

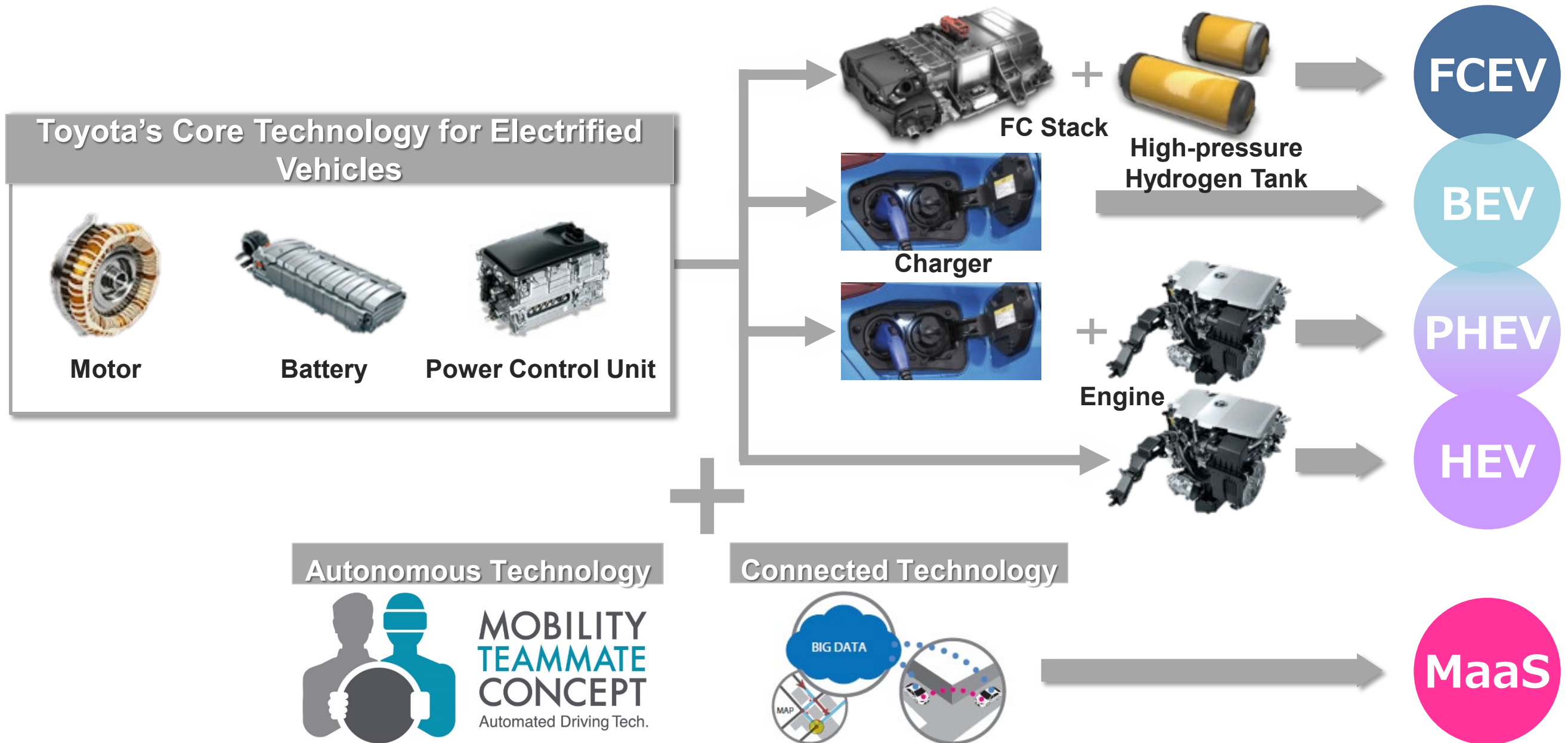
Royalty-free Patent Licenses for Vehicle Electrification Technology

