



Promotion of EV Deployment: Overseas Cases & Japanese Cases As Viewed From Abroad

07 February 2014 | EV and PHV Town Symposium | Okinawa, Japan

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AGENDA

WHERE ARE WE TODAY?

WHERE WOULD WE LIKE TO BE?

HOW DO WE GET THERE?

OUTLOOK

**WHERE
ARE WE
TODAY?**

Year of...

Characterised by...

2007

HIBERNATION

EVs were only a minority activity for governments and automakers. Biofuels and hydrogen arguably enjoyed greater prominence and attention.

2008

IGNITION

The economic downturn hit automakers hard and encouraged the acceleration of electrification R&D as the closest-to-market technology to reinvent the fortunes of an ailing sector.

2009

PARTNERSHIPS

As the complexity of preparing for the introduction of EVs became clear, collaborative EV programmes were initiated to combine the expertise of governments, OEMs, utilities, cities, regions and technology suppliers.

2010

PILOTS

Data and findings from pilots emerged from major cities and pioneering regions around the world, informing both the development of vehicles and charging infrastructure systems.

2011

EXPECTATION

The anticipated arrival of cars culminated in global demand appearing to outstrip supply.

2012

QUESTIONS

The first full year when anyone could buy an EV encouraged questions about the prospects for the technology and a focus on apparent limitations.

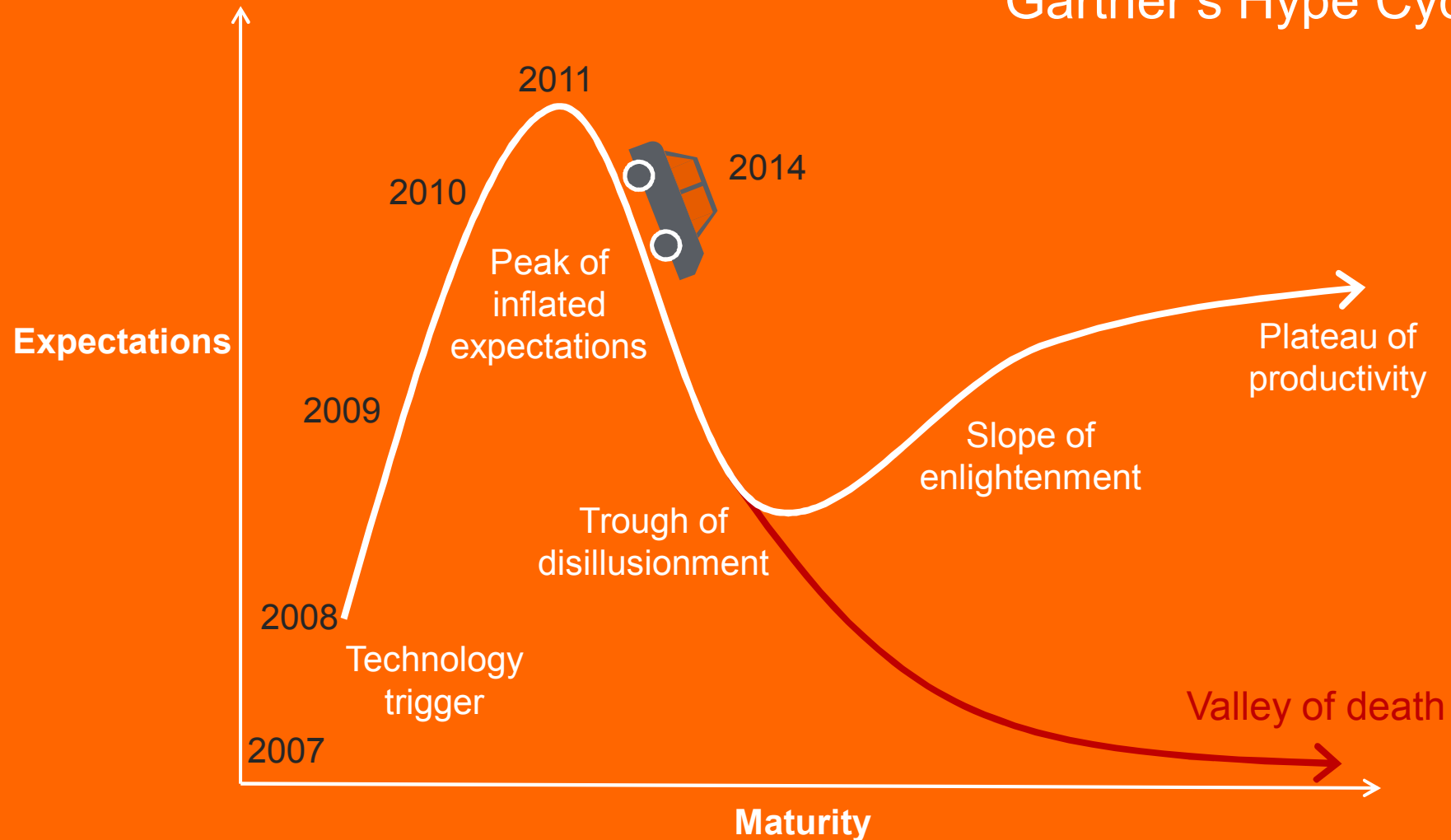
2013

PENDULUM

Notable early market successes were tempered by persistent concerns over perceived barriers and belief that market uptake should be more rapid.

