



Integrated Urban Mobility Solutions: Regional Importance of Electric Vehicles and Sustainability to Transportation

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Sustainable Mobility

From Our Executive Chairman...

“Improved sustainable performance is not just a requirement, but a tremendous business opportunity.”

- *Bill Ford*



Our vision for the 21st century is to provide SUSTAINABLE transportation that is affordable in every sense of the word:

Environmentally, Socially & Economically

“Three Legs” of Sustainability



Environmental

- CO₂
- Water

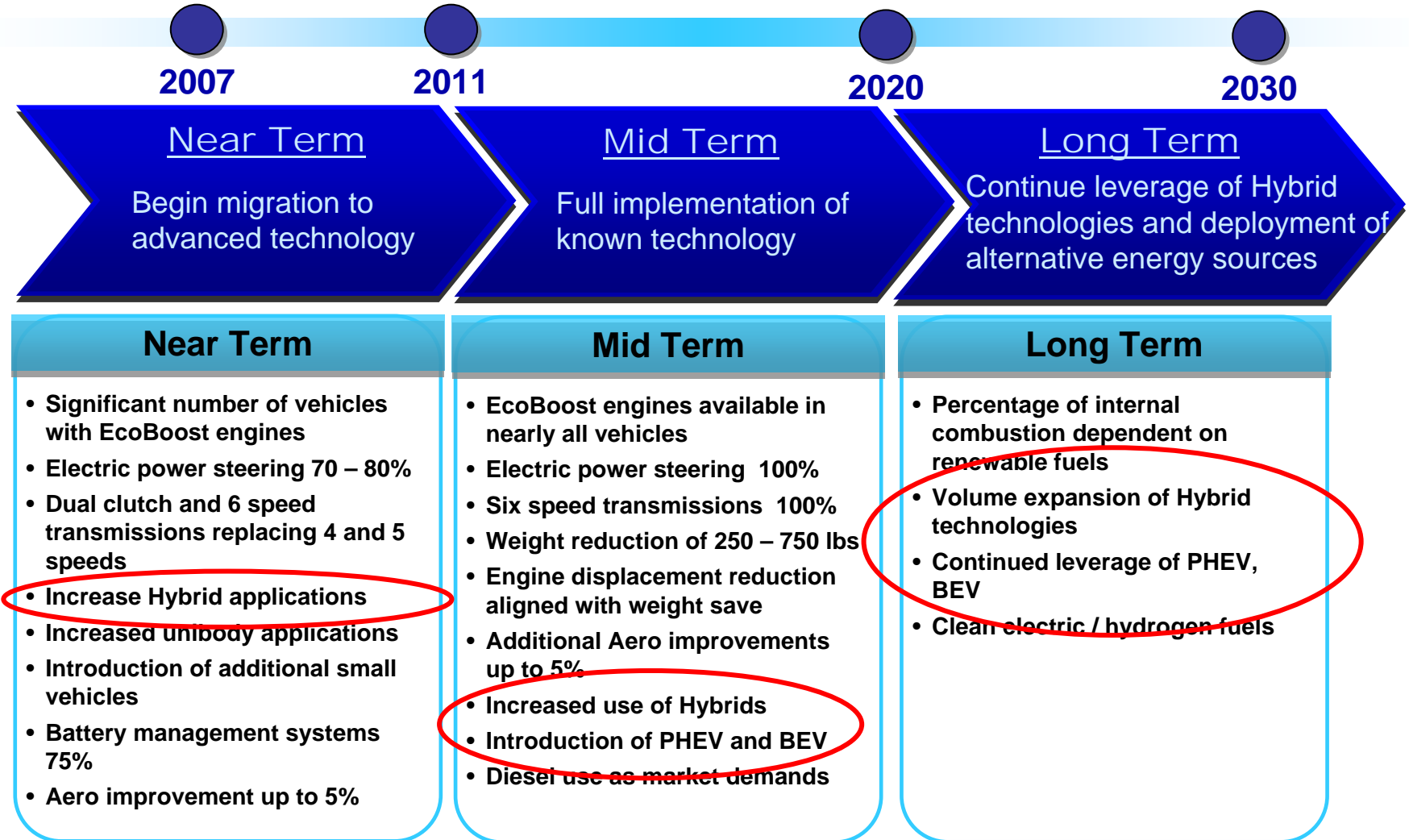
Social

- Working Conditions
- Urban Mobility