April 3, 2019

Toyota Motor Corporation

Director and Executive Vice President

Shigeki Terashi



Serious Environmental Issues

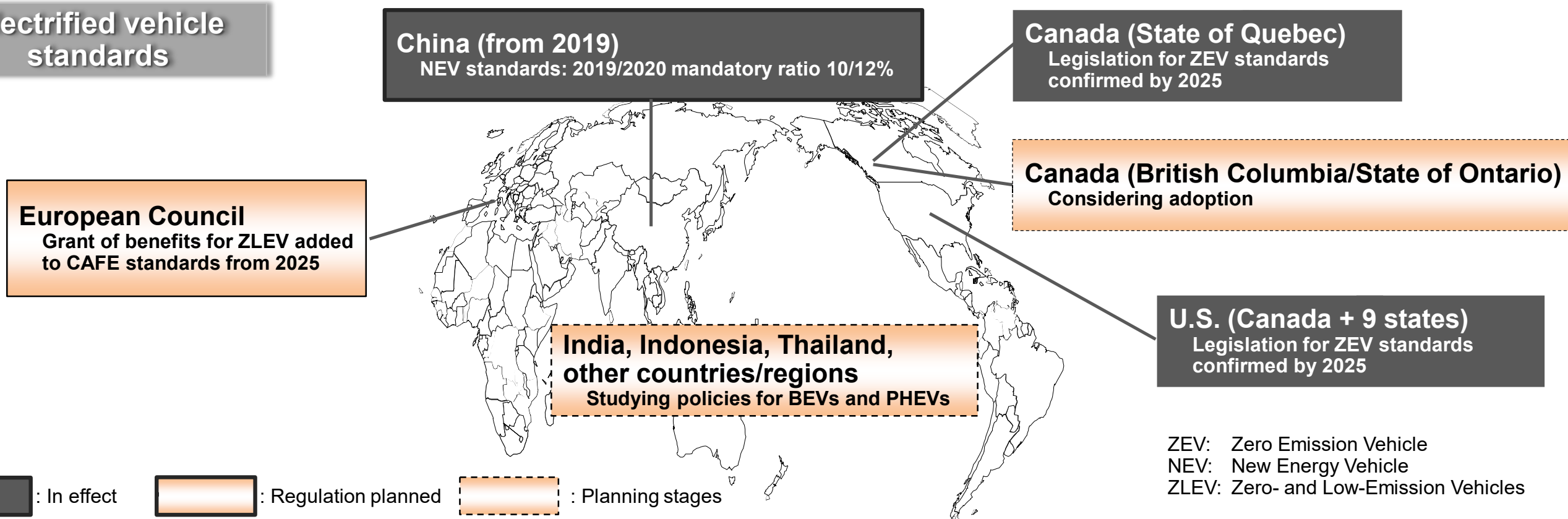
3



Fuel economy (CO₂) standards

- Countries adopting the standard
 - Tightening of standards
- 2010
Japan, U.S., Europe, China
- 2015
Japan, U.S., Europe, China
+4 countries
- 2020
Japan, U.S., Europe, China
+7 countries

