

ev ecosystems

Market deployment of
hybrid & electric vehicles



Technology Portfolio Issues: Smart Cities
Eskom Megawatt Park, Sandton, S.Africa
6th July 2011

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Operating Agent Task XVIII

IEA Implementing Agreement Hybrid & Electric Vehicles

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IEA INTERNATIONAL ENERGY AGENCY



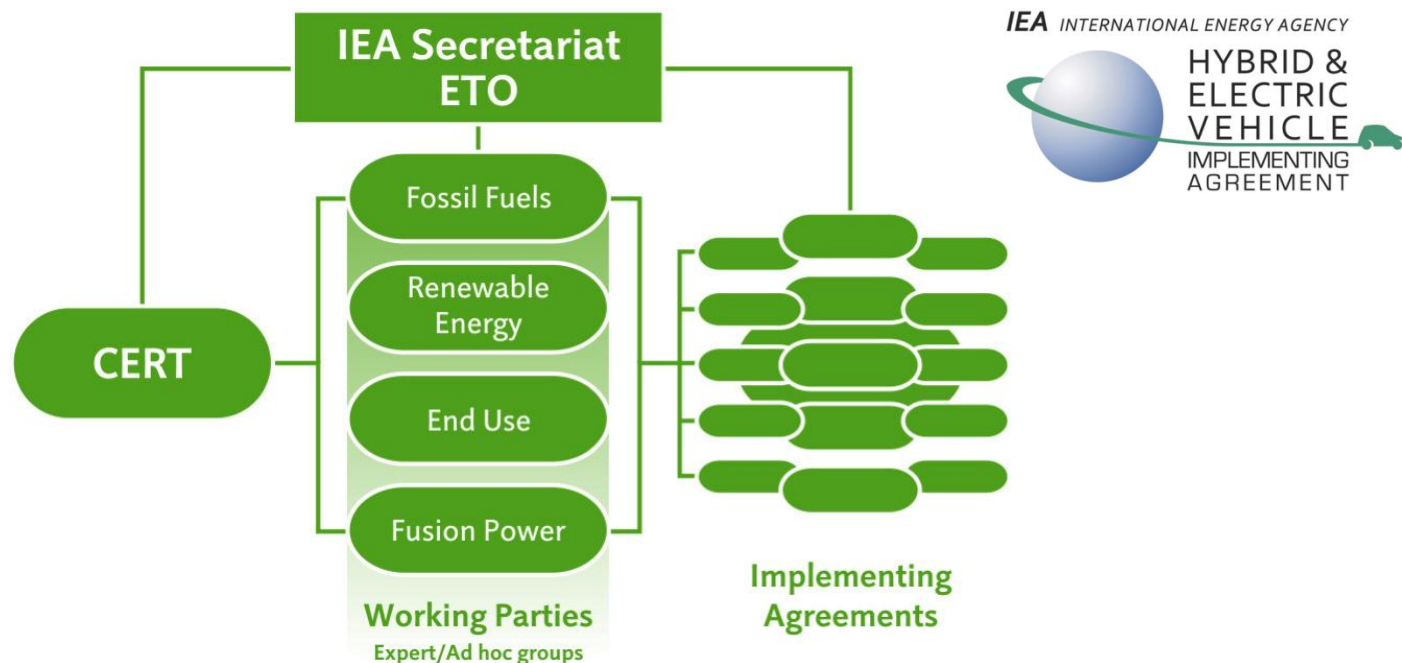
Structure of Presentation

1. IEA Implementing Agreement on Hybrid & Electric Vehicles
2. EVs in a Smart City Context
3. EV Ecosystems: Preparing for Mass Adoption of EVs
4. Emerging Challenges in Creating EV Ecosystems
5. A Big Question for EVs in Smart Cities

Implementing Agreement Hybrid & Electric Vehicles

IA Hybrid & Electric Vehicles

- IEA has 42 different technical collaboration-programmes dealing with a variety of energy related issues, including hybrid and electric vehicles (IA-HEV).



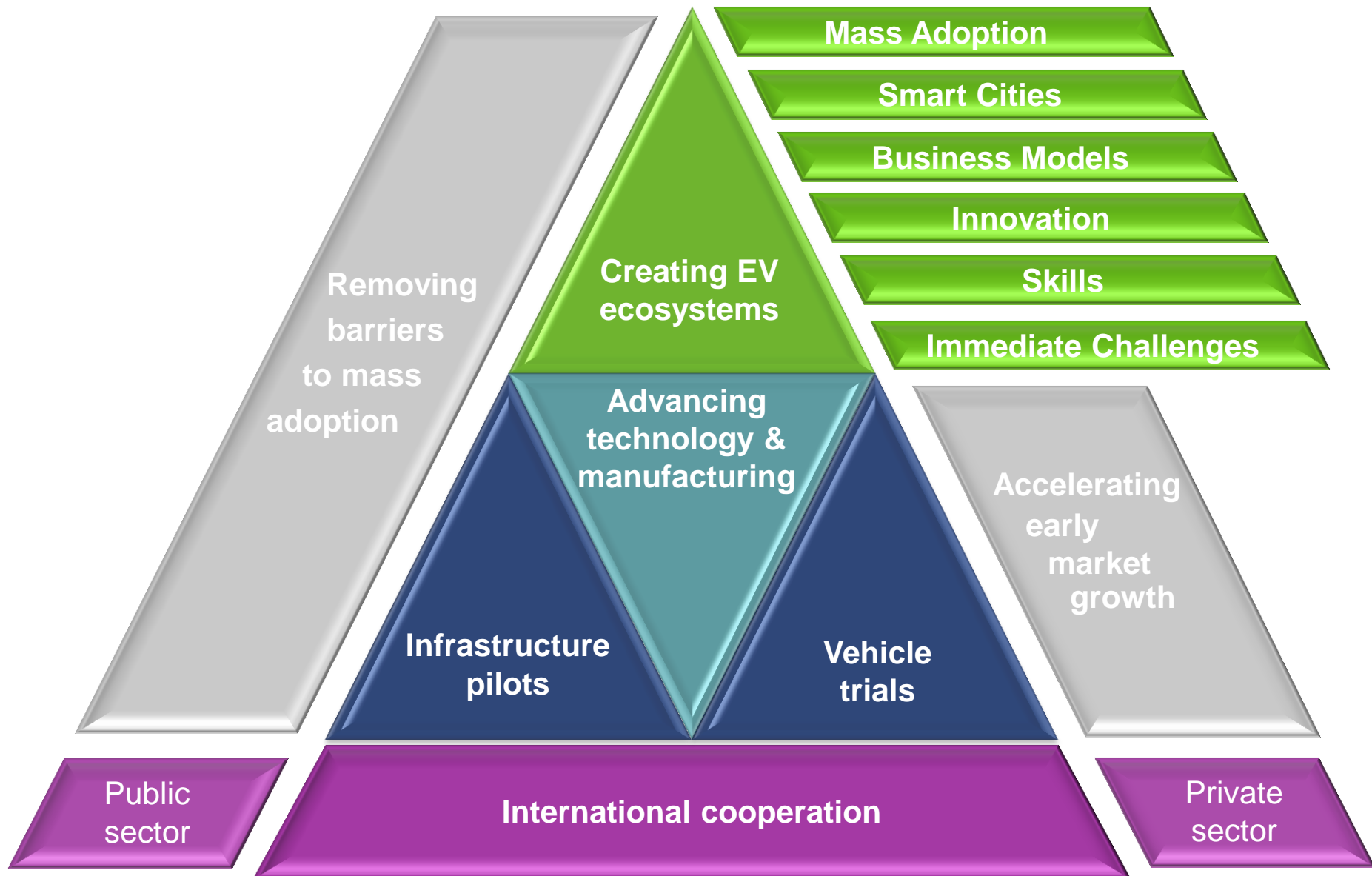
- IA-HEV is a working group of 15 governments interested in advanced vehicle technologies and applications of hybrid and electric vehicles