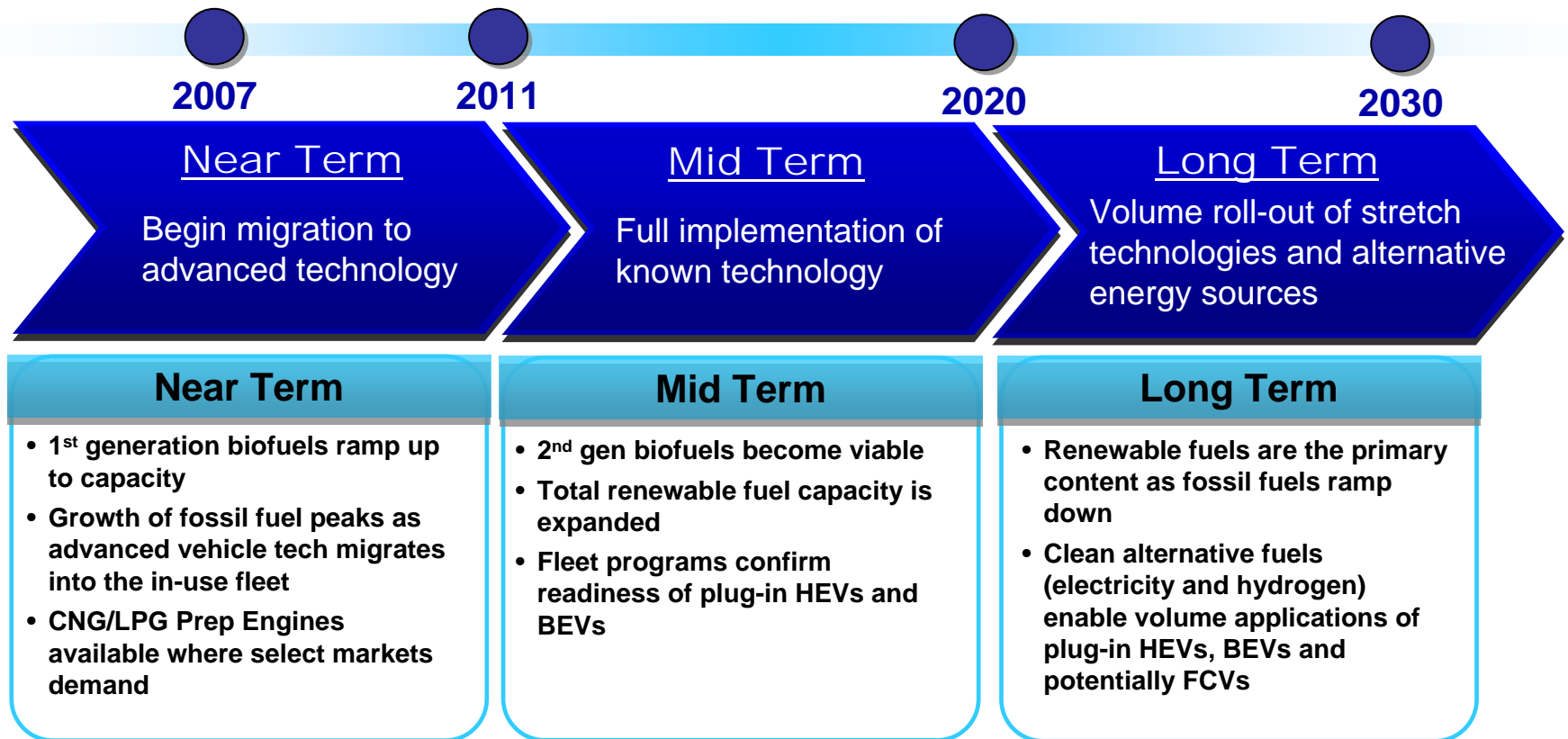
Economic

- Profitability
- Cash Flow

Sustainability Strategy – Technology Migration



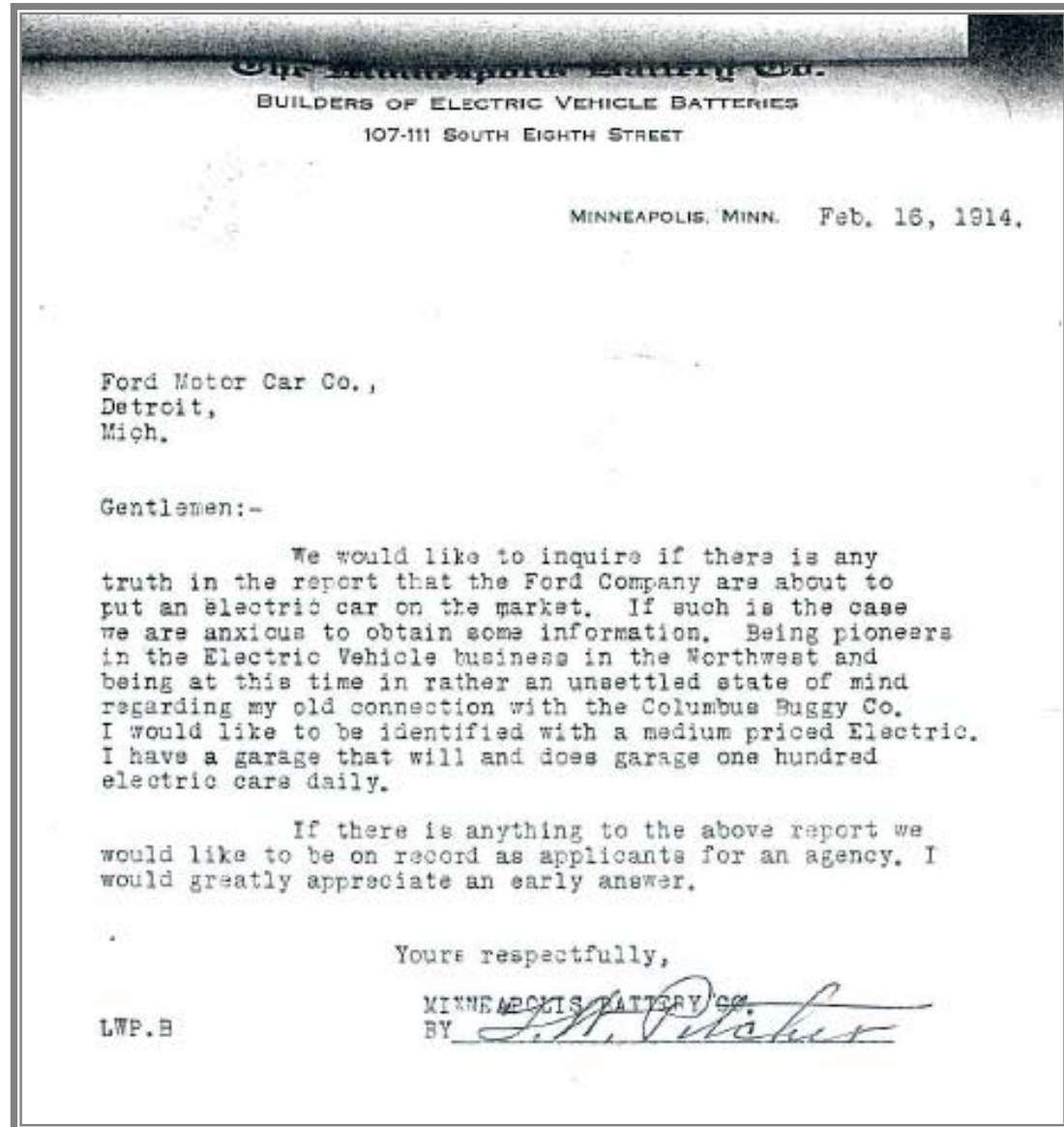
Technology Migration for Fuels





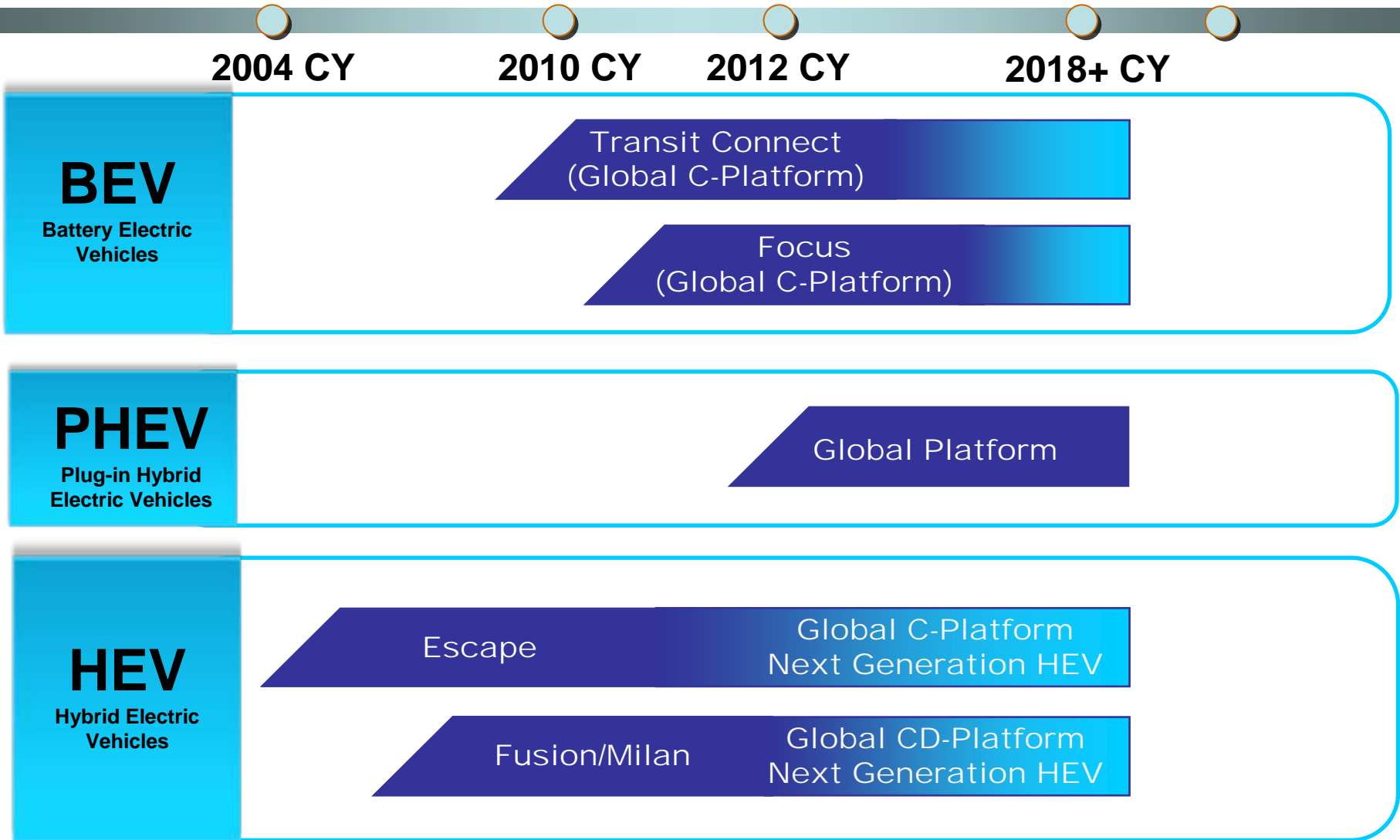
Electrification of vehicles: not a new idea

- In the early 1900's more than 27 companies were building electric cars
- In 1914, Henry Ford and Thomas Edison experimented with an electric car using by Edison Batteries
- In 1915 the Ward Motor Vehicle Company offered an electric wagon for \$875 on an 1yr installment plan for the vehicle and a \$10.50/month rental fee for the Edison Storage battery





Announced Ford Electrification Projects:





