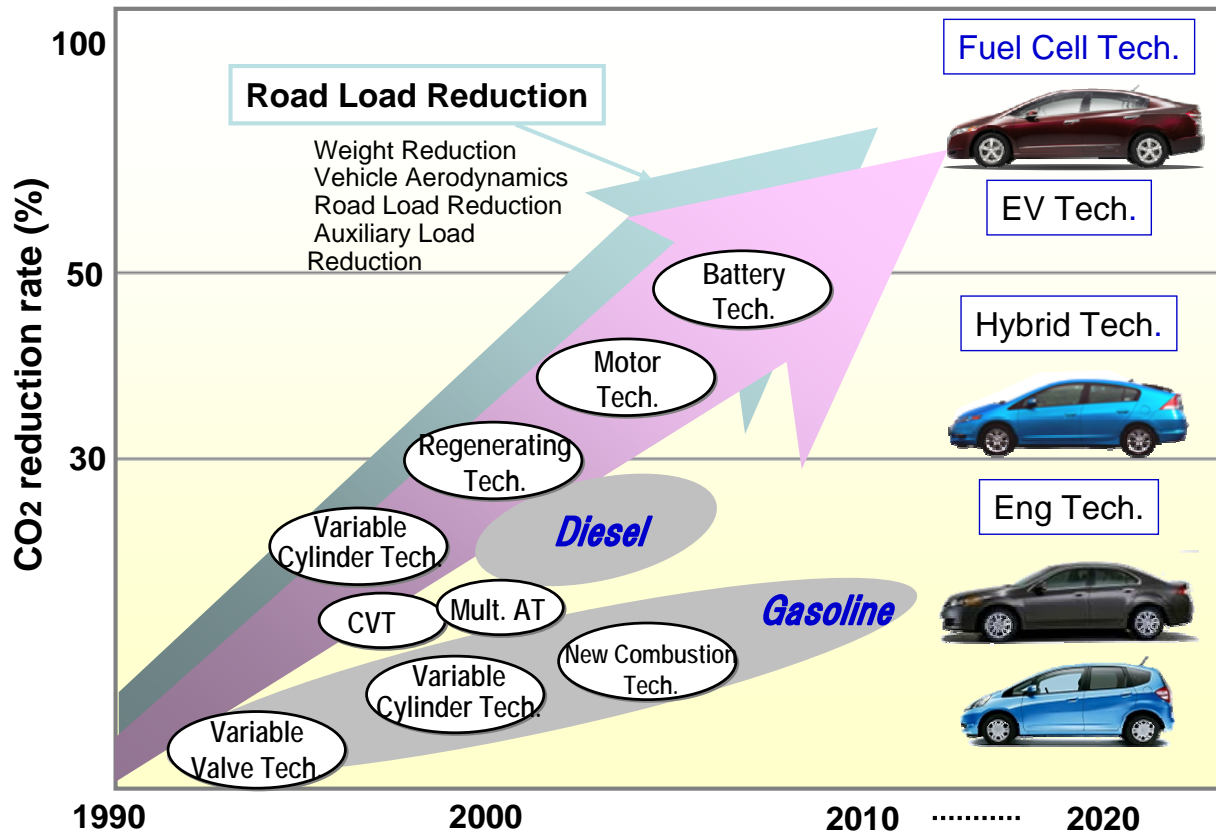


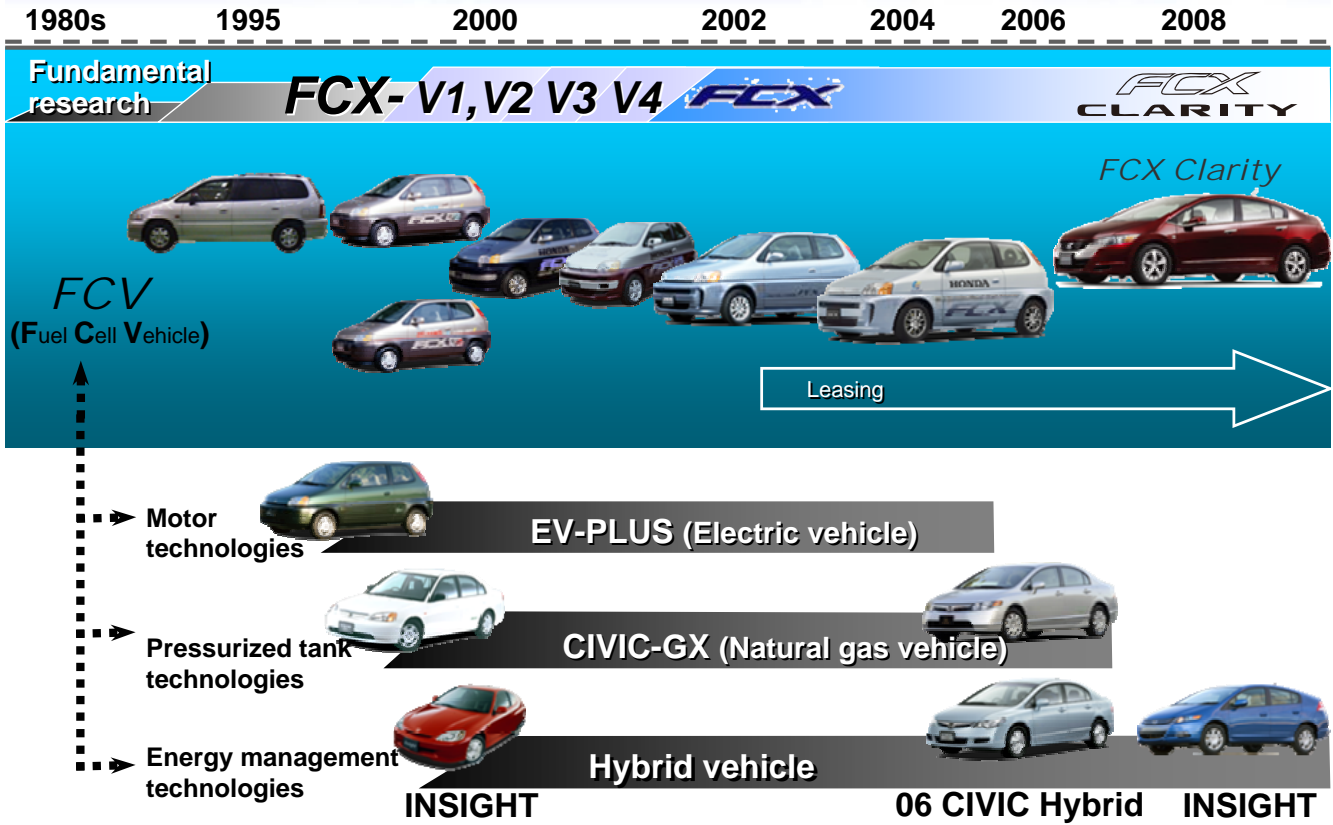
Source: ETP2008

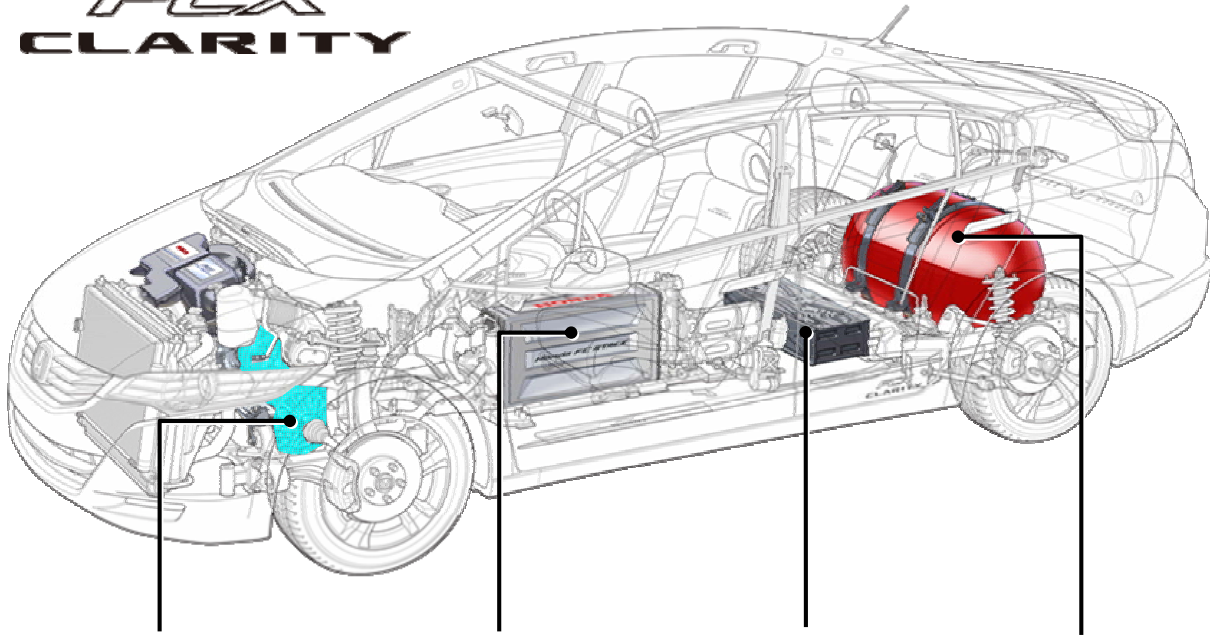
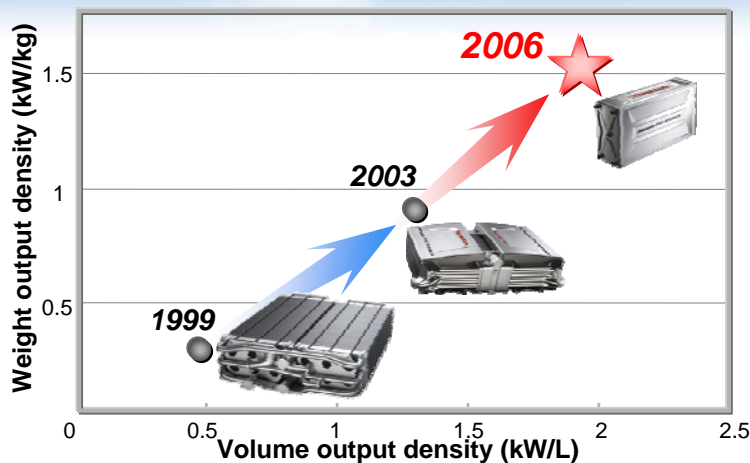