RIDING THE HYPE CYCLE

Gartner's Hype Cycle



BARRIERS TO ADOPTION

- [illegible]

CREATING DEMAND

Moving beyond the pilots
& demonstrations

Preparing for mass
marketing

Demand Pull

2014



Supported
commercialisation

Fully commercial

Demonstration-
scale projects

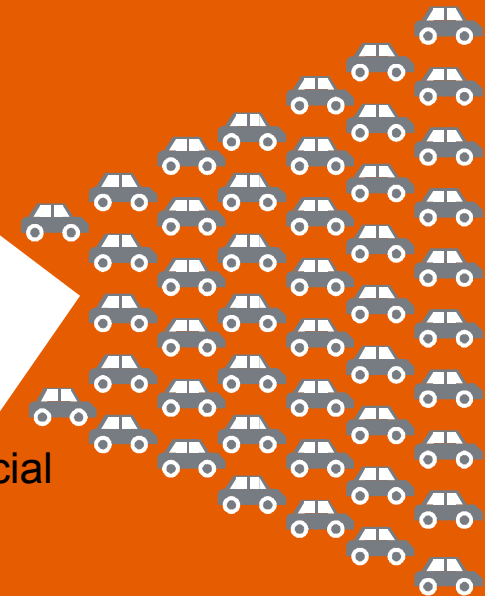
Pilot-scale projects

Applied research

Technology Push

2.0

3.0



**WHERE
WOULD WE
LIKE TO BE?**



CHANGE AHEAD

1. **RECOGNISE THE NEED TO CHANGE**
2. MAKE IT ACTIONABLE
3. MAKE IT PERMANANT

CLIMATE CHANGE

2DS

a vision of a **sustainable** energy system of reduced Greenhouse Gas (GHG) and CO₂ emissions

The 2°C Scenario

4DS

reflecting pledges by countries to cut emissions and boost energy efficiency

The 4°C Scenario

6DS

where the world is now heading with potentially **devastating** results

The 6°C Scenario



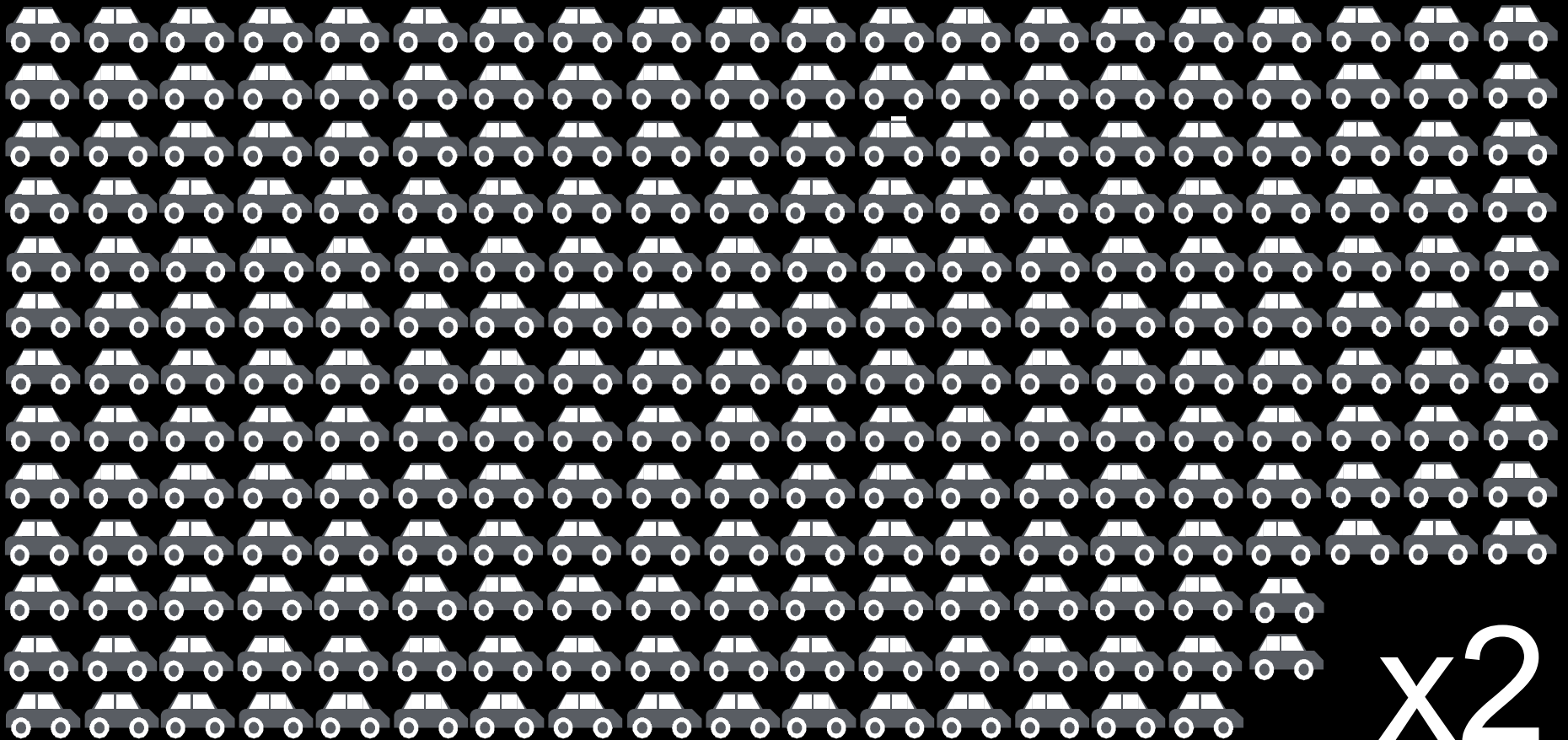
GROWTH IN GLOBAL EV STOCK



40,000 at start of 2012 (IEA, 2012)