2011

Mid Term

2020



TRANSIT CONNECT BEV 2010



2011

Mid Term

2020



PASSENGER CAR BEV 2011



2011

Mid Term

2020

GOAL

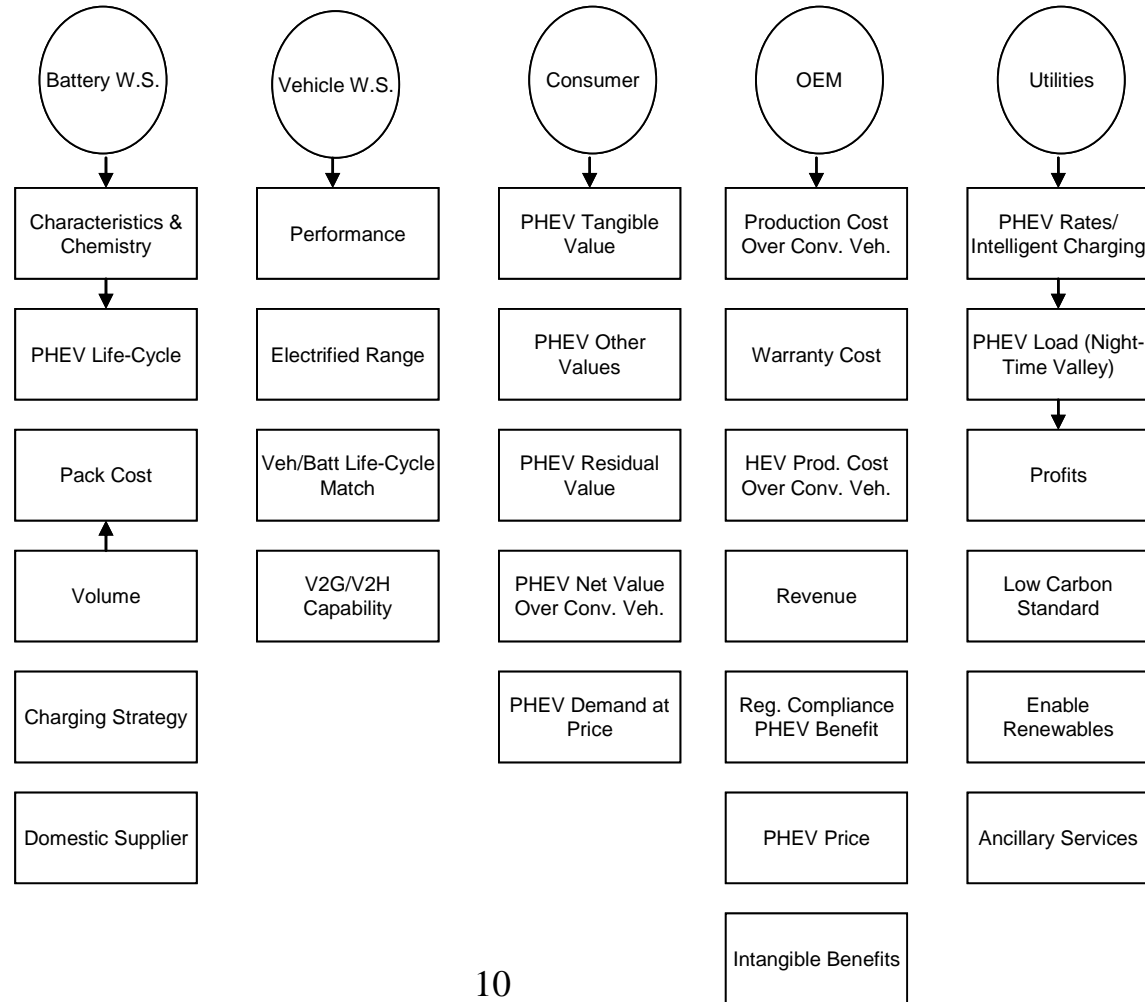
PRODUCTION PLATFORM NOT YET ANNOUNCED
EARLY/DEVELOPMENT WORK WAS DONE ON
THE ESCAPE