Road Map for GHG Reduction in the Transportation Sector



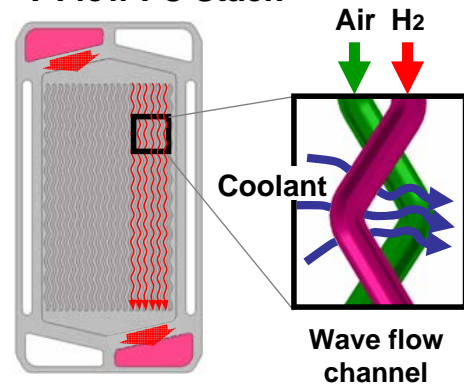
Source: ETP2008








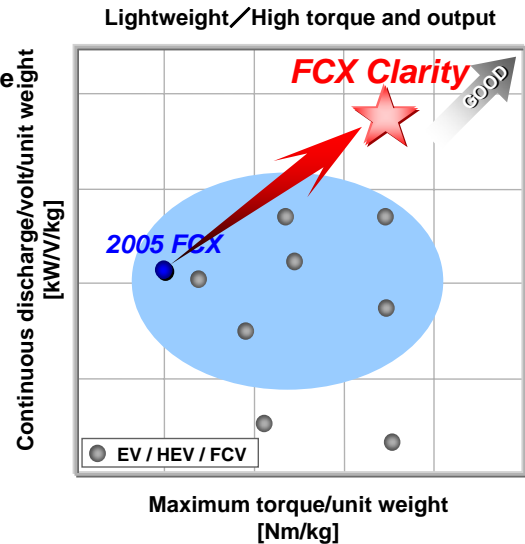
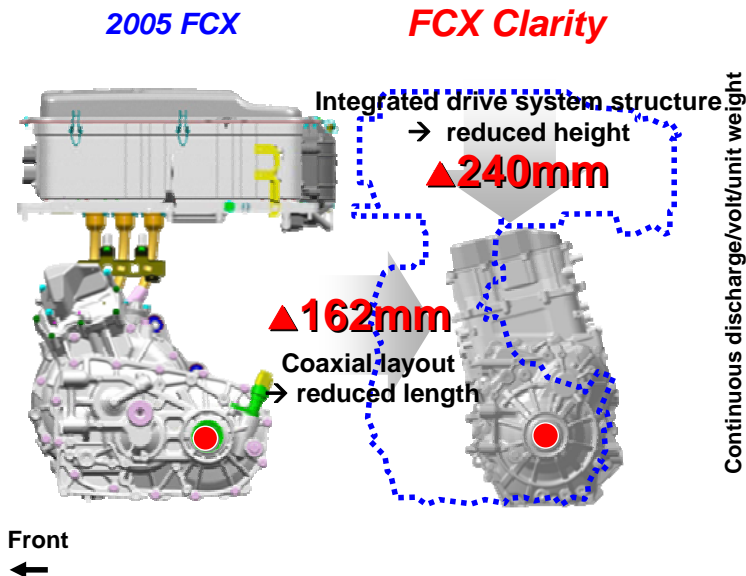
FCX
CLARITYCoaxial Electric Drive
Motor and GearboxV Flow Fuel Cell Stack
(Center tunnel layout)Lithium-Ion
BatteryHigh-Pressure
Hydrogen TankHonda FC Stack
Compact, Lightweight, Higher-output Design