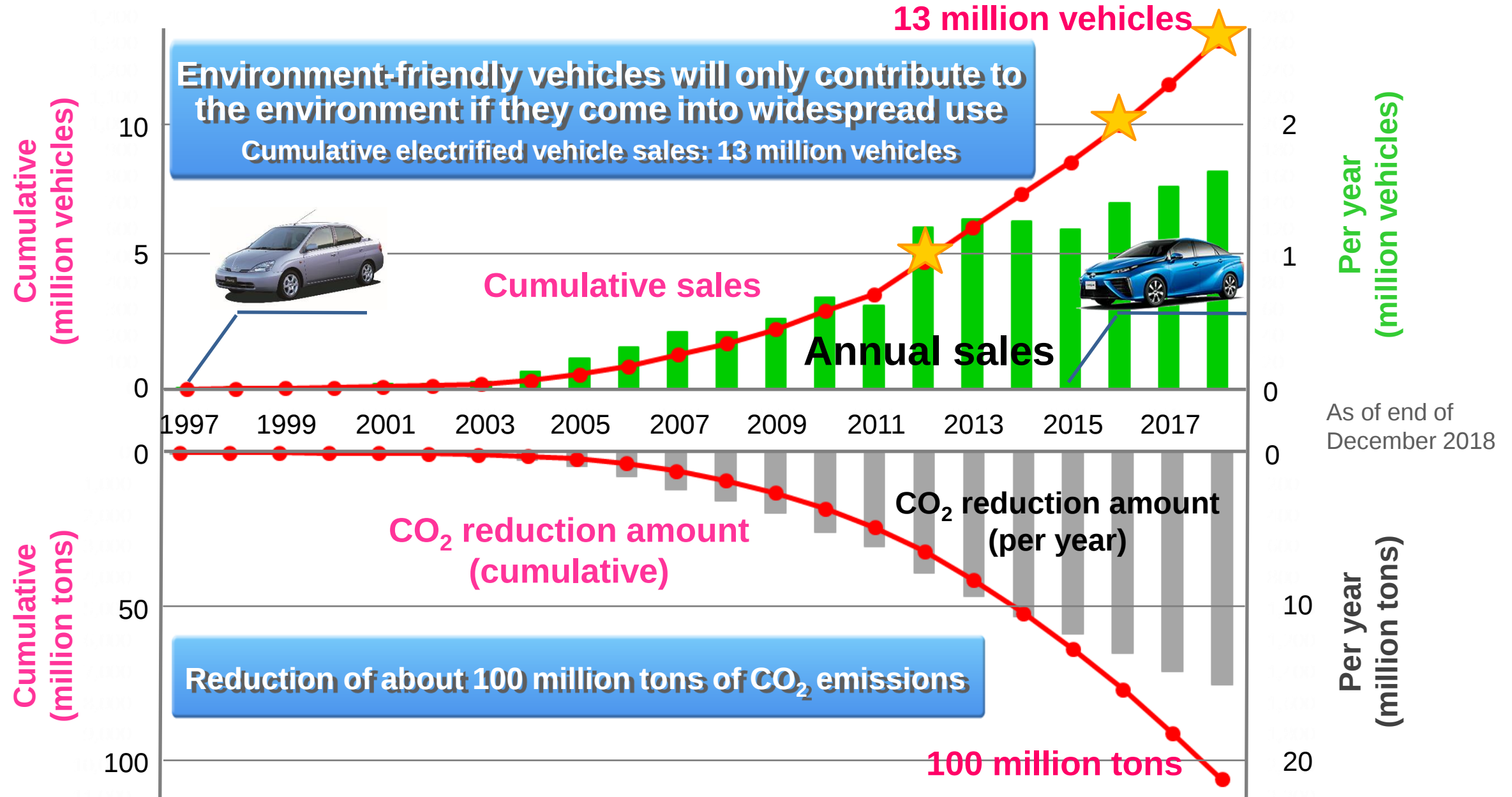
Electrified vehicle standards



Tightening of fuel economy (CO₂) standards in numerous countries and regions is increasing the drive for electrified vehicles