Austria, Belgium, Canada, Denmark, Finland, France, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, USA

IA-HEV Task Forces (1994-2011)

- Information Exchange (Task I)
- Environment Issues of EVs and components (Task II)
- Infrastructure of electric vehicles (Task III)
- Batteries and super capacitors (Task V)
- Hybrid Vehicles (Task VII)
- Deployment Strategies (Task VIII)
- Clean City Vehicles (Task IX)
- Electrochemical Systems (Task X)
- Electric cycles (Task XI)
- Heavy-Duty Hybrid Vehicles (Task XII)
- Fuel Cell Vehicles (Task XIII)
- Market Deployment – Lessons learned (Task XIV)
- Plug-in Hybrid Electric Vehicles (Task XV)
- Technology Alternatives for buses (Task XVI)
- BEV system integration and optimization (Task XVII)
- EV Ecosystems (Task XVIII)

North East England EV Programme



Smart Cities



For the first time in human history more people live in cities than in rural areas

Over the next 20 years the urban population will grow from 3.5 billion to 5.0 billion

The social, environmental and economic challenges of this transformation will shape the 21st century.

Opportunity:

- **Improve the lives of citizens**
- **Limit the impact on the environment**



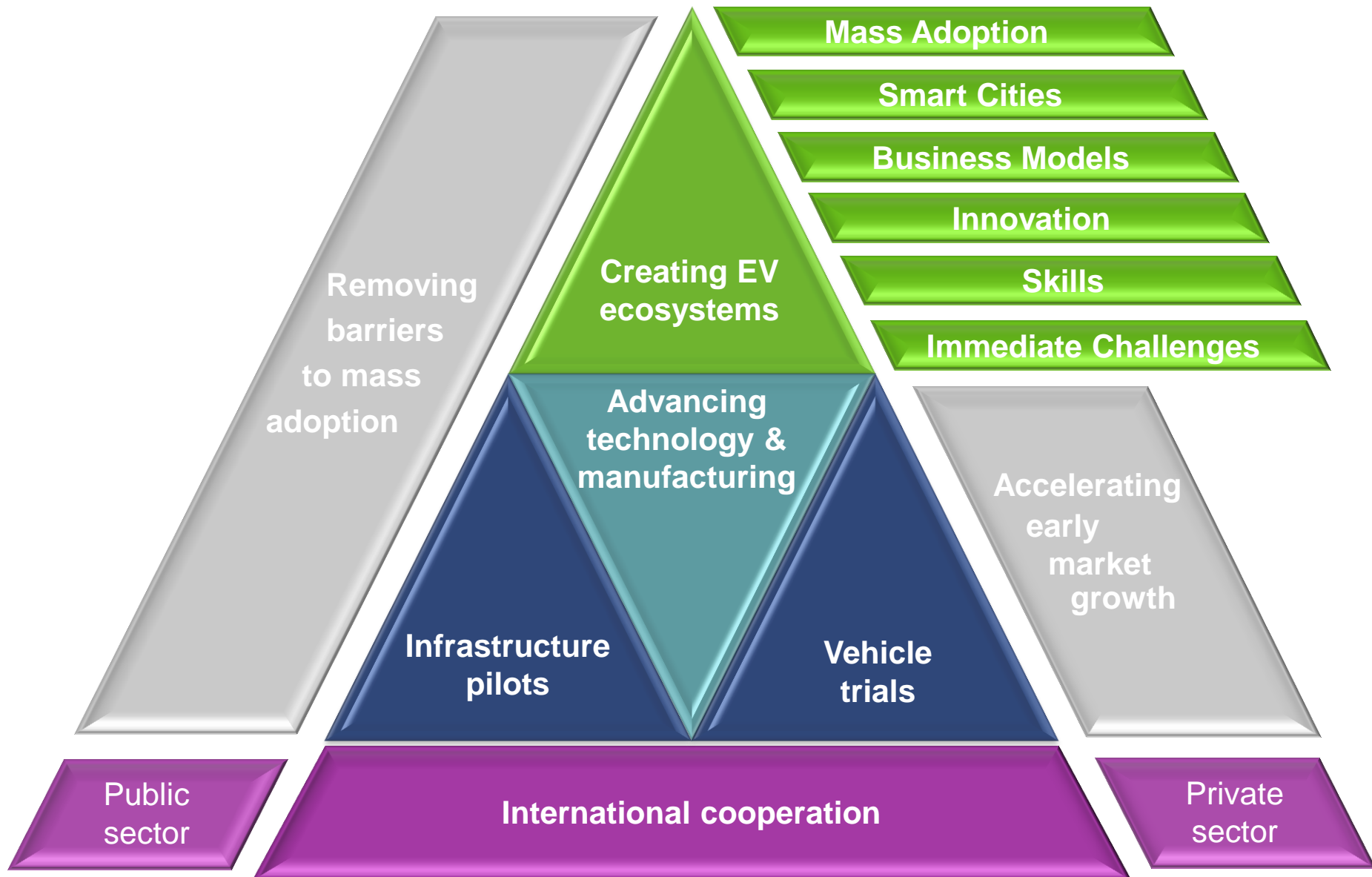


For the last 100 years the car has shaped the future of cities

Now cities will shape the future of the car

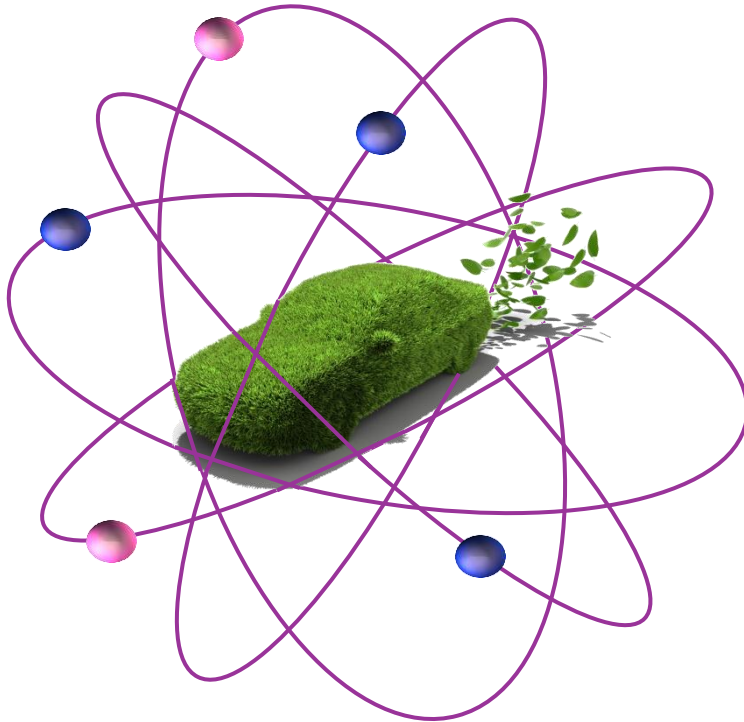
EV Ecosystems

North East EV Programme



EV Ecosystems

- 'Total environments' to support operation of thousands of vehicles



- 'Hard Infrastructure'

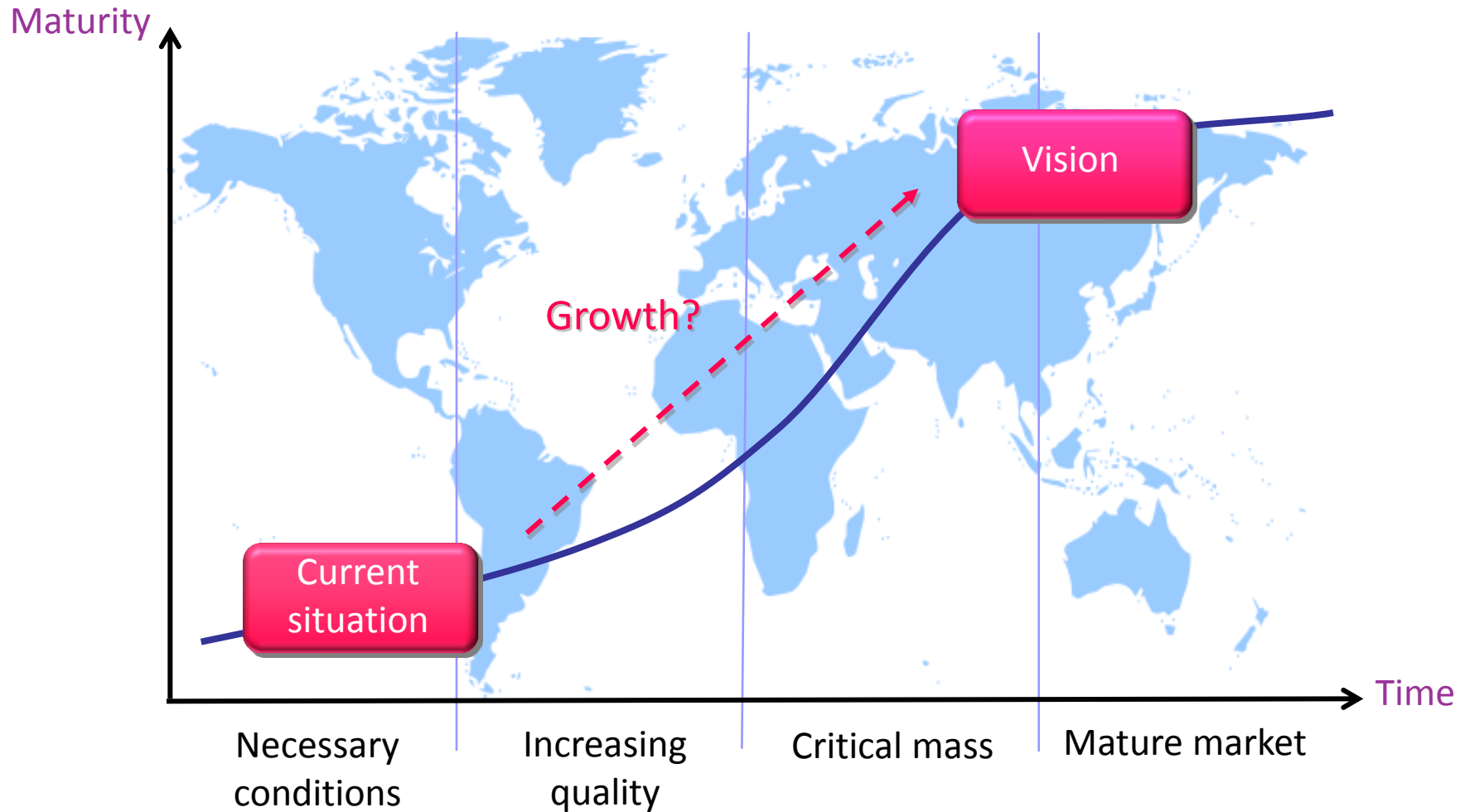
e.g. recharging points, smart grids, buildings, transport systems