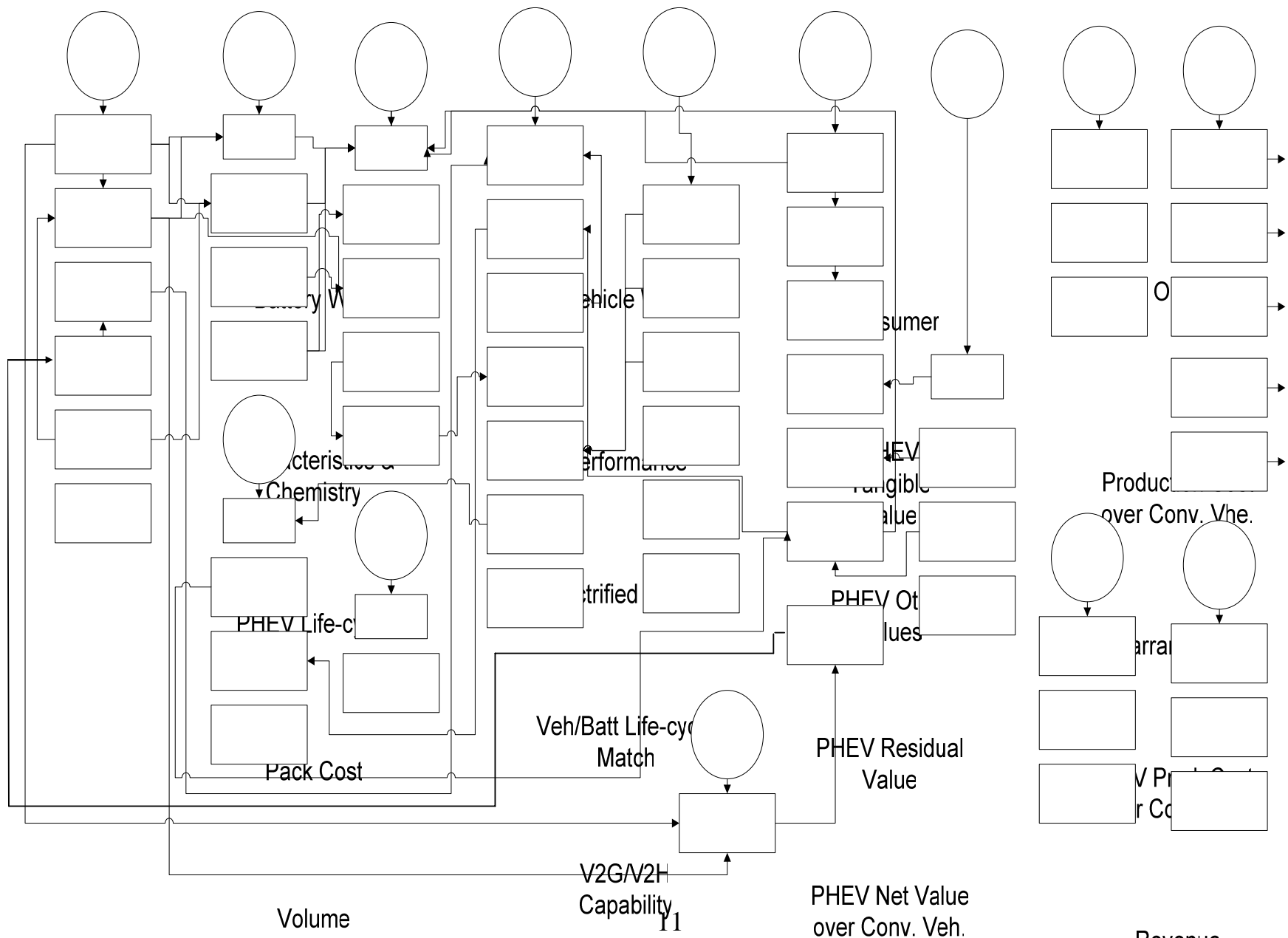


PLUG-IN HYBRID 2012

Understanding the Business of Electrification

One of the PHEV collaboration goals is the creation of new business models to support a sustainable business case for all PHEV stakeholders