Electrified Vehicle Sales Records and CO₂ Reductions

5

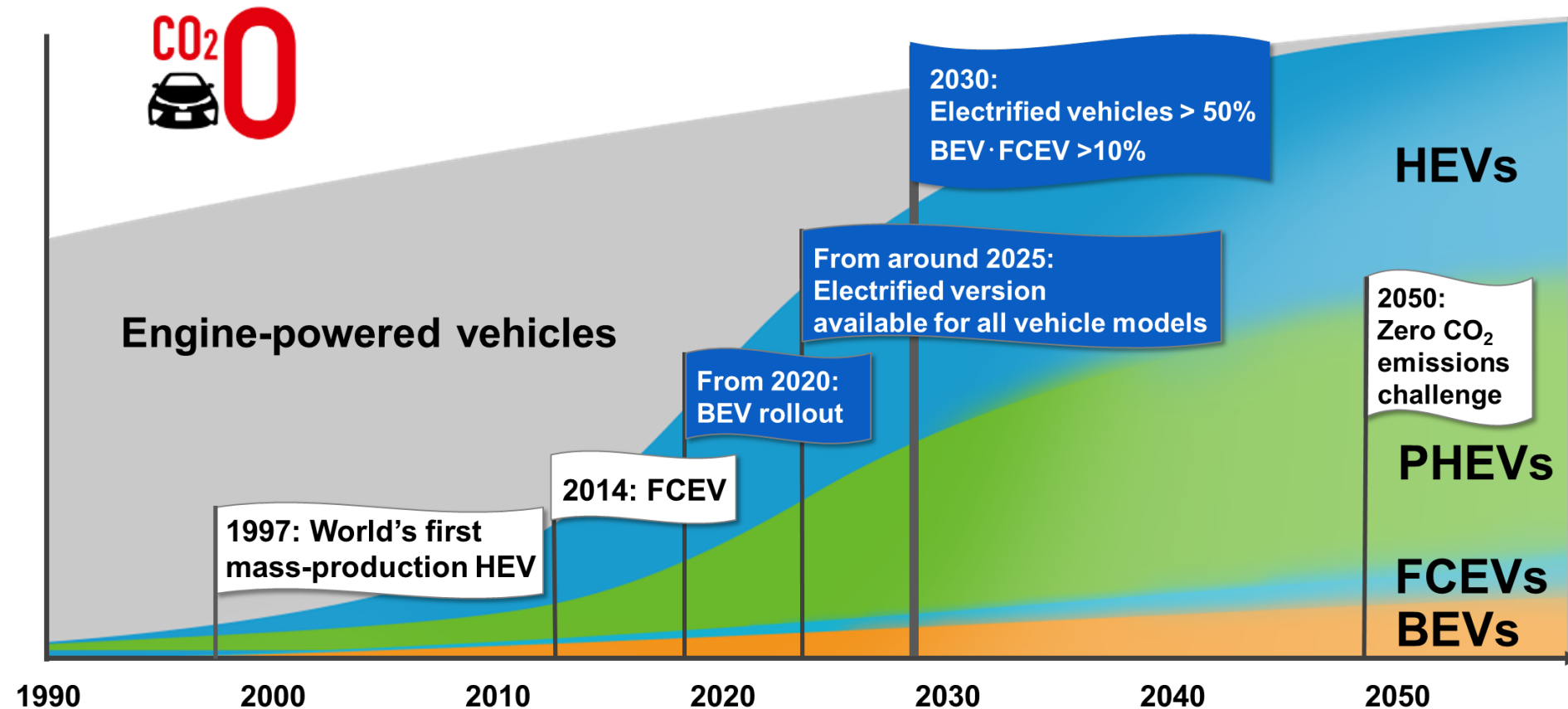


Toyota Environmental Challenge 2050



New Vehicle Zero
CO₂ Emissions
Challenge

2030 Milestones

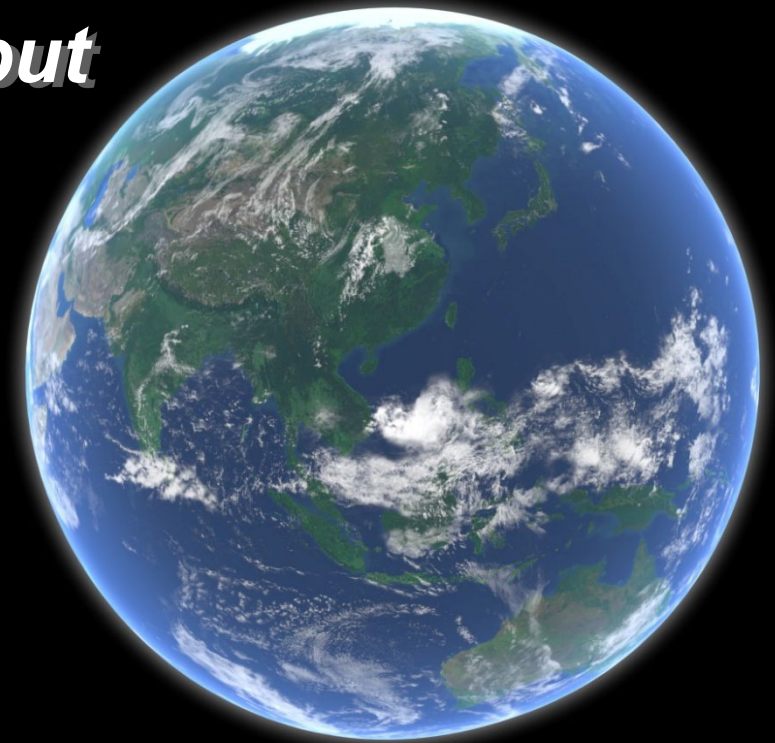


2050 90% reduction of new vehicle CO₂ emissions
(compared to 2010)