V Flow FC Stack



			
	Material Evolution	Structural Evolution	
PEM Operating temp.	Fluorine electrolytic membrane 0 - 80 °C	Aromatic electrolytic membrane -20 - 95 °C	Aromatic electrolytic membrane -30 - 95 °C
Stack configuration	Bolt-fastened stack	Panel box stack	1-box stack
Cell structure	Machined carbon separators with separate seals	Stamped metal separators with unitized seals	V Flow cell structure Wave flow channel separators

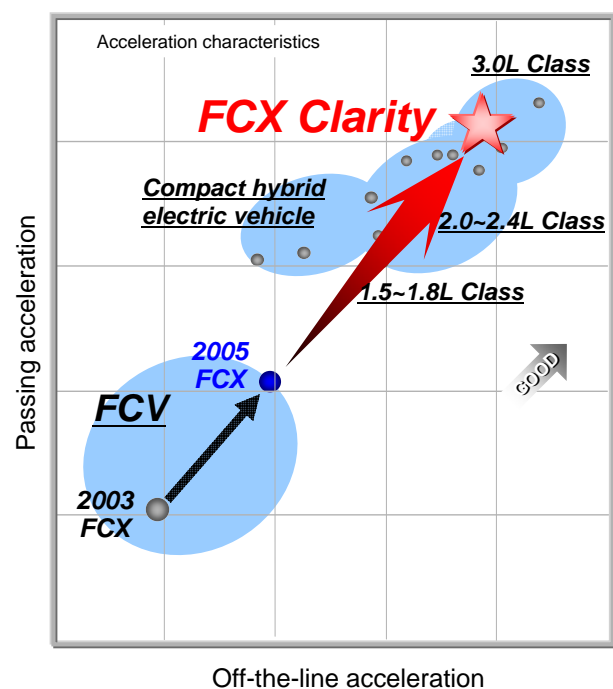
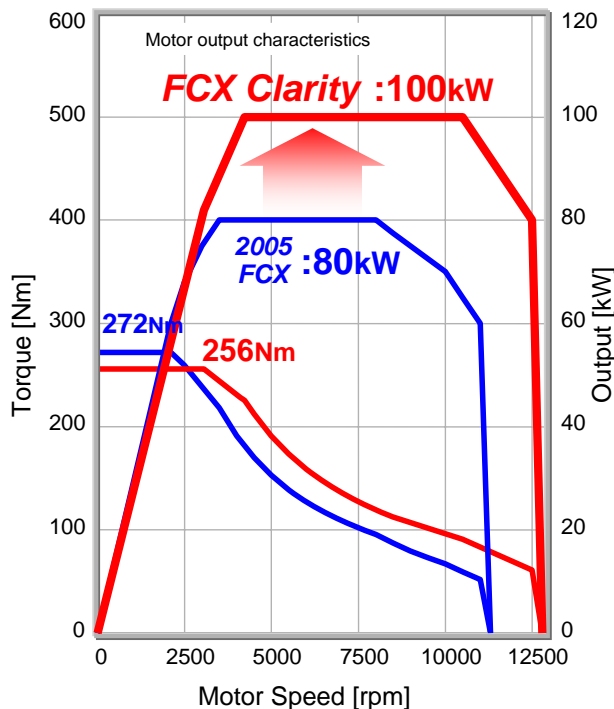
A more compact motor compartment for a compact, short-nose design



