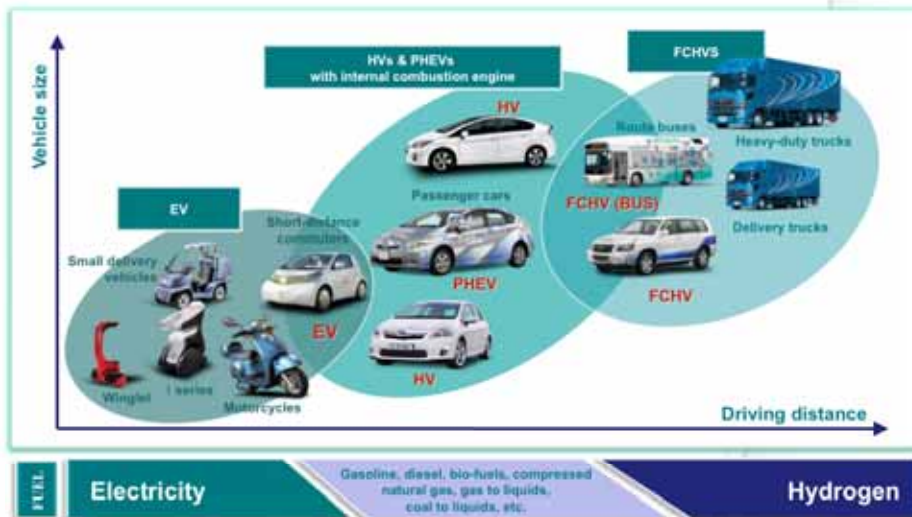


Mr. Akihito TANKE
Toyota Motor Europe

The European Electric
Vehicles Conference 2011
Brussels, 26 May 2011

Powertrain Map in Future Mobility

2



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Hybrid Synergy Drive

3



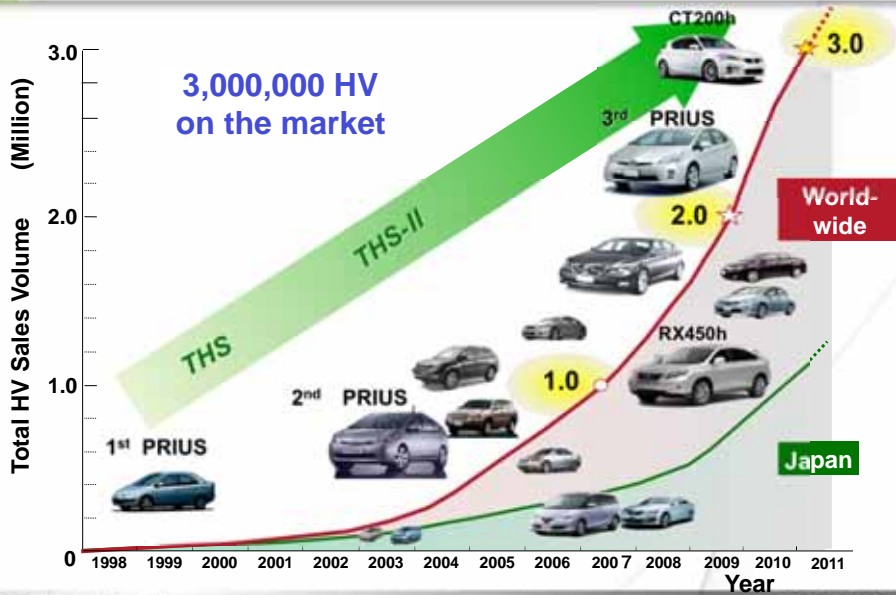
Class leading CO₂ level: 89 g/km, Outstanding fuel economy: 3.9 l/100km