2020

20 million required by 2020 (IEA, 2012)



x2

DIRECT HEALTH IMPACTS

BBC News Sport Weather iPlayer TV

NEWS HEALTH

Home World UK England N. Ireland Scotland Wales Business Politics Health Education Sci

12 June 2012 Last updated at 22:08 4.5K Share f t e

Diesel exhausts do cause cancer, says WHO

By James Gallagher
Health and science reporter, BBC News

Exhaust fumes from diesel engines do cause cancer, a panel of experts working for the World Health Organization says.

It concluded that the exhausts **were definitely a cause of lung cancer** and may also cause tumours in the bladder.

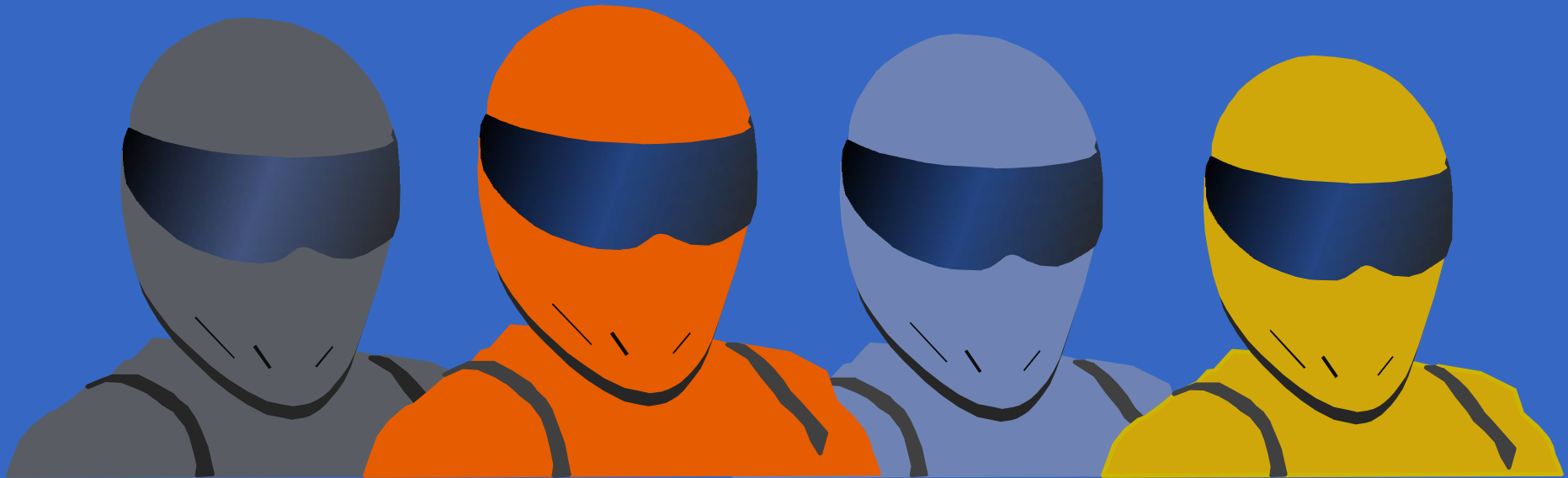
It based the findings on research in high-risk workers such as miners, railway workers and



EUROPEAN COMMISSION'S AMBITION

PHASE OUT **ALL**
CONVENTIONALLY FUELLED
VEHICLES **FROM** URBAN
ENVIRONMENTS **BY** 2050
& HALF BY 2030.