- 'Soft Infrastructure'

e.g. regulation, business models, incentives, skills, community engagement

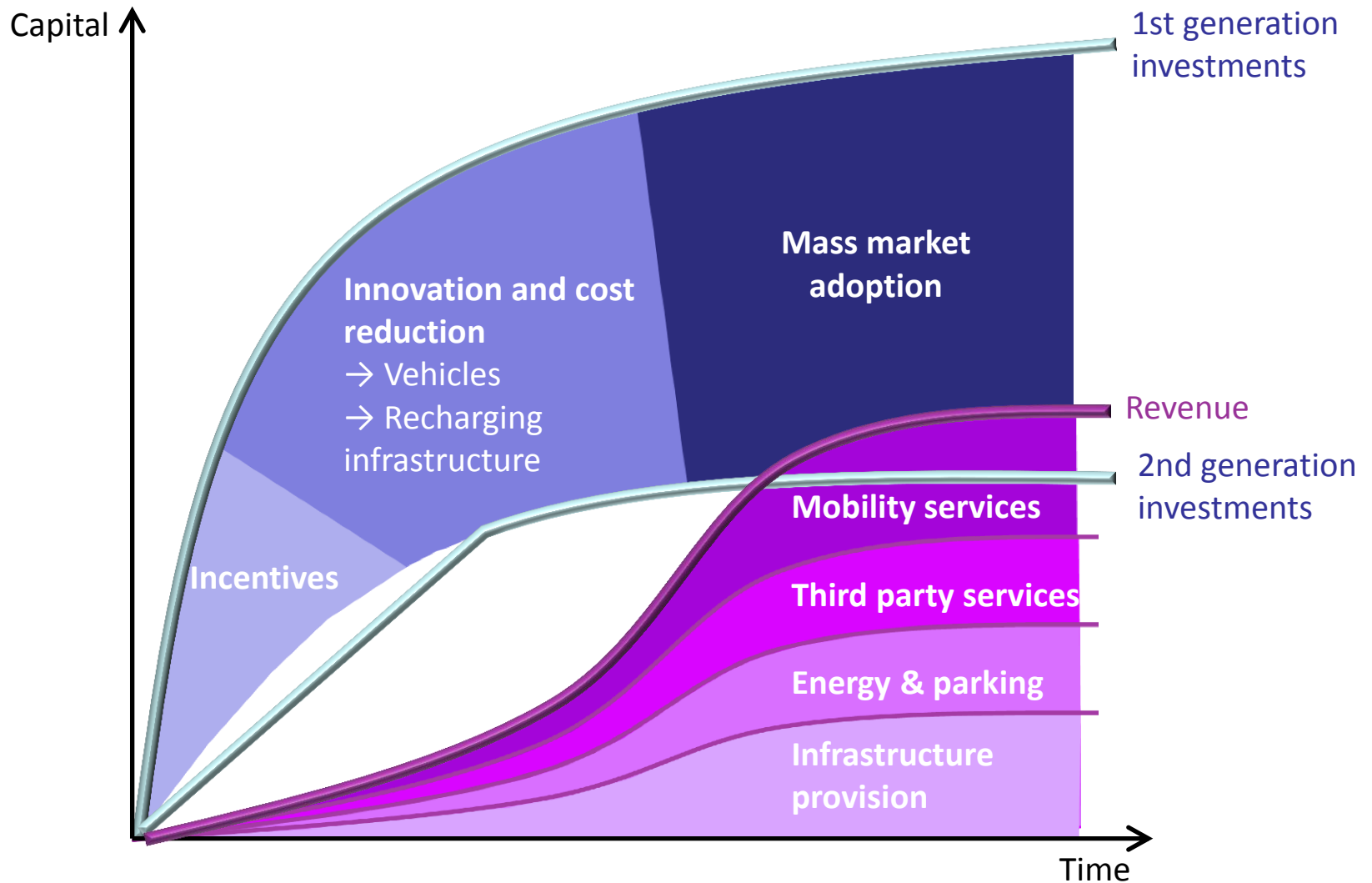
EV Ecosystems

- Creating conditions for growth to mass market adoption of EVs



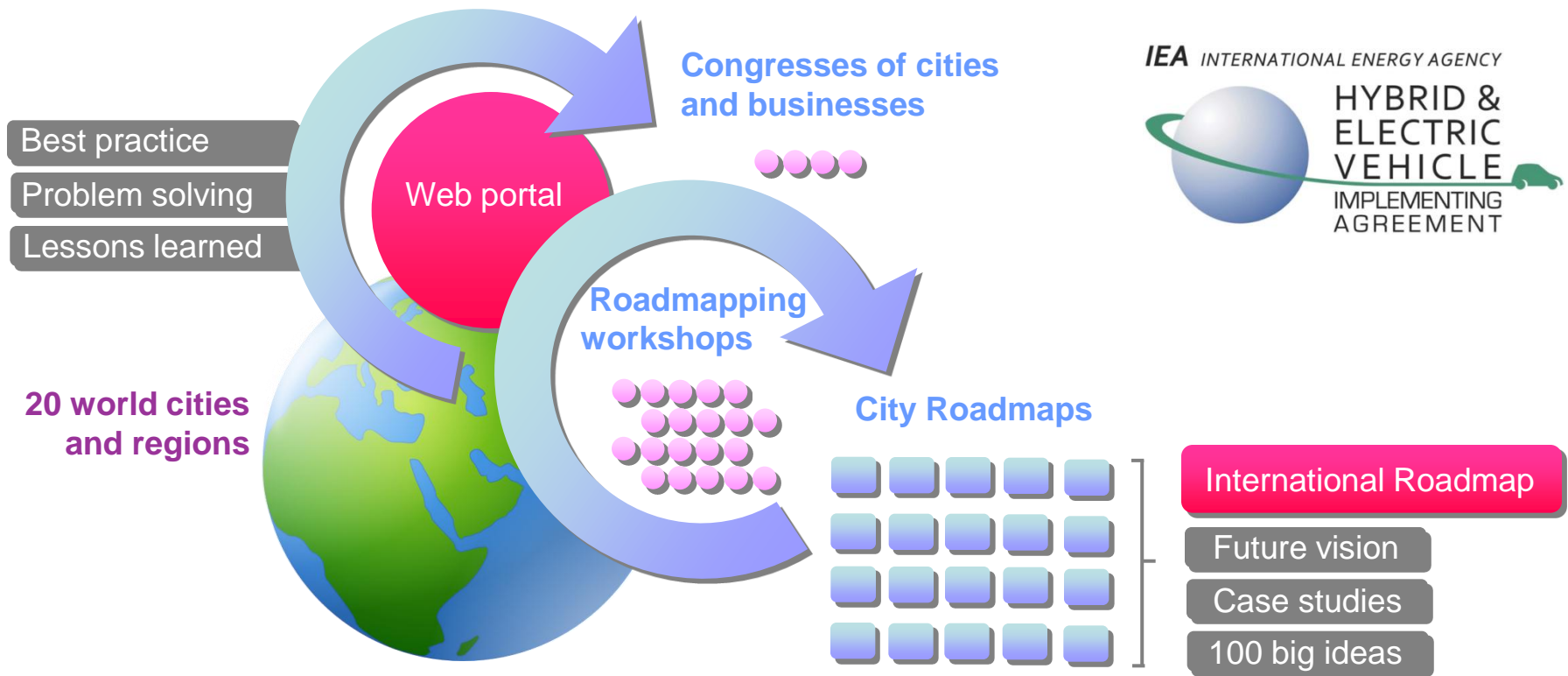
EV Ecosystems

- What comes after the pilots?



Task XVIII: EV Ecosystems

Preparing World Cities for Mass Adoption