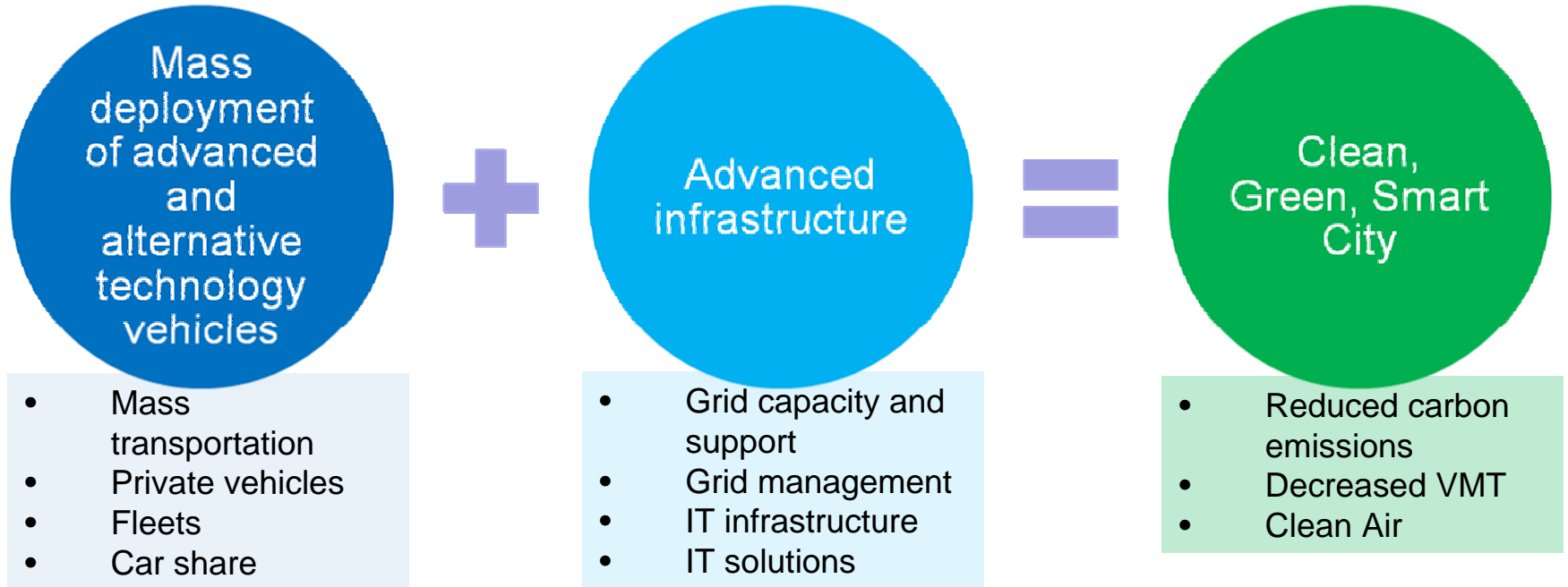




The Key is Partnerships



A Sustainable Future



*There will be a convergence of technologies and industries
Collaboration and leverage from manufactures, energy/utility
companies, IT, and business will occur
Transportation and utilities will become interdependent*



- Increasing resource costs, and urbanization and congestion will cause customers to change purchasing behavior and explore other means of transportation
- Climate change and associated regulation will lead to new vehicle standards and increased costs
- Shifting demographics and social inequality will lead to increasingly diverse and fragmented markets
- Since 2005, Ford has worked with a wide range of academic and public and private sector partners to explore sustainable mobility issues, advance thinking and catalyze on-the-ground projects to test different approaches to urban mobility.
- We believe that creative collaboration and innovative technologies and services can yield new solutions and reduce its environmental and social impacts
- Customers are not only looking for improved fuel economy. They are exploring alternative powertrains and uses of personal vehicles
- We've learned that information technology shows promise for overcoming barriers to integrated urban mobility systems that rely on multiple modes of transportation seamlessly tied together.



Why Ford?

- Ford wants to understand America's urban commuters. We will collaborate internally and with utilities, municipalities, universities, commercial fleets, retail early adopters, and public and private companies to design integrated multi-modal systems, including electric vehicles
- Stakeholder engagement is a major part of our overall strategy
- We are the industry leaders in sustainability efforts
- Opportunities for proactive engagement/partnership with a wider range of influential and innovative stakeholders and entrepreneurs
- Opportunity to provide greater value to customers and to society, through products and services working seamlessly together
 - Urban markets are unique-- New York City has more in common with Bangalore than Wyoming, and no two urban regions are alike
 - More than half the world's population now lives in cities, especially in large, emerging-market megacities where personal, traditional vehicles are more likely to be restricted.