An All-New Dimension in Driving Feel Driving performance

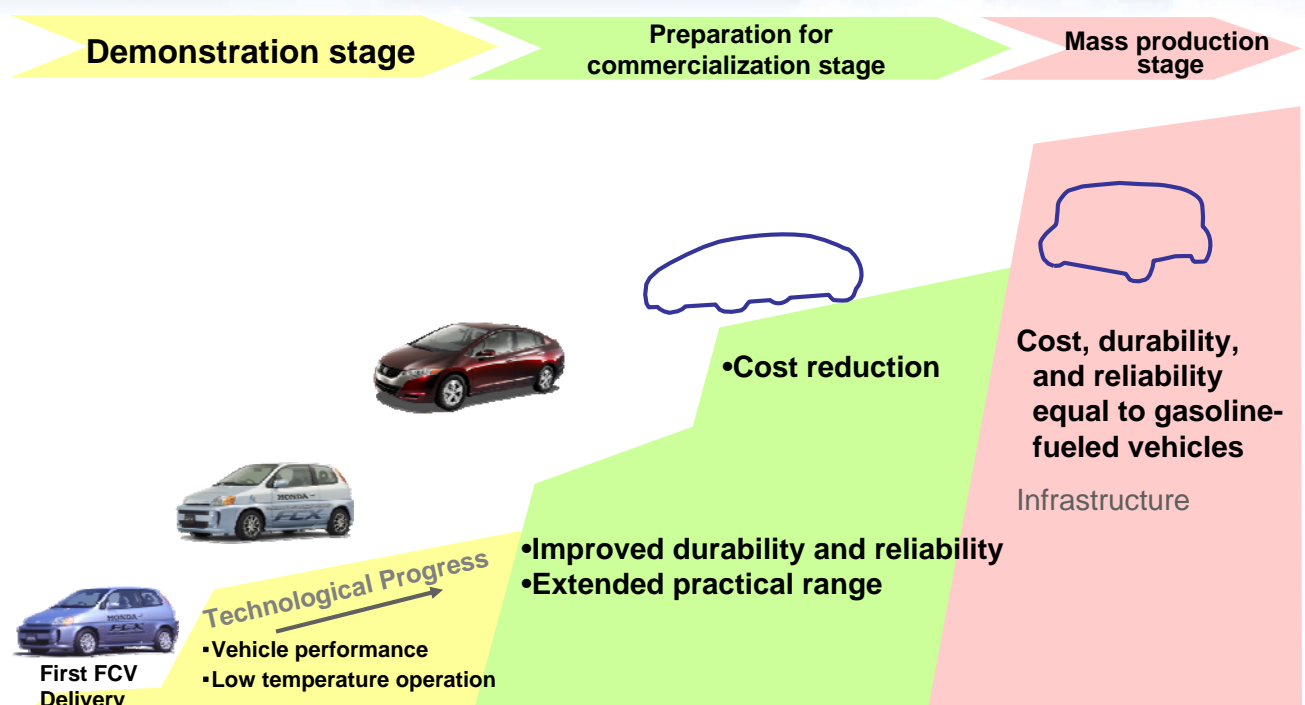
A powerful motor for acceleration that feels limitless

Going beyond the excellent off-the-line acceleration of the 2005 FCX,
the FCX Clarity also adds improved acceleration in the mid- and high-speed ranges