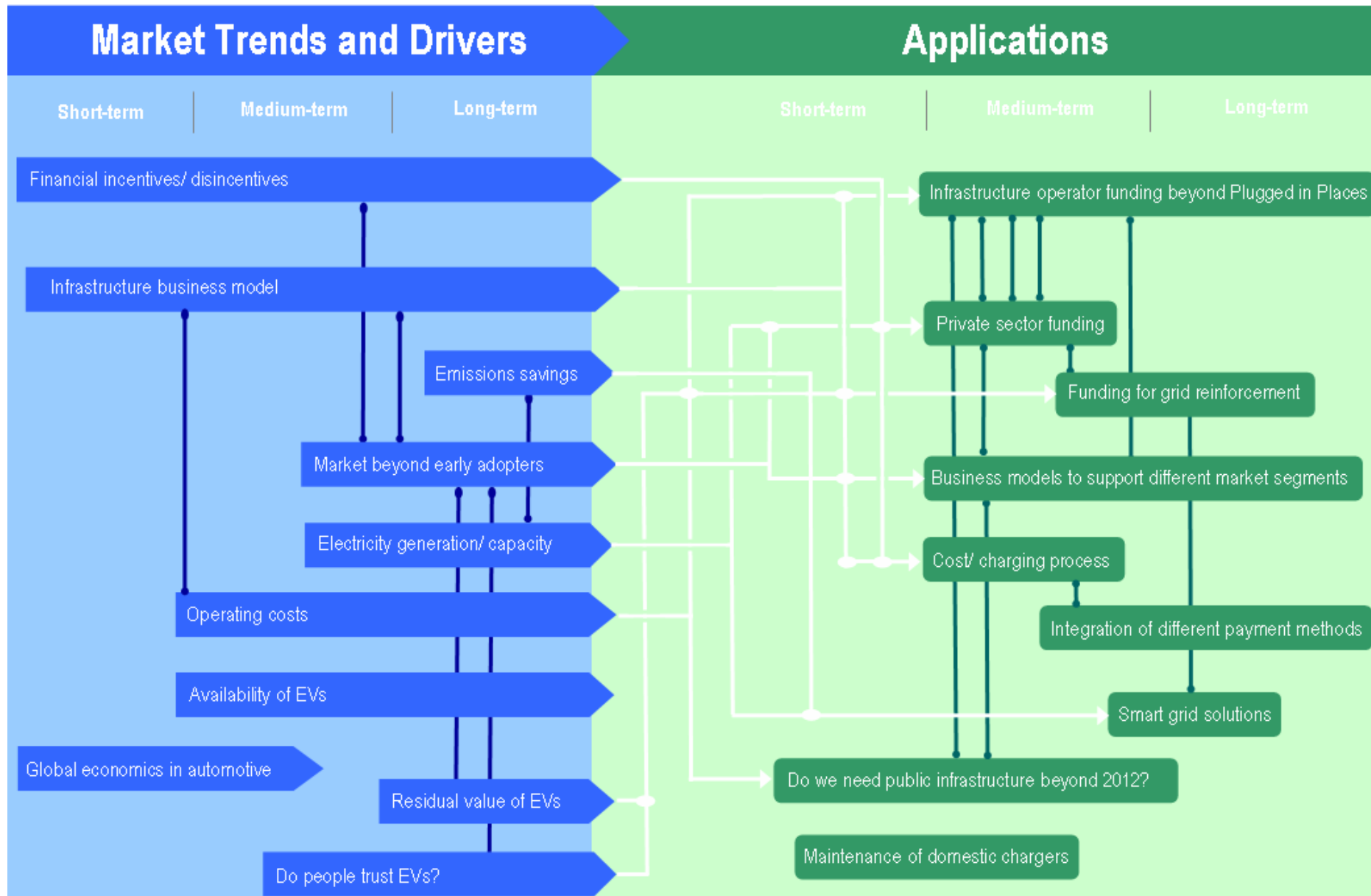


- **Roadmapping workshops** in 20 pioneering world cities, assembling experts from municipalities, regional authorities, governments and industry
- **International Roadmap** will establish a blueprint for development of EV Ecosystems
- **A global community of pioneering cities** for policy exchange and problem solving