Home Planet

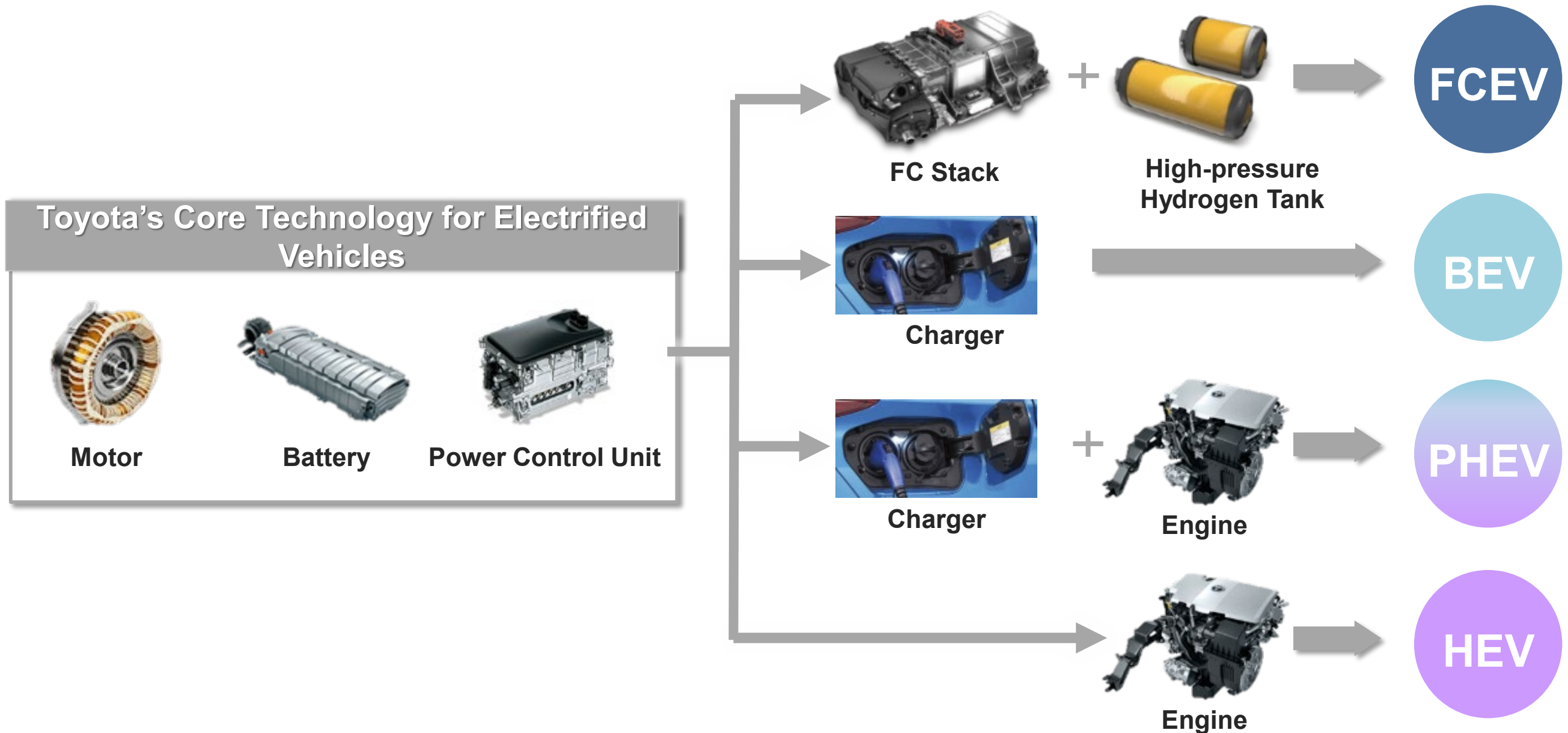
We want to reduce CO₂ emissions on a global scale.