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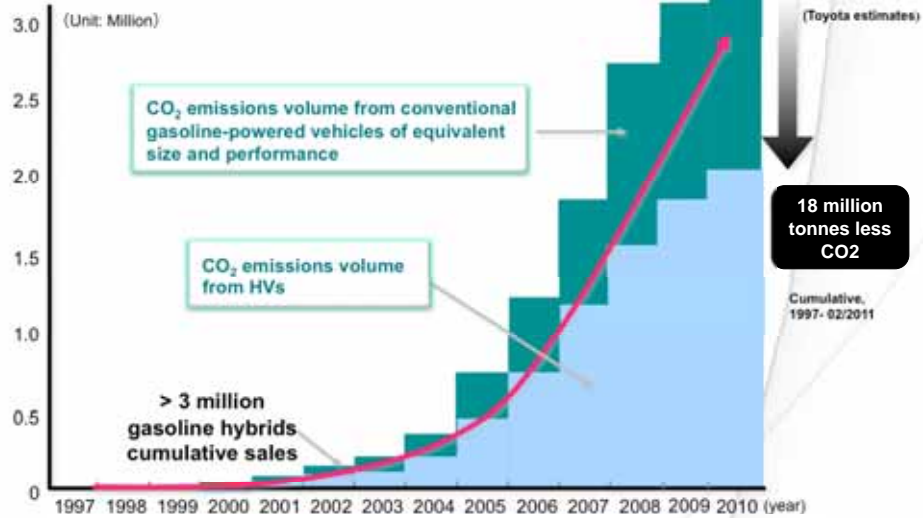
Growth of Toyota Hybrid Sales Volume

4



CO2 Reduction by Toyota Hybrid Vehicles

5



Cumulative CO₂ emissions volume = No. vehicles sold X driving distance X fuel efficiency X CO₂ emissions factor

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TOYOTA Plug-in Hybrid Electric Vehicle

6



Fuel consumption: 2.6 l/100km, EV range: up to 20 km

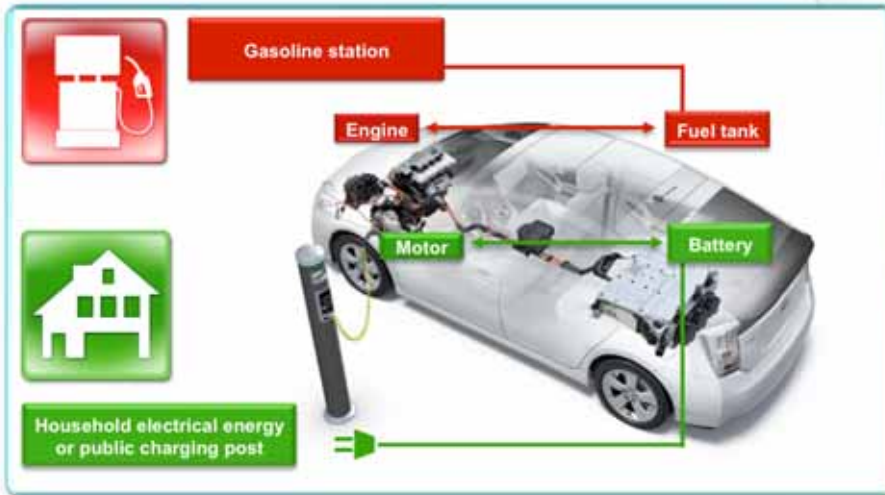
Charging time: 90 minutes (230V, 16A)