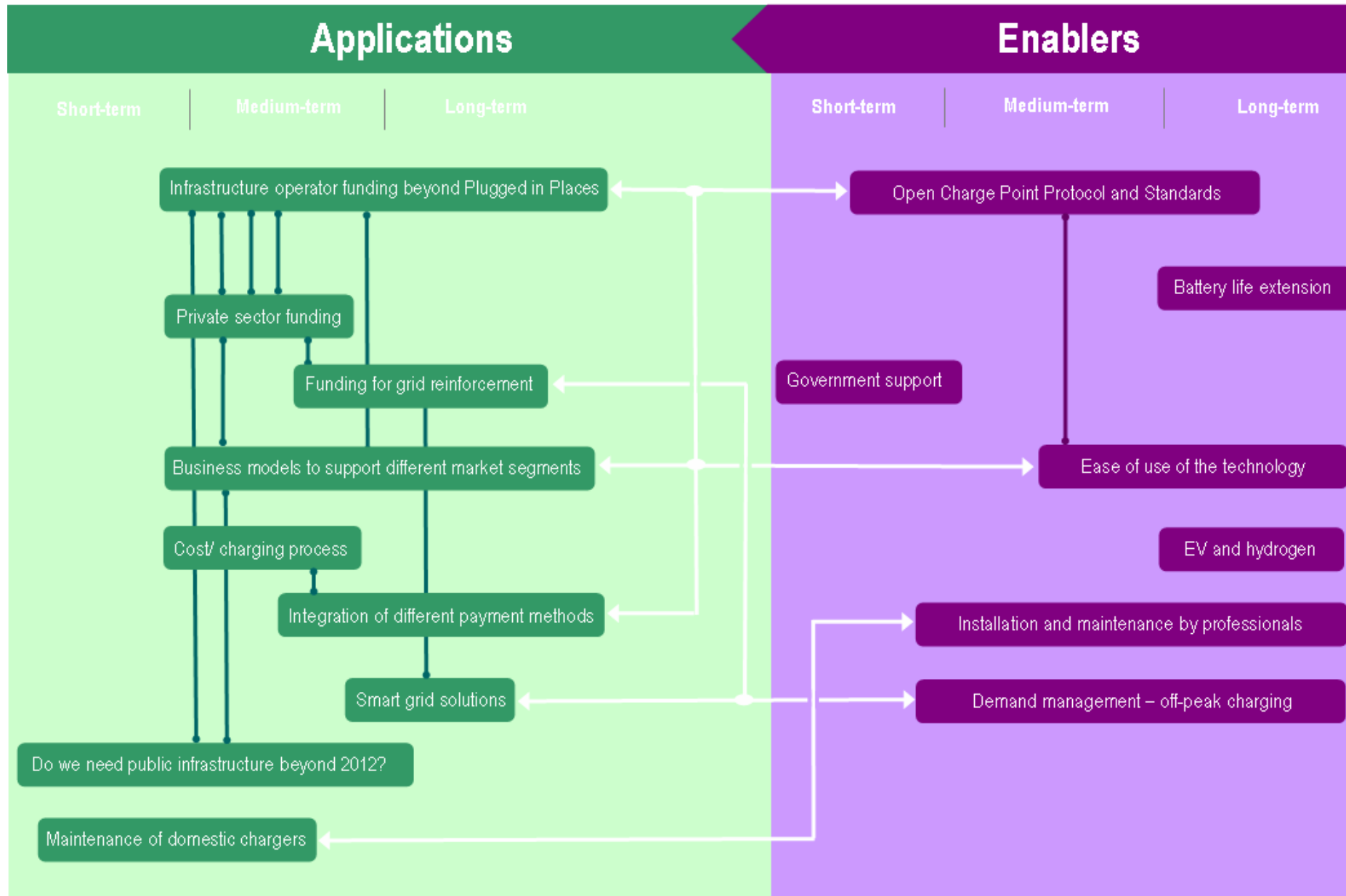
Engaging Total Value Chain



Outputs: High Level City Roadmap

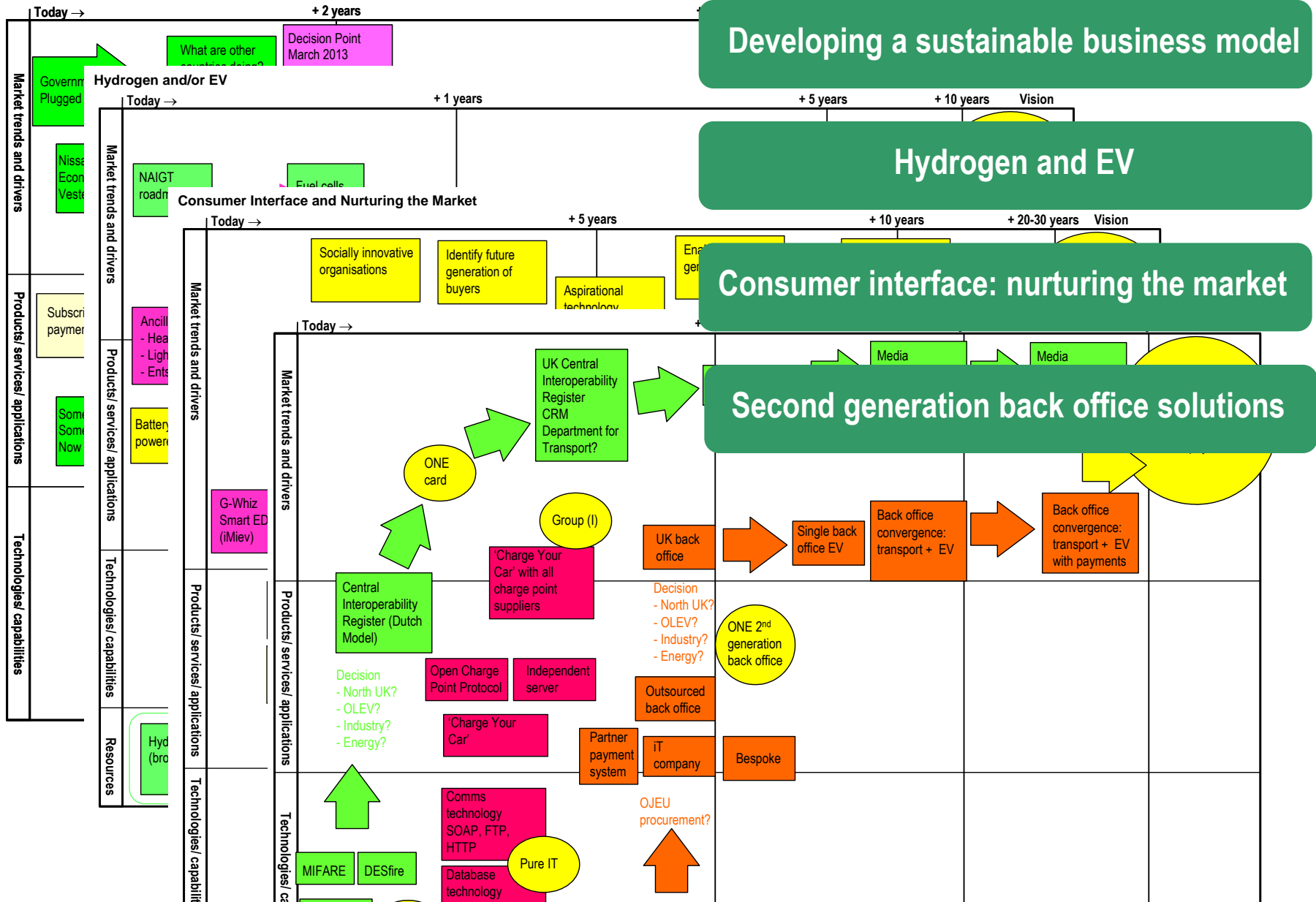


Outputs: High Level City Roadmap



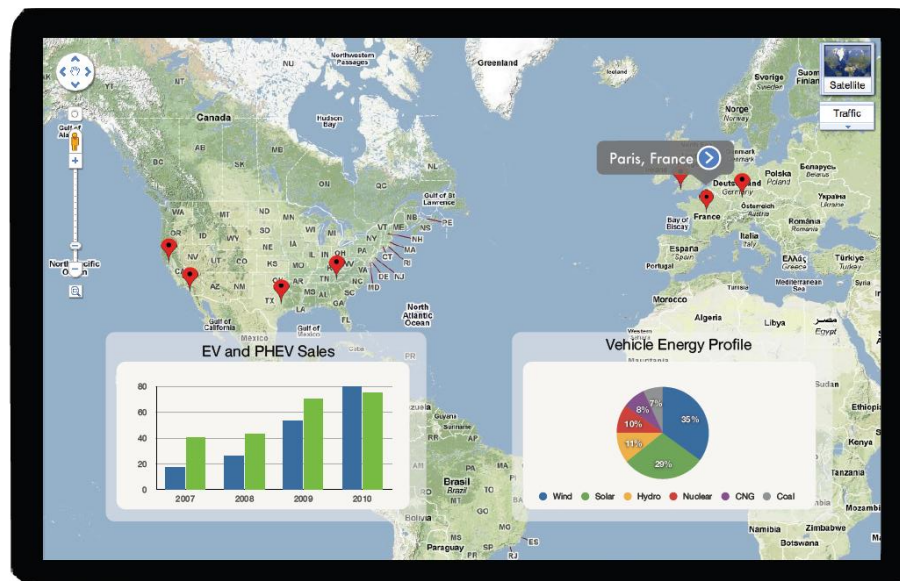
Outputs: 'Scenario Roadmaps'

Developing a sustainable business model for EV recharging



World EV Cities Web Portal

- **Description:** Support and sharing site for 20-40 regional deployment efforts around world
- **Partners:** Managed by PH&EV Center, UC Davis with several mirrored partners (IEA,EVI)
 - Share regional deployment goals
 - Report regional progress
 - Community of expert problem solvers



