



ELECTRIC DRIVE TRANSPORTATION ASSOCIATION
**CONFERENCE
& EXPOSITION**

DECEMBER 2-4
WASHINGTON DC
CONVENTION
CENTER • USA

battery ◦ plug-in ◦ hybrid ◦ fuel cell

Nissan EV

EV Program details

Mark Perry

Director of Product Planning

Nissan Americas

Hosted By:

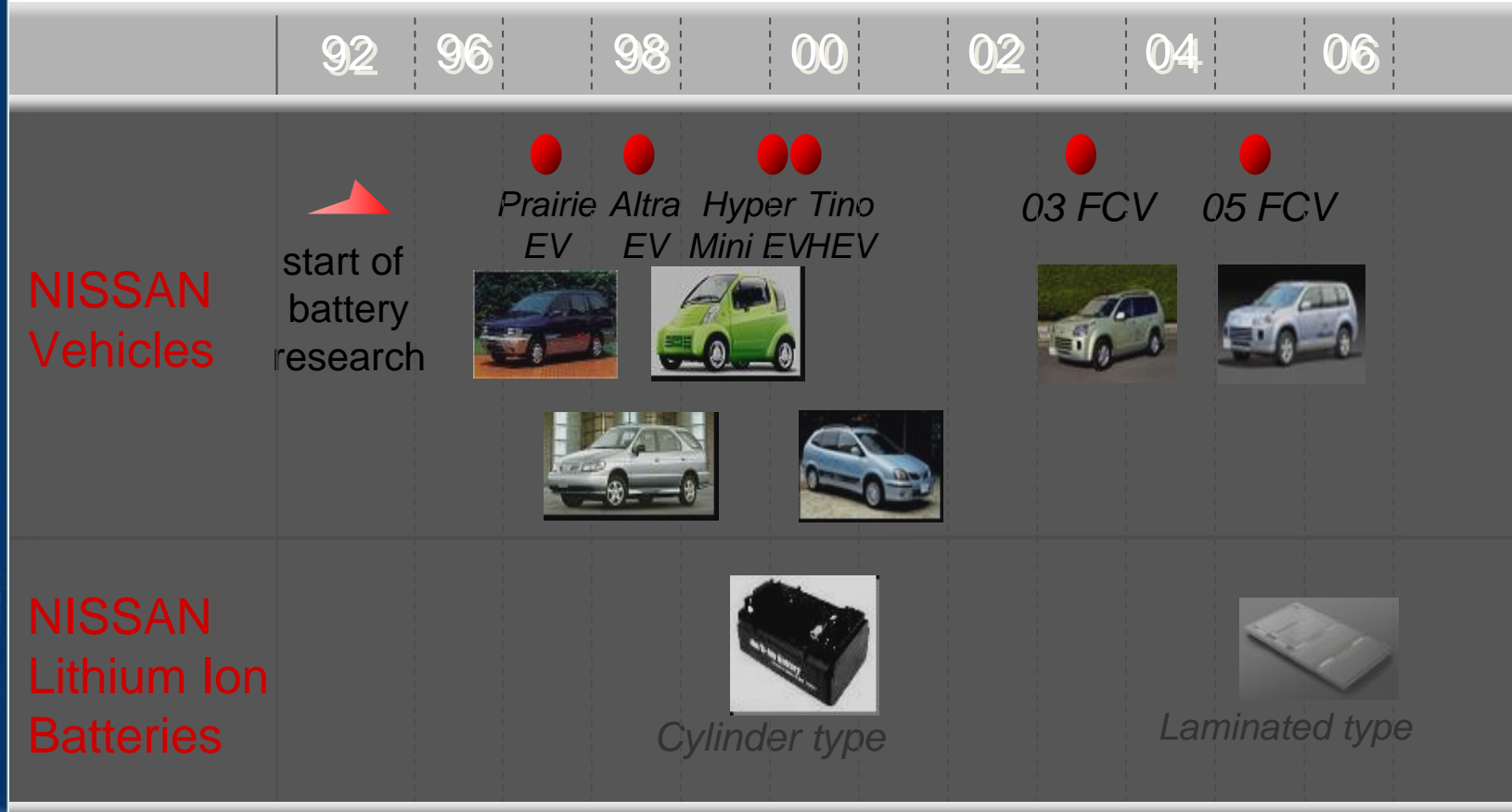


In partnership with:

SAE International

Nissan EV History

NISSAN has been conducting battery research since 1992. Past EV models include the Prairie EV, Altra EV, and Hyper Mini EV