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TOYOTA PHEV Concept

7



EV for commuting, Hybrid for longer drives

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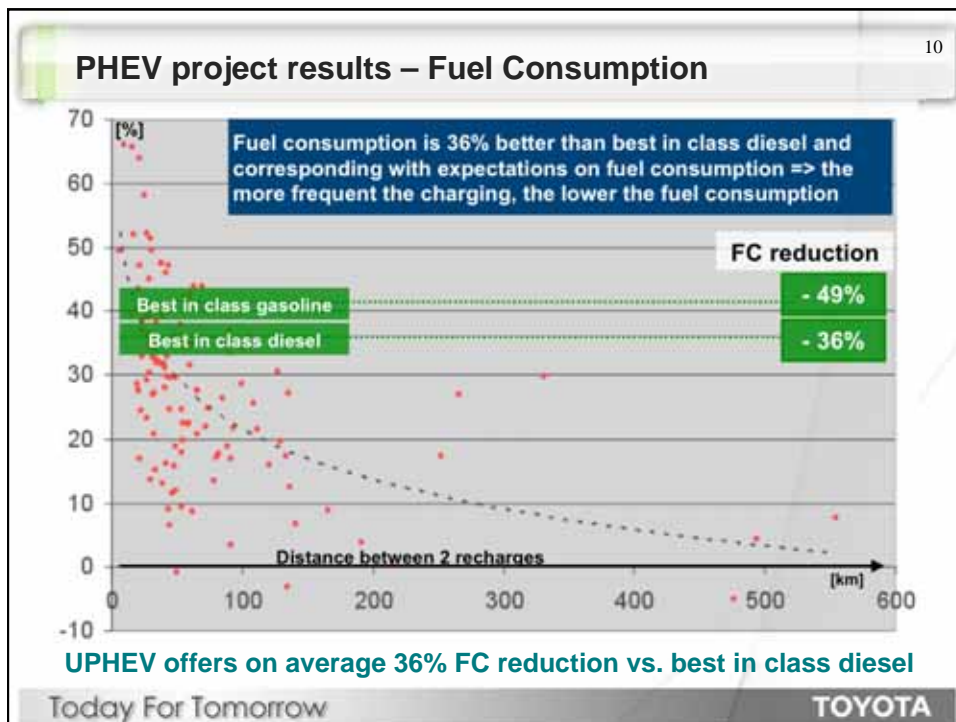
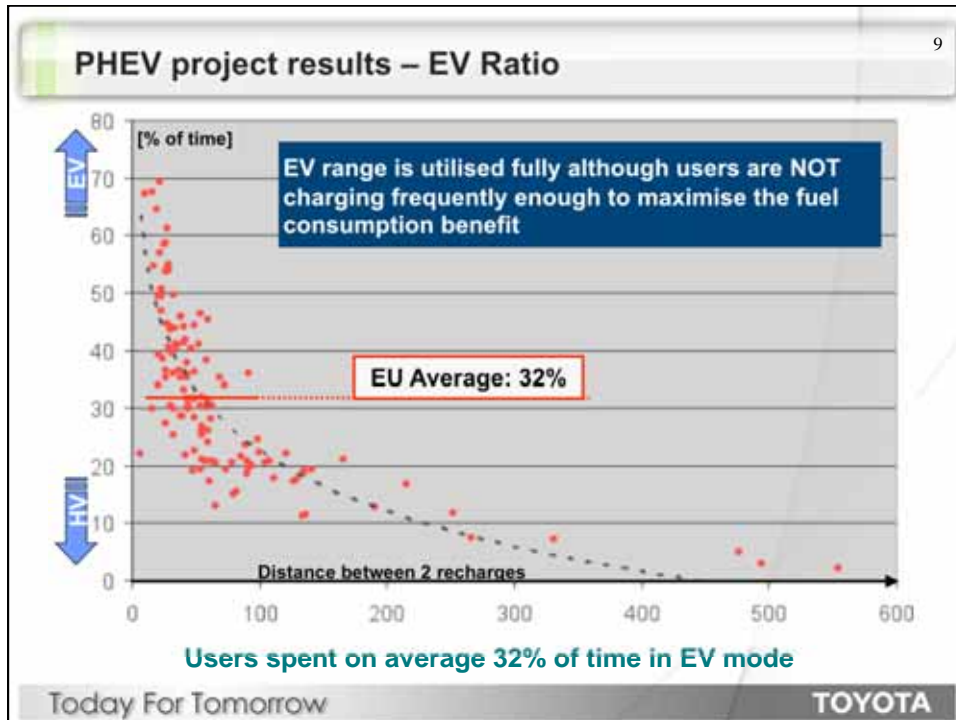
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200 Prius PHEV's in 18 countries on trial 2010-2013



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PHEV project results – Summary

11

Vehicle Data:

- PHEV offers **36% lower fuel consumption** as compared to the best in class diesel, and **49% lower fuel consumption** as compared to the best in class gasoline.
- Large variation in fuel consumption.
- On average users charge the battery after **55km of driving**.
- Benefits of PHEV are dependent on **users' behaviour**. (charging frequency)

Customer Feedback:

- **77%** perceives comfort level as high.
- **70%** think fuel consumption is good or very good.
- **67%** find the EV driving performance good & very good.
- **79%** think the EV range is too short.
- **71%** would like to select EV mode manually.

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Toyota iQ-EV

12

Launch of small commuter EV planned for 2012



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TOYOTA FCHV-adv Hydrogen Fuel Cell Vehicle

13



2 vehicles in CEP Germany and increase to 5 by the end of this year

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TOYOTA Hybrid System Applications