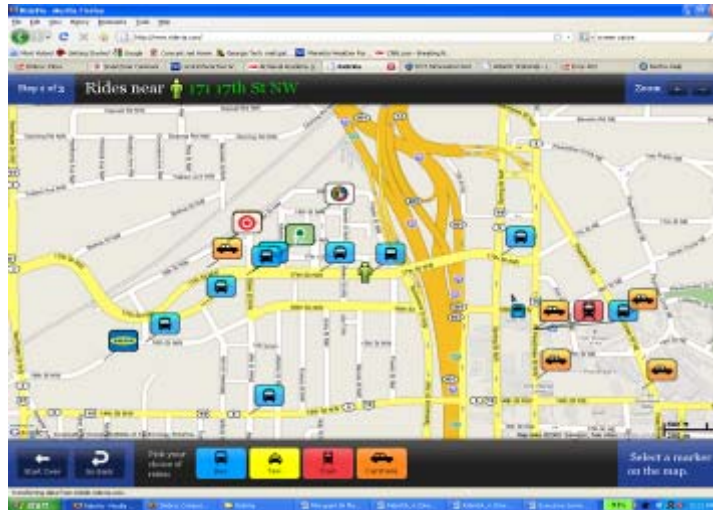


CONCEPTUAL VIEW
**SOUTH KIRKLAND
TRANSPORTATION HUB**

CASCADIA
WWW.CASCADIAPROJECT.ORG

© 2008 J. Craig Thayer Commissioned by Cascadia Center

- SHOWING:
- Seven 2-car Diesel Multiple Unit (DMU) Train
 - Monthly "Commuter" Service
 - Sea-Tac Express Motor Coach
 - Advance Airport Check-in Service
 - People Hybrid Electric Vehicle Stalls
 - Zipcar Parking
 - Adjustable solar panels (on south side of canopy)
 - Video Conferencing and Telework Center
 - Typical Retail Vendors



Communication Pathways



Benefits

- To citizens:
 - Strong relationships, robust partnerships will increase job creation
 - Portfolio of choices for the citizen will increase riders in all forms of urban transit
 - Increased riders accelerate economies of scale and reduce operating costs
- To municipalities:
 - Urban planning for re-fueling/charging infrastructure
 - Ability to target fleet/retail vehicle strategies to best align with their regional needs/priorities
 - Ability to measure benefits of VMT reduction strategies to meet anticipated future highway reauthorization requirements
 - Ability to more accurately measure CO2 emissions – from transportation and stationary sources – to support reduction efforts (future Cap and Trade, Highway Reauthorization, Grant funding and Carbon Trading).



Ford: A trustworthy partner

- Ford Motor Company has long recognized that treating people with dignity and respect is fundamental to how we conduct business around the world.
- 2003: Implementation of the Ford Code of Basic Working Conditions— the code covers workplace issues such as working hours, child labor and forced labor. It also includes provisions on community engagement, relationships with indigenous populations, strategies to prevent bribery and corruption, and strategies to protect the environment and promote sustainability.
- The first company in the industry to develop its own code, and the only company to train, assess, audit and remediate among its first tier supply base.
- 2008: Only automaker and heavy manufacturer in the Global Compact Human Rights Working Group
- 2008: Received a perfect 100 on the Human Rights Campaign Corporate Equality Index.
- 2010: Ranked number one globally, for all industries in Human Rights in the Corporate Responsibility Officer (CRO) Magazine 2010 Best 100 Corporate Citizens List
- Founding Responder of the Water Disclosure Project

Ford's green portfolio

- Technology portfolio strategy by raising awareness of not only our electrified products, but also our HEV, alternative fuel and improved fuel efficient ICE technologies, and includes:
 - Commitment of BEV/PHEV vehicle availability in the region.
 - Identification of necessary electrification infrastructure footprint (how many plugs, what kind, and where).
 - Provide guidance on infrastructure standards and protocols.
 - Provision of tools to accurately assess regional VMT, including identification of congestion hot-spots.
 - Provision of tools and IT "cloud" to best determine key "hub" opportunities to best link transportation modes to optimize mobility and accessibility as well as other connectivity solutions, such as route planning.
 - Provision (sale) of technologies to best meet region's needs: fuel efficient, HEV, AFV (ethanol, CNG, LPG) and plug-in.
 - Annual seminars with local government officials and local businesses to share Ford's best practices in stationary efficiency, water management and human rights.

Conclusions

- Electric vehicles – in many shapes and flavors – are coming; we need to make sure the market is ready for them.
- We need to focus on our common customer, working together to ensure they are comfortable with the new technology.
 - It has to be easy: access to infrastructure where they need it, and where they want it
 - Good communication about rates and options.
 - An understanding of what EV technologies are: PHEV, EREV, BEV, HEV
 - Ability to pick the best technology for their needs and personal goals.
 - Foreknowledge of future charging needs.
 - Streamlined permitting processes.
- Moving forward we need to continue working together:
 - To get costs down,
 - Car companies and utilities need to work together to identify potential hot-spots – clustered demand that may cause infrastructure challenges.
 - We all need to work together to provide the education and outreach to educate the market.