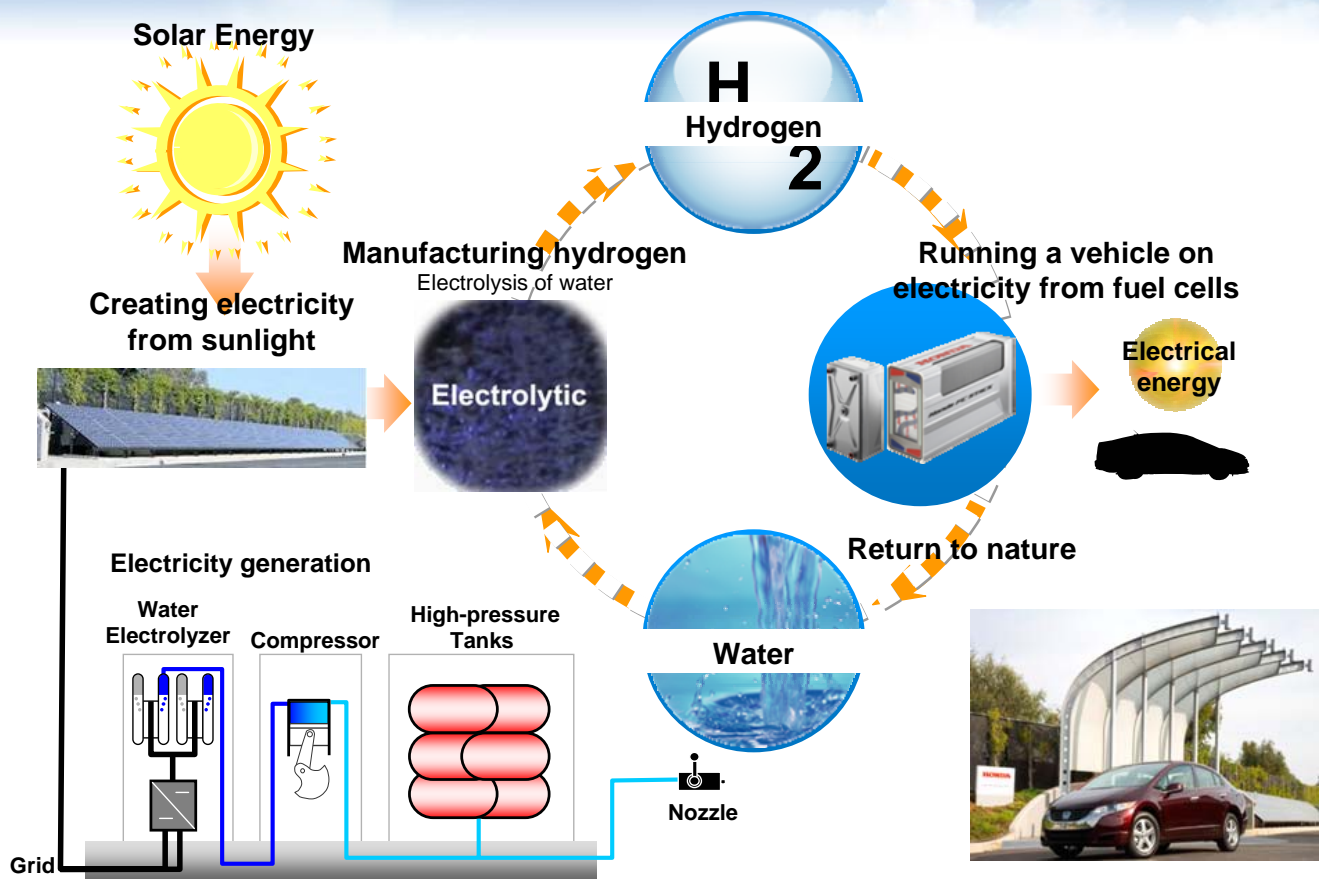


Challenges, Work in Progress

e.g.
cost,
durability,
range extension,
codes & standards,
market acceptance,
infrastructure deployment



Aiming at Mass-production by progressive efforts



- We urgently need to develop the technology to harness new sources of energy and reduce greenhouse gas emissions.
- Honda believes fuel cell vehicles are the ultimate solution to the requirements and needs of society in the future. Our long-standing research and development work on fuel cell vehicles will continue towards a sustainable future.
- While offering the exceptional environmental performance only a fuel cell-powered vehicle can, FCX Clarity does not forget the pleasure of driving. Zero CO₂ emissions and an exciting drive is what FCX Clarity is all about.
- On our way toward a fully sustainable hydrogen-based society, the building of an appropriate infrastructure and achieving widespread social acceptance are essential in the popularization of fuel cell electric vehicles.

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The Power of Dreams