14



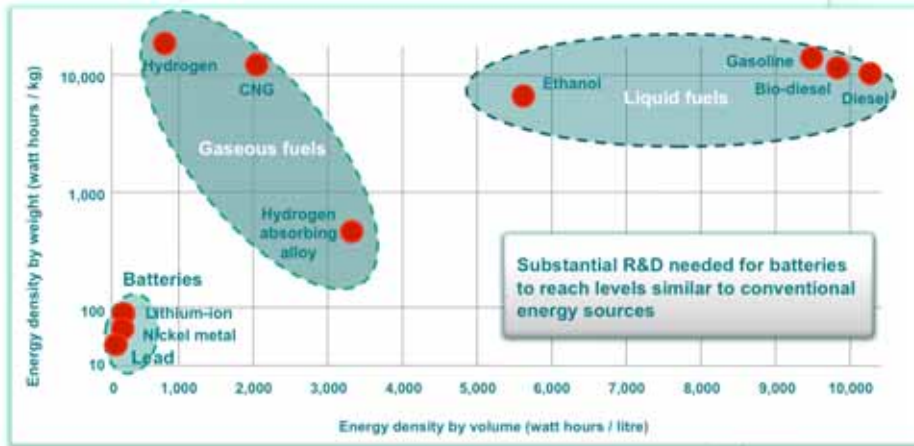
Hybrid technology is applicable to any energy sources

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Challenges - Energy Density

15



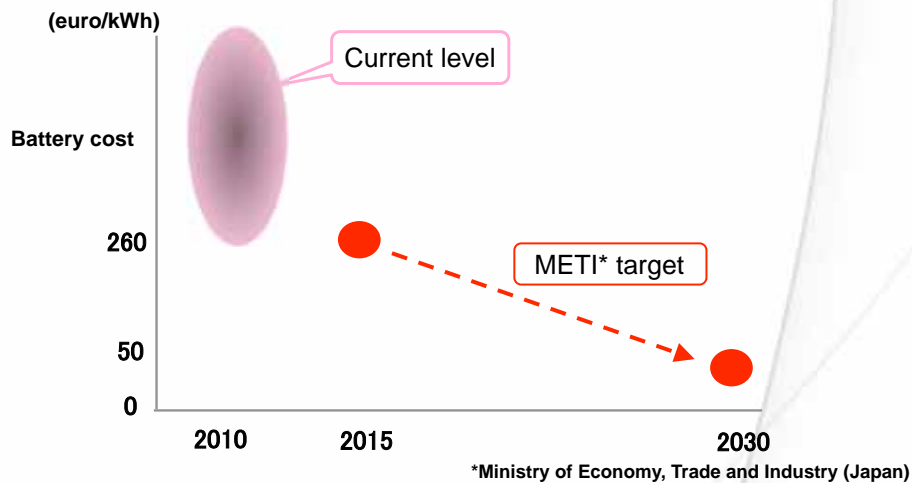
Energy density of electricity is approximately 1/50 of gasoline

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Challenges – Cost of Batteries

16



*Ministry of Economy, Trade and Industry (Japan)

Current battery cost is much higher than the target of METI

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Challenges – Standardization

17

Connectors of car side

AC-charging

High Speed Charging →

DC-charging

Type 1
(Japan)

Type 3
(Italy)

Type 2
(German)

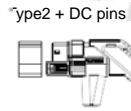
CHAdeMO

China DC

Type 2 DC(t)

Type 2 DC+

Type 1 DC+



Type2 + thermo sensor

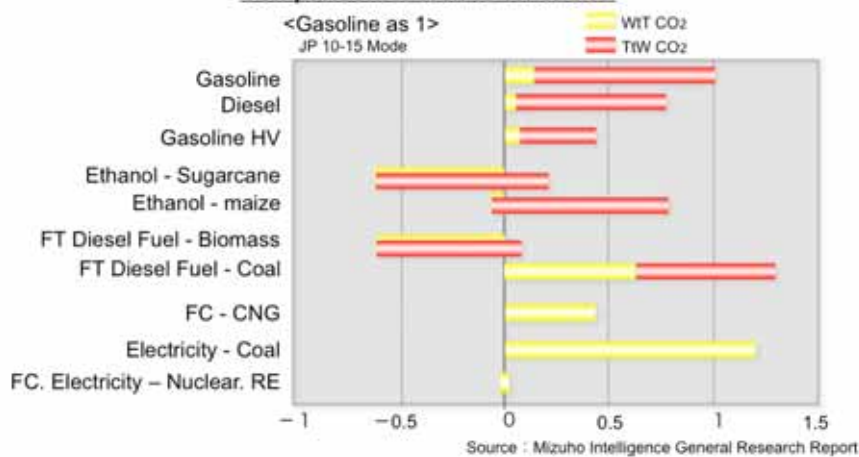
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Challenges – Clean Electricity