NOT ABOUT COMPETITION



EFFICIENT ICE

ELECTRIC

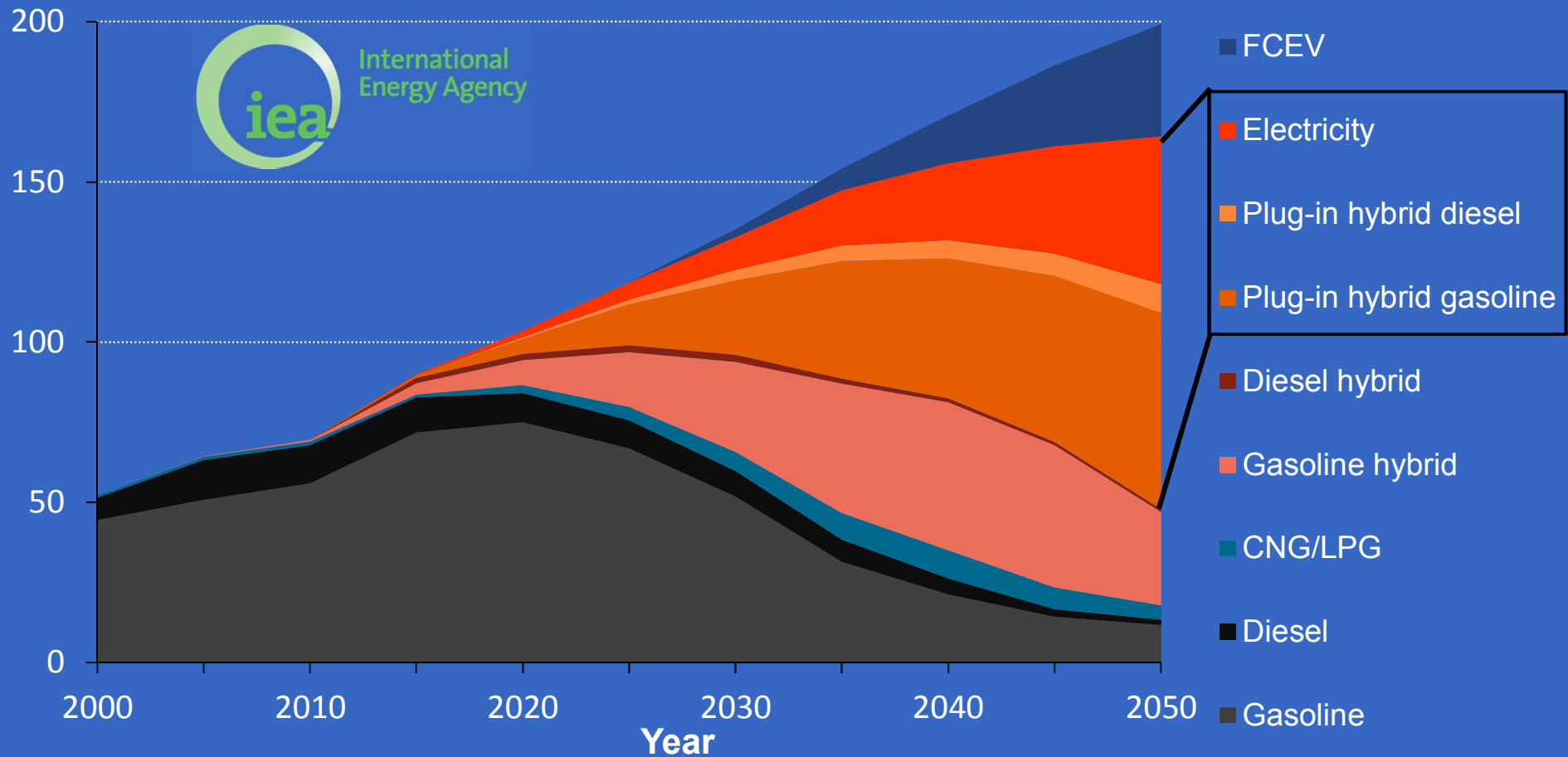
HYDROGEN

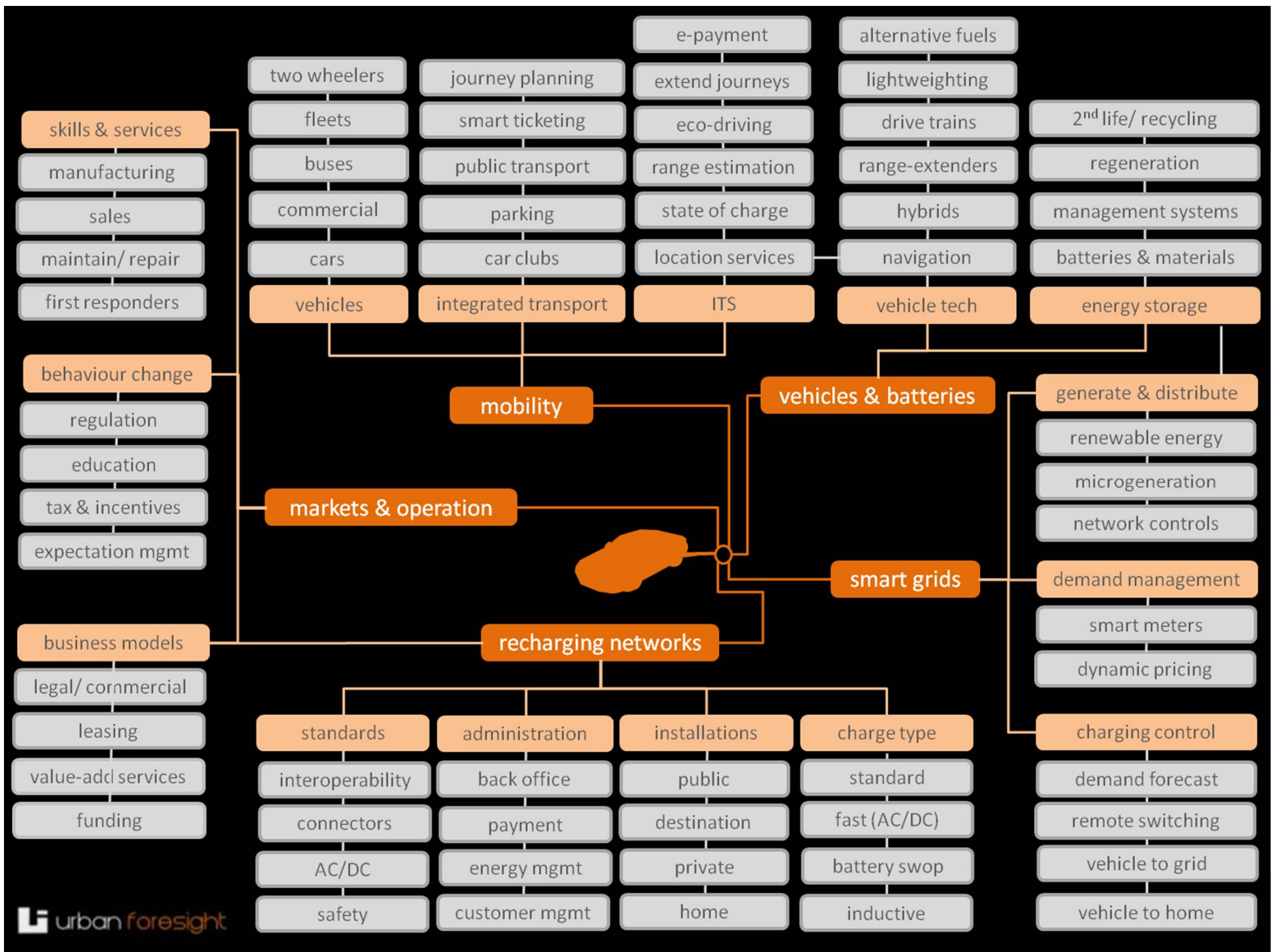