World Cities Pioneering EV Ecosystems

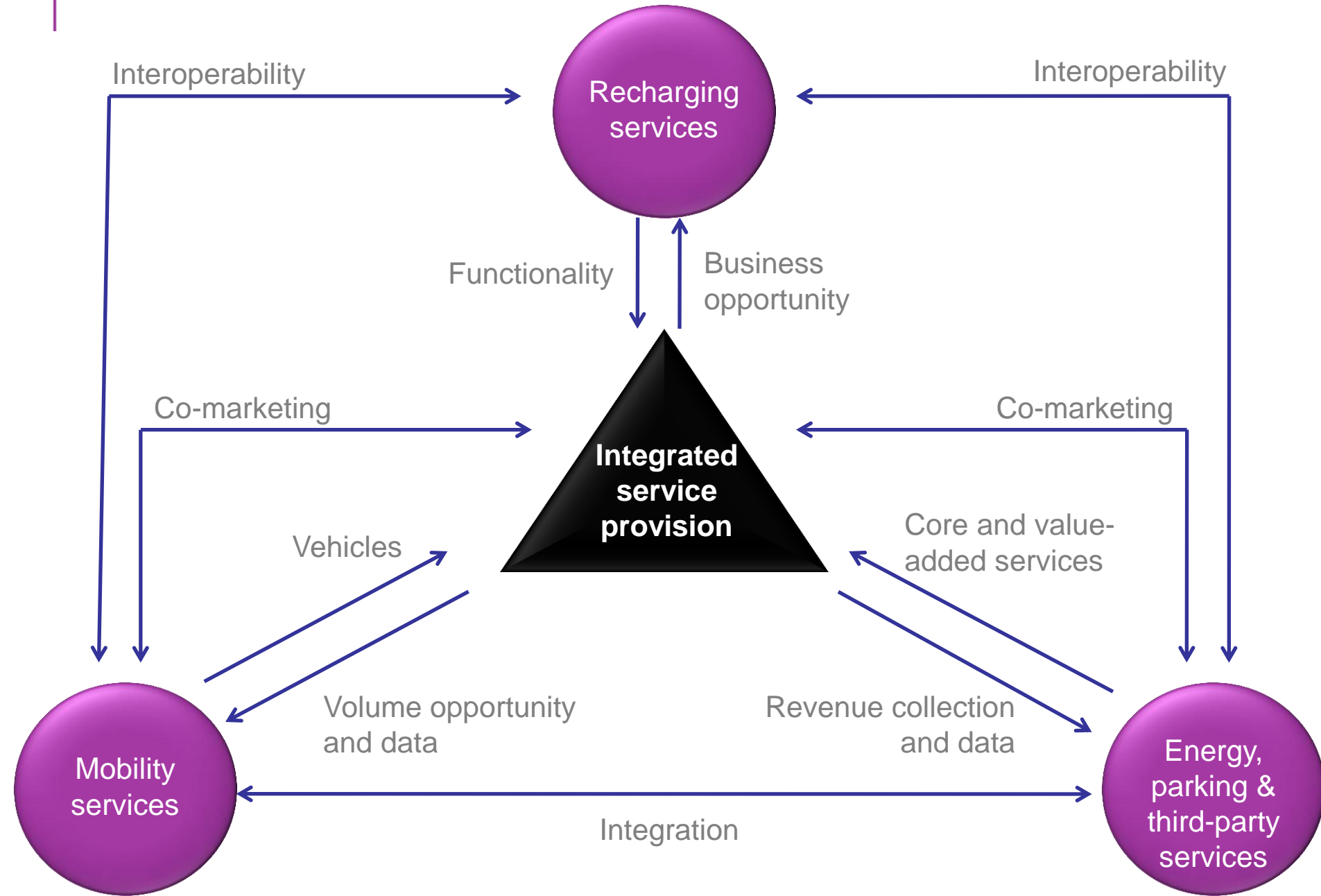


Founding Partners

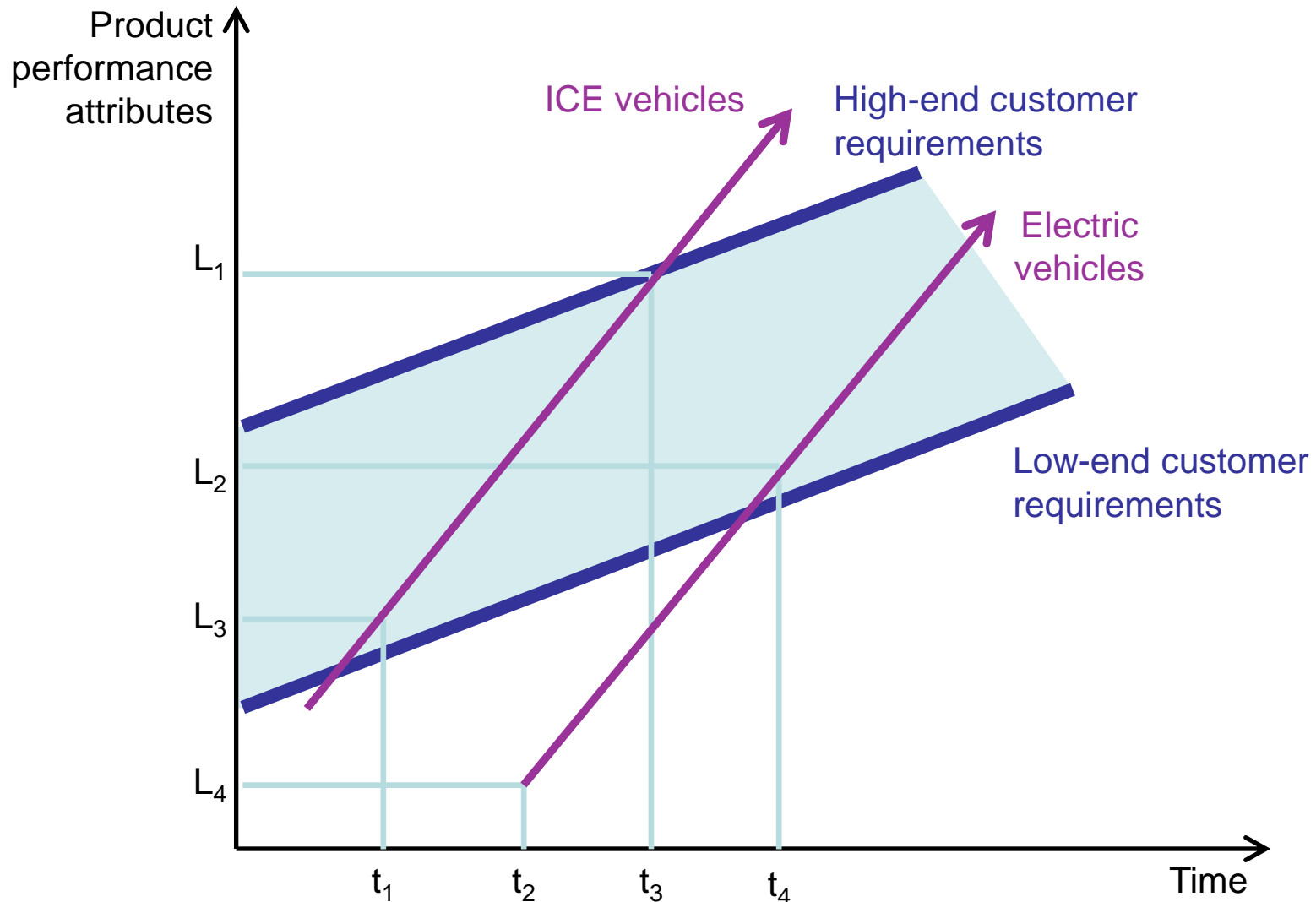


Emerging Challenges

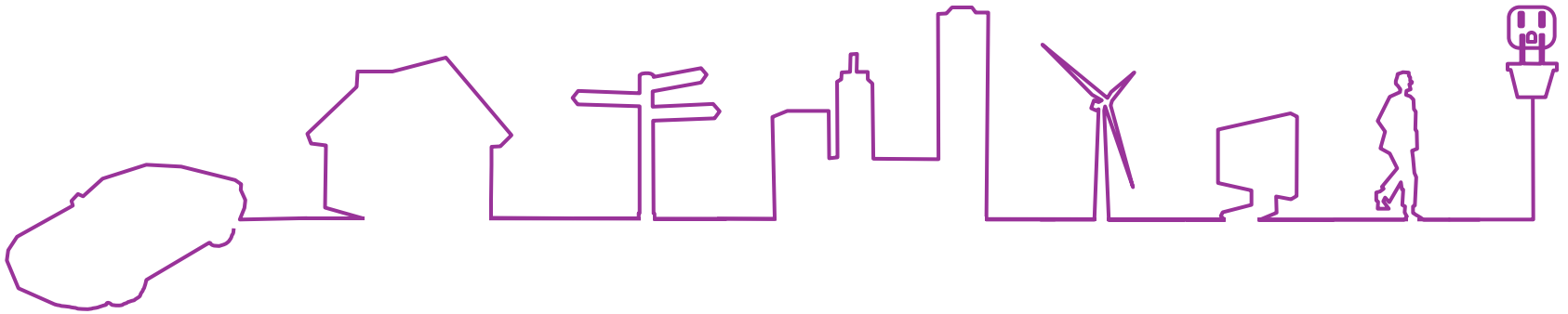
Future Business Models



Understanding Market Dynamics and Necessary Social Change



Unlocking Opportunities Beyond Recharging Batteries



BIG question for smart cities

Is EV Just Another Silo?



Or a
potential
source of
unifying
intelligence?

Thank You

For more information please contact:

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