18

Comparison of Well to Wheel CO₂



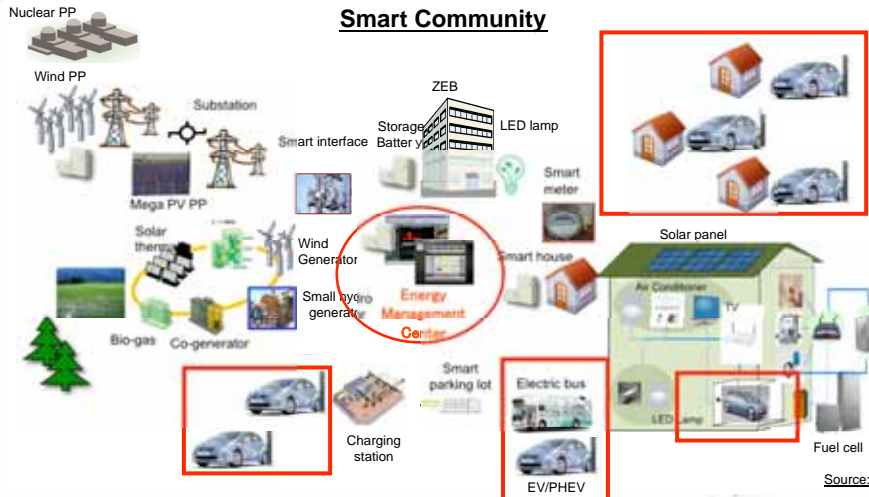
Well to Wheel CO₂ depends on energy sources

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Challenges – Charging Controls in the Grid

19



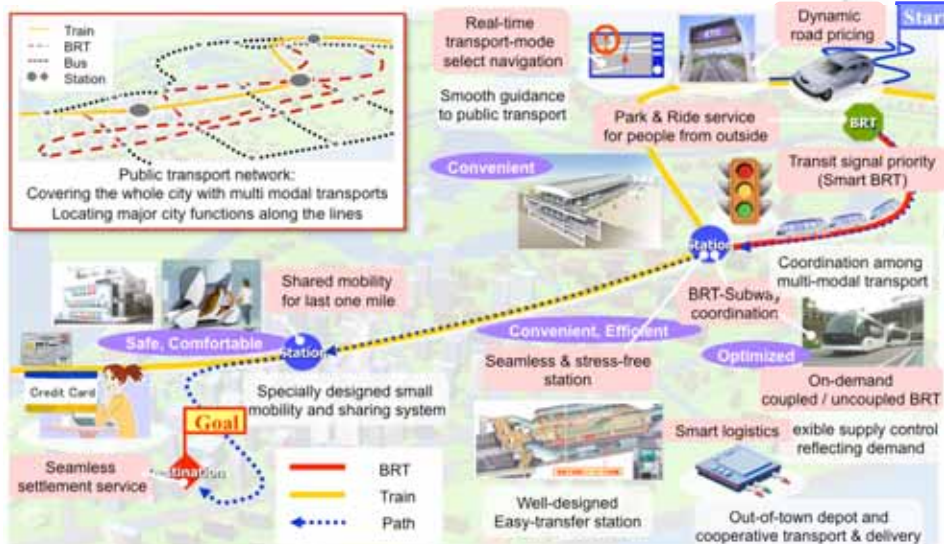
For customers to use vehicles without inconvenience or anxiety
A coordinated solution is required in line with social energy management

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Toyota's Urban Mobility Vision – Cross Modal Integration

20



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21

Toyota's Urban Mobility Vision – Whole Picture

User Needs		User and Social Needs		Social Needs
Inflow control reflecting traffic situation Solving traffic jam Administrative cost reduction	Smooth and mutual use of car and public transit Energy environmental load reduction Effective land use	Punctual and speedy public transit Solving traffic jam Comfortable and convenient traveling	Logistics with economic efficiency and low environmental load Effective land use Energy environmental load reduction	
Shared mobility service Administrative cost reduction Free traveling	City structure / Transport system <ul style="list-style-type: none"> Public-transport oriented intensive city Public transport and bike lane Inflow control 		Rush-hour-free comfortable traveling Administrative cost reduction Comfortable and convenient traveling	
Convenient last-one-mile mobility Comfortable and convenient traveling Free traveling 			Easy transfer points Comfortable and convenient traveling 	
Seamless settlement service Comfortable and convenient traveling Credit Card 	System design soliciting green city development Revitalizing city Administrative cost reduction	Total information service supporting safe, well-being, and comfortable traveling Comfortable and convenient traveling Solving traffic jam	User friendly support and reservation service Revitalizing city Social fairness	



Thank you for your attention

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