BIOFUELS

REALISTIC ABOUT TIMESCALES

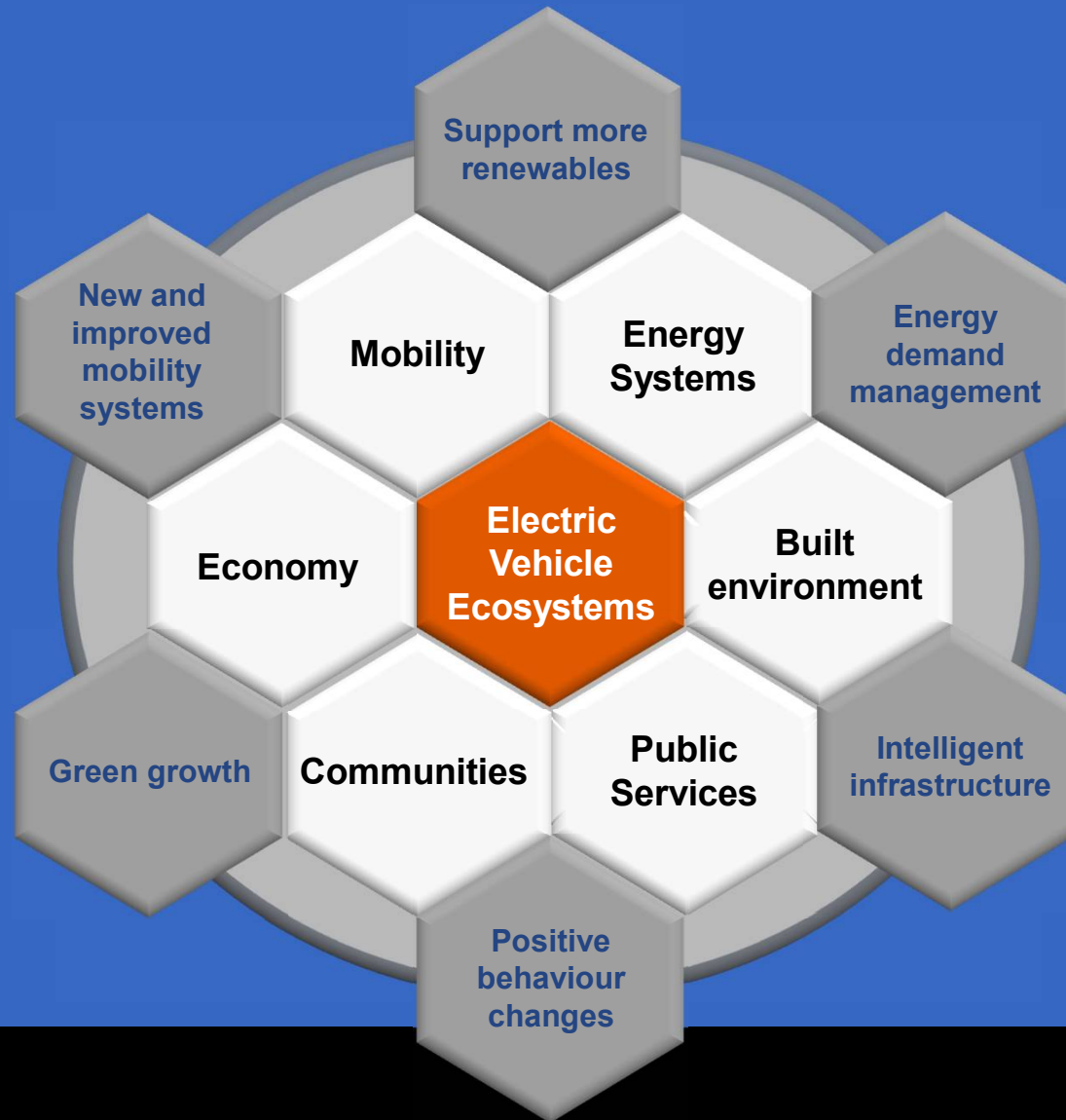
Passenger Light Duty
Vehicle sales (million)

IEA (2012)