Nissan-NEC Partnership

High power Li-ion battery technology for vehicle use

Laminated cell technology for Mn-type Li-ion battery

NISSAN

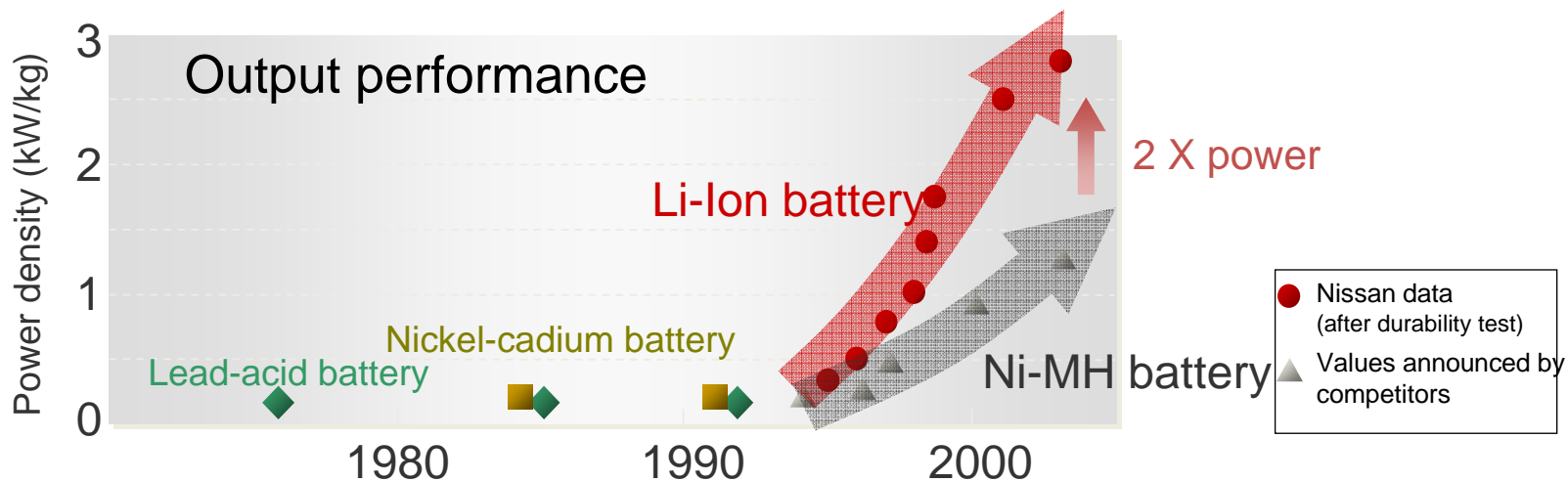


NEC



collaboration

Successfully developed laminated Li-Ion battery with over twice the performance



EV Program Overview

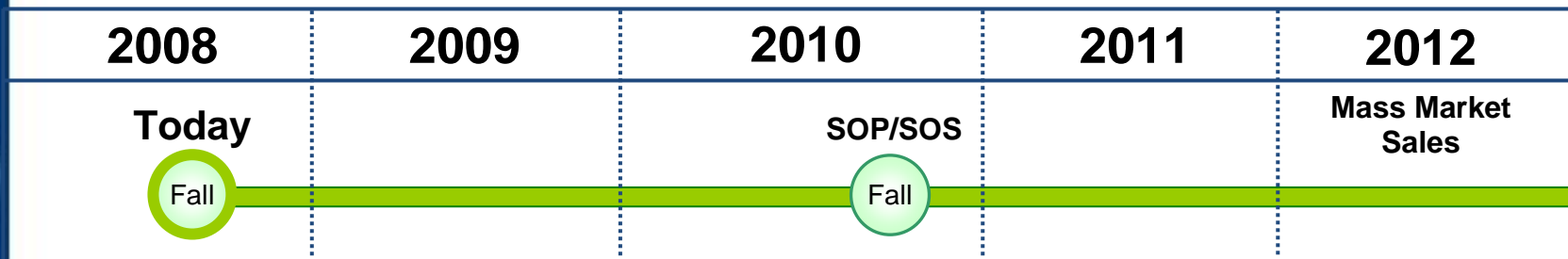
What is Nissan's Electric Vehicle?

- Zero Emissions
- Electric Drive-train Only - No Internal Combustion Engine - no gasoline used
- REAL: Compact-sized car with capacity and acceleration comparable to other cars in the segment
- Priced similarly to a conventional car
- A total cost of ownership advantage over comparable ICE
- Exploring possibility of a battery leasing program separate from the vehicle
- Will have 100 miles of range

EV Timeline

When will Nissan's EV be available?

- Nissan will partner with select public and private organizations to make EVs available for fleet/commercial use in 2010 and 2011
- EVs will be mass marketed to individual consumers by 2012
- Regionally, individual retail sales may begin as soon as 2010 if the infrastructure is ready