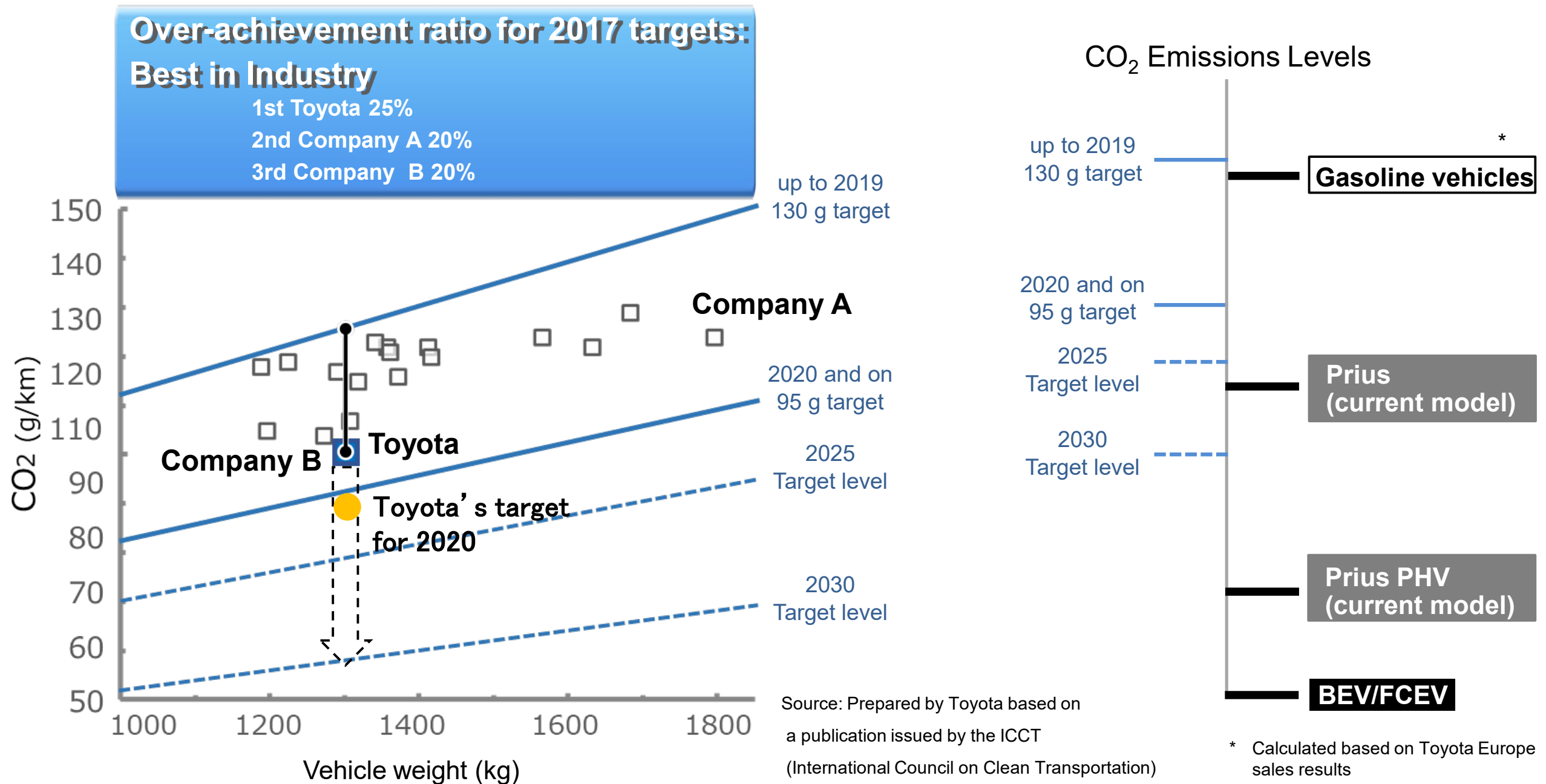
To do this, environment-friendly cars must be put into widespread use on a global scale.