EVs CAN MAKE CITIES SMARTER



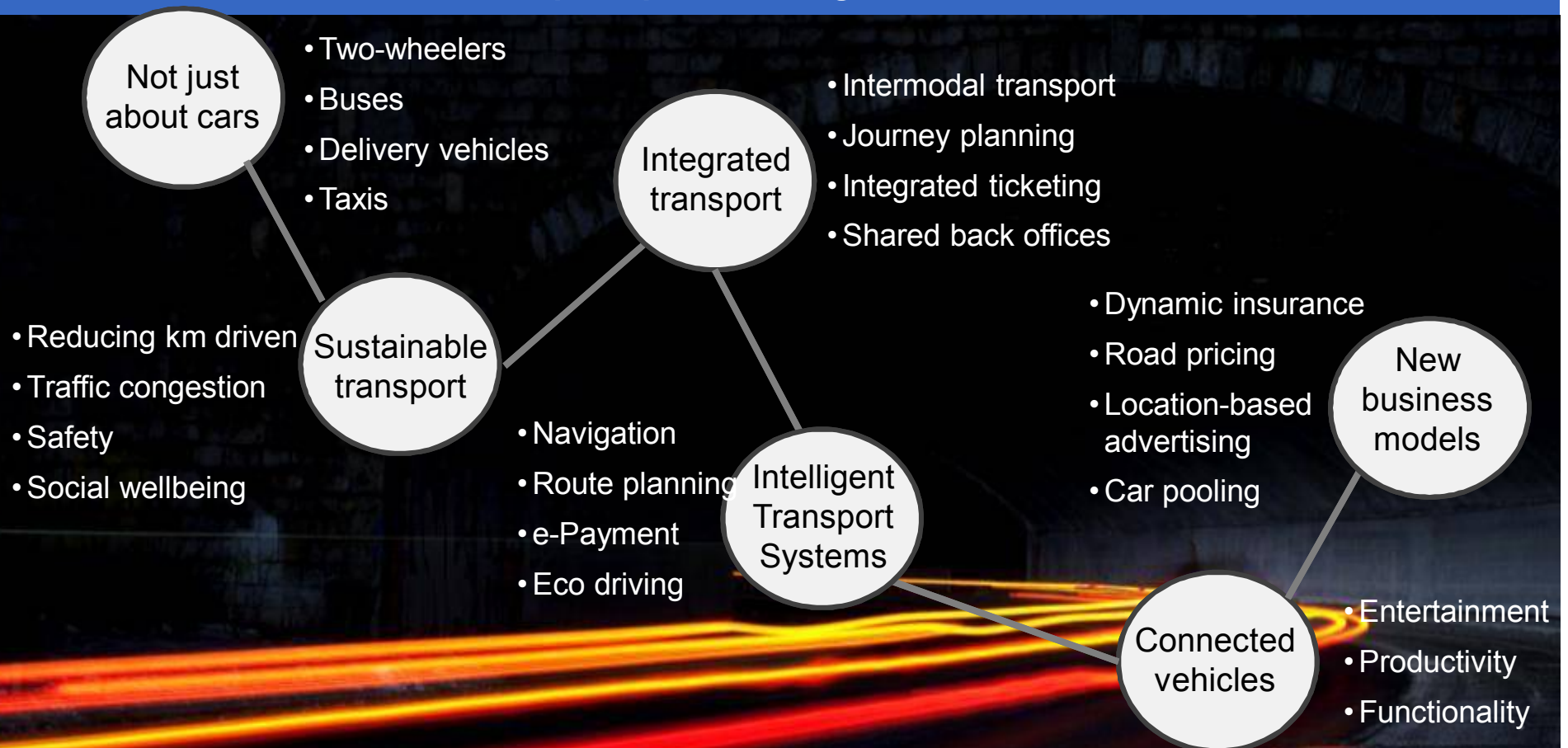
Reduce environmental impact

Sustainable economic growth

Improved living conditions

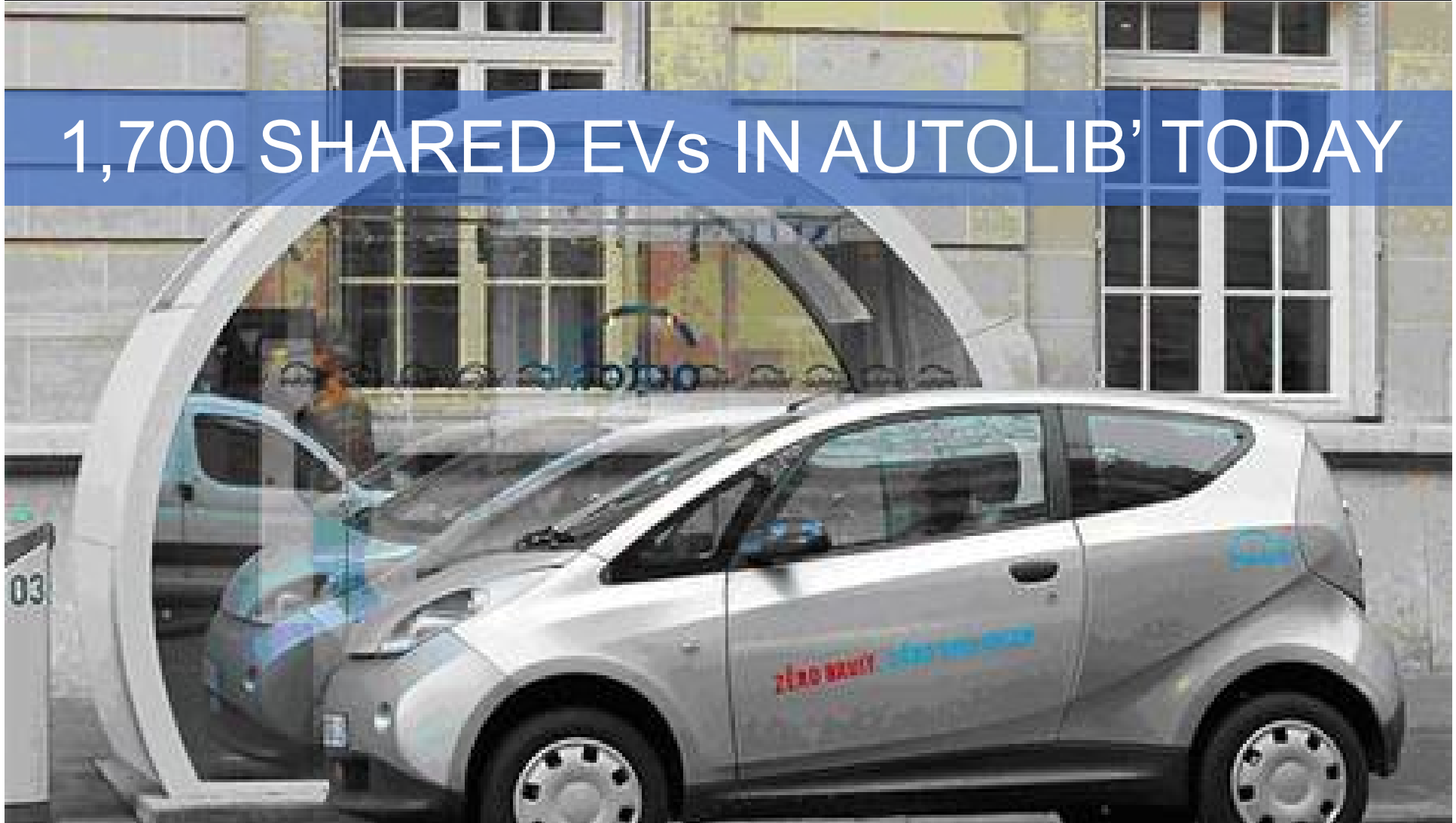
MOBILITY

Movement of people and goods around cities



ELECTRIC CAR SHARING IN PARIS