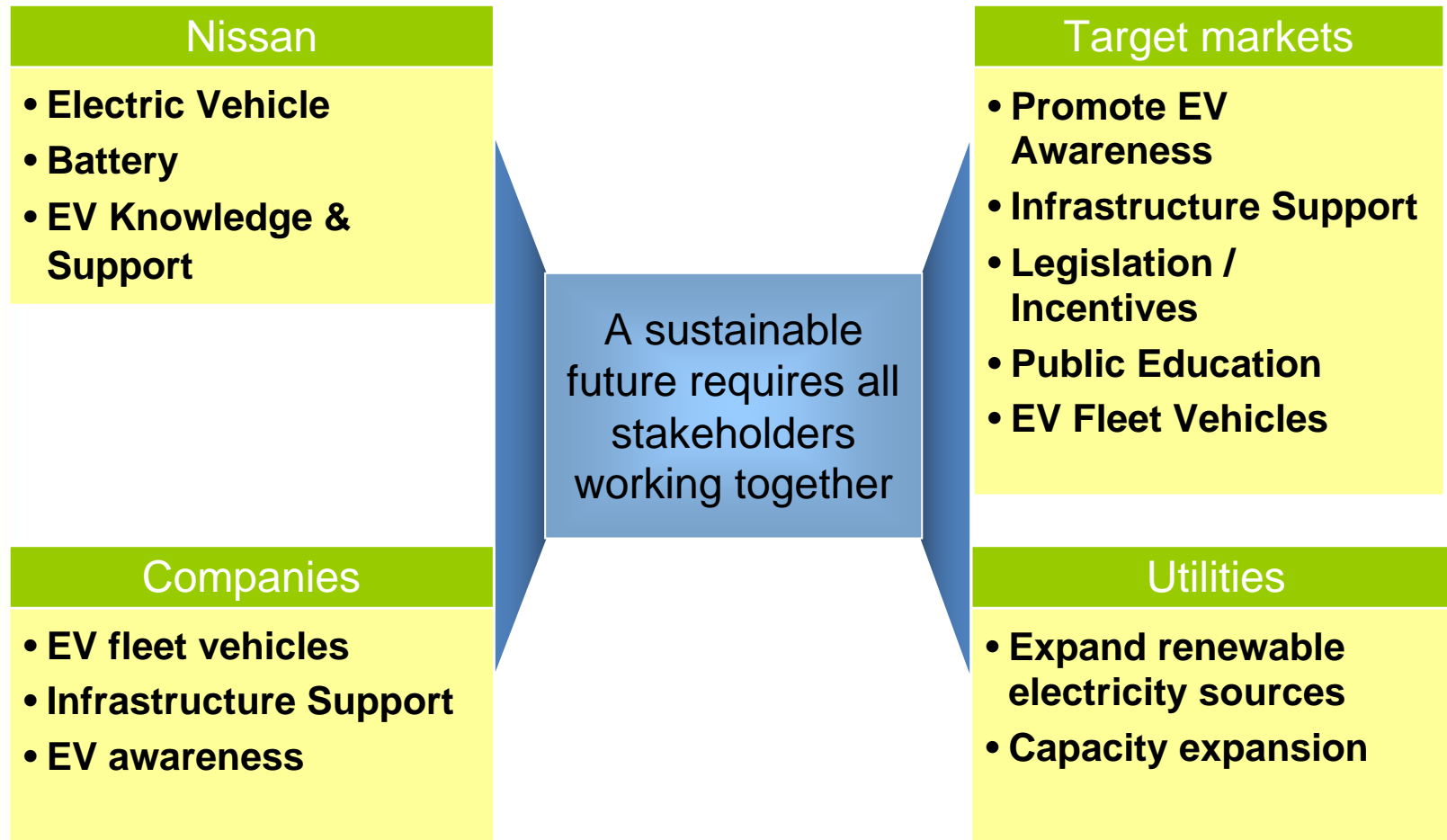
EV Distribution

Where will Nissan's EV be available?

- Any state or region that has or is willing to create appropriate infrastructure will be explored
- Selecting these early markets, not as a trial, but as real markets of opportunity.
- Criteria- favorable demographics, environmental mindset, public/private support and cooperative utilities able to work together on infrastructure rollout.
- Current partnerships include:
 - State of Tennessee
 - State of Oregon
 - Sonoma County
 - more to come...

Nissan Partnerships

We can ensure EV success by cooperating & leveraging e group's strengths.



What can you do?

What do I need to do to be ready?

- Ensure your house is prepared for 240v 30A+
- Understand your electric utility's peak and off-peak hours
- Encourage your state/local government to get involved. Infrastructure is key.

Example of home/public EVSE:



Hardwired EVSE
Voltage = 208V / 240V
Current = 32A cont.

Safety equipment
inside EVSE

Vehicle coupler
By YAZAKI
(SAE J1772)

Integrated
power and
signal line
cable

Customer Benefit

Benefits to the Consumer

- True zero emission vehicle
- Lower Total Cost of Ownership than a comparable internal combustion engine (ICE) vehicle
- Lower maintenance costs than an ICE vehicle (Less complexity, no engine, no oil changes)

Cost per mile comparison (15k miles):

Car (good 30mpg, \$4/gal)	=	\$0.13/mile - \$1,950/yr
EV (high \$0.14 kWh)	=	\$0.04/mile / \$600/yr

Electric Vehicle DOE MPG rating: 360 mpg equivalent*

Thank you



Appendix



480V Fast Charging

Standards incomplete but in process

No installed infrastructure yet

Hardwired Supply
Voltage = 480V / 600V
3phase
Power = 30-250 kW

Safety communications with vehicle not standardized

Vehicle coupler Not standardized

Integrated power & communications cable