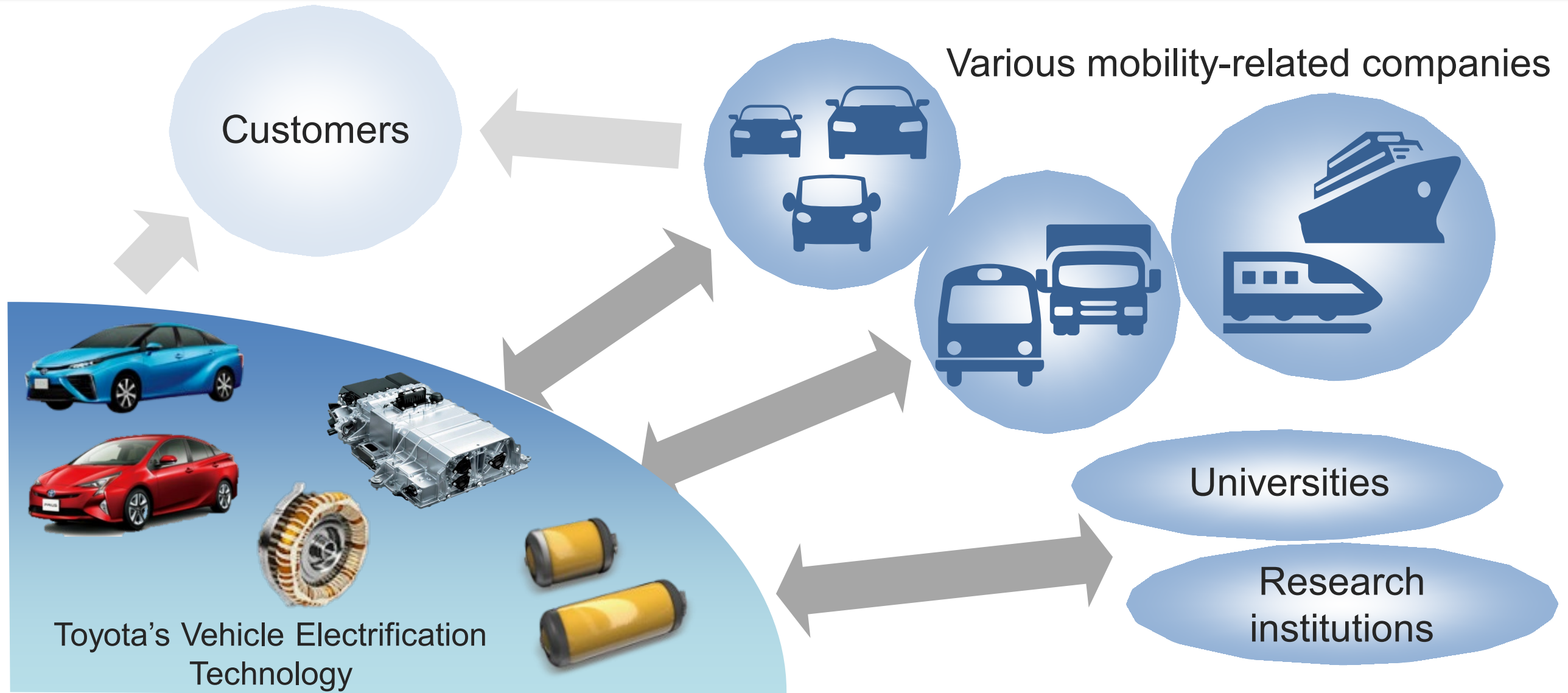


Toyota's Electrification Technology Meets Various Needs

8







Contribute to the popularization of electrified vehicles by becoming a system supplier of vehicle electrification technology

- **Toyota's stance on patents in general: Open policy**
Provide utilization of patents for an appropriate licensing fee
- **Announced in January 2015**
Toyota opens approximately 5,680 (at the time) fuel cell vehicle patents for royalty-free use
Vehicle-related patents: through the end of 2020
Infrastructure-related patents: indefinitely

Vehicle electrification technology patents:
Licenses to approximately 23,740 royalty-free patents to be granted

Electrification technology in general: Until end of 2030
Fuel cell-related patents: Extended to end of 2030