1,700 SHARED EVs IN AUTOLIB' TODAY



ENERGY SYSTEMS

Greater control over generation and demand for electricity



Not just about grid impact

Smart and controlled charging of EVs

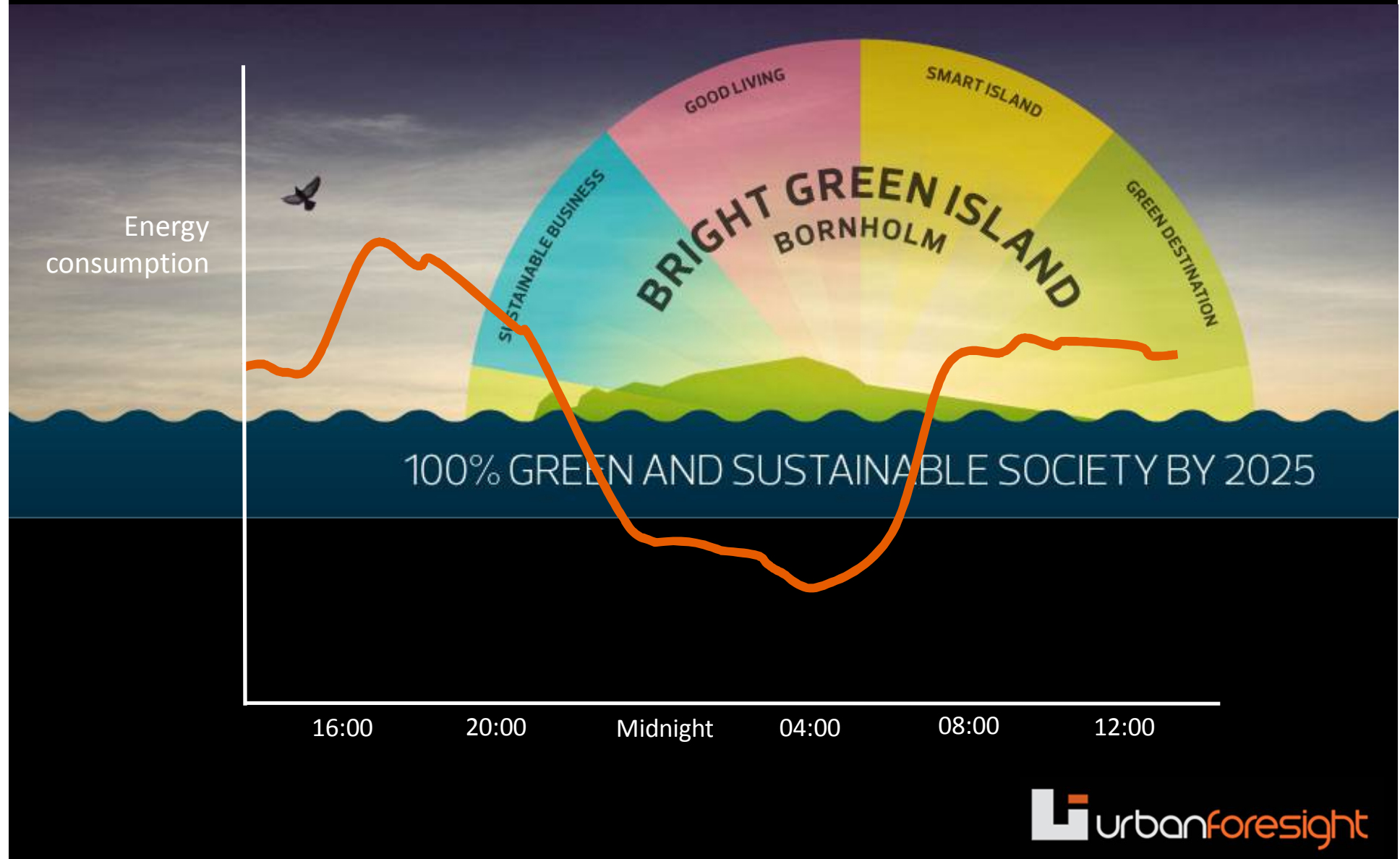
- Off-peak demand
- Spinning reserve

Mobile energy supply (V2G and V2H)