Motor

Approx. 2,590 patents



Power Control Unit

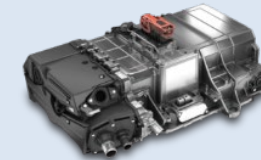
Approx. 2,020 patents



Extended to end of 2030

System Control

Approx. 4,540 patents



FC Stack

Approx. 2,840 patents



High-pressure Hydrogen Tank

Approx. 680 patents

FCEV

System Control

Approx. 7,550 patents



Charger

Approx. 2,200 patents



Engine and Transaxle

Approx. 1,320 patents

BEV

PHEV

HEV

Number of patents: As of end of March 2019

Toyota to provide technical support to users of Toyota's powertrain systems



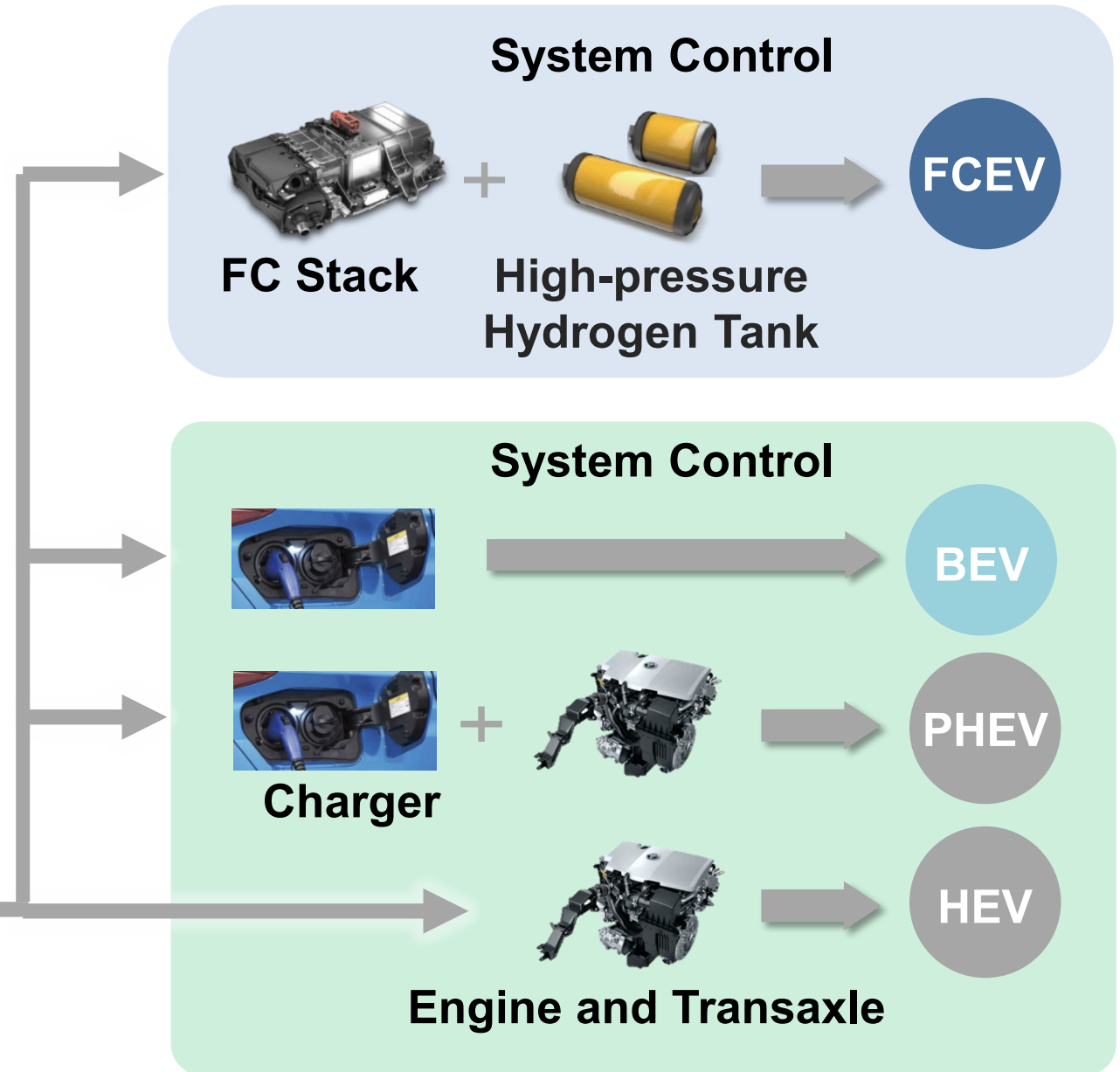
Motor



Battery



Power Control Unit





When we gaze at the sky, we see no borders. To ensure we leave future generations with a healthy Home Planet, Toyota endeavors to undertake numerous CO2 reduction initiatives with a global perspective.



TOYOTA