- Pricing signals and demand forecasting
- Technical standards and safety regulation

Reduced need for grid expansion and augmentation

EV "WIND TWINNING" IN DENMARK



BUILT ENVIRONMENT

Advanced technology & energy systems in the built environment

Incentivising on-site renewables

Home Area Networks and the Connected Car

Smart metering

Building codes and regulations

HOME ENERGY STORAGE IN JAPAN



PUBLIC SERVICES

New ways of delivering public services and commercial offerings

Public-private partnerships

Clean vehicle procurement policies

Supporting skills and services

New models of ownership

Financial services

End of life

MUNICIPAL VEHICLES IN BARCELONA



SMART COMMUNITIES

Education and engagement to promote positive transformations

Public awareness and confidence

Science, technology, engineering and maths

Positive behaviours

New ways of valuing costs

ELECTRIC AVENUE: PORTLAND, USA



ECONOMIC OPPORTUNITIES

Sustainable economic growth



BIG OPPORTUNITIES FOR ISLANDS

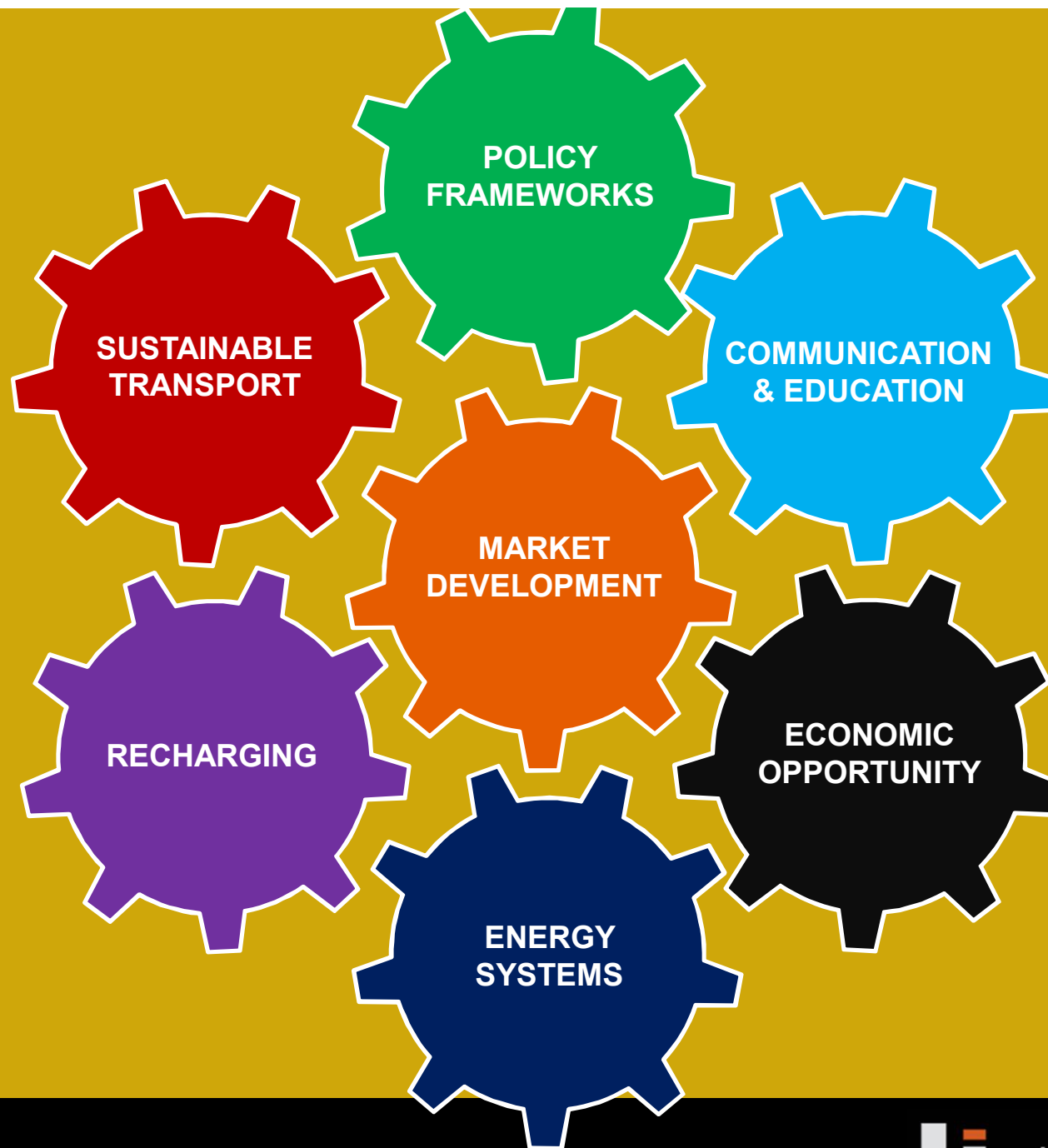


EVs and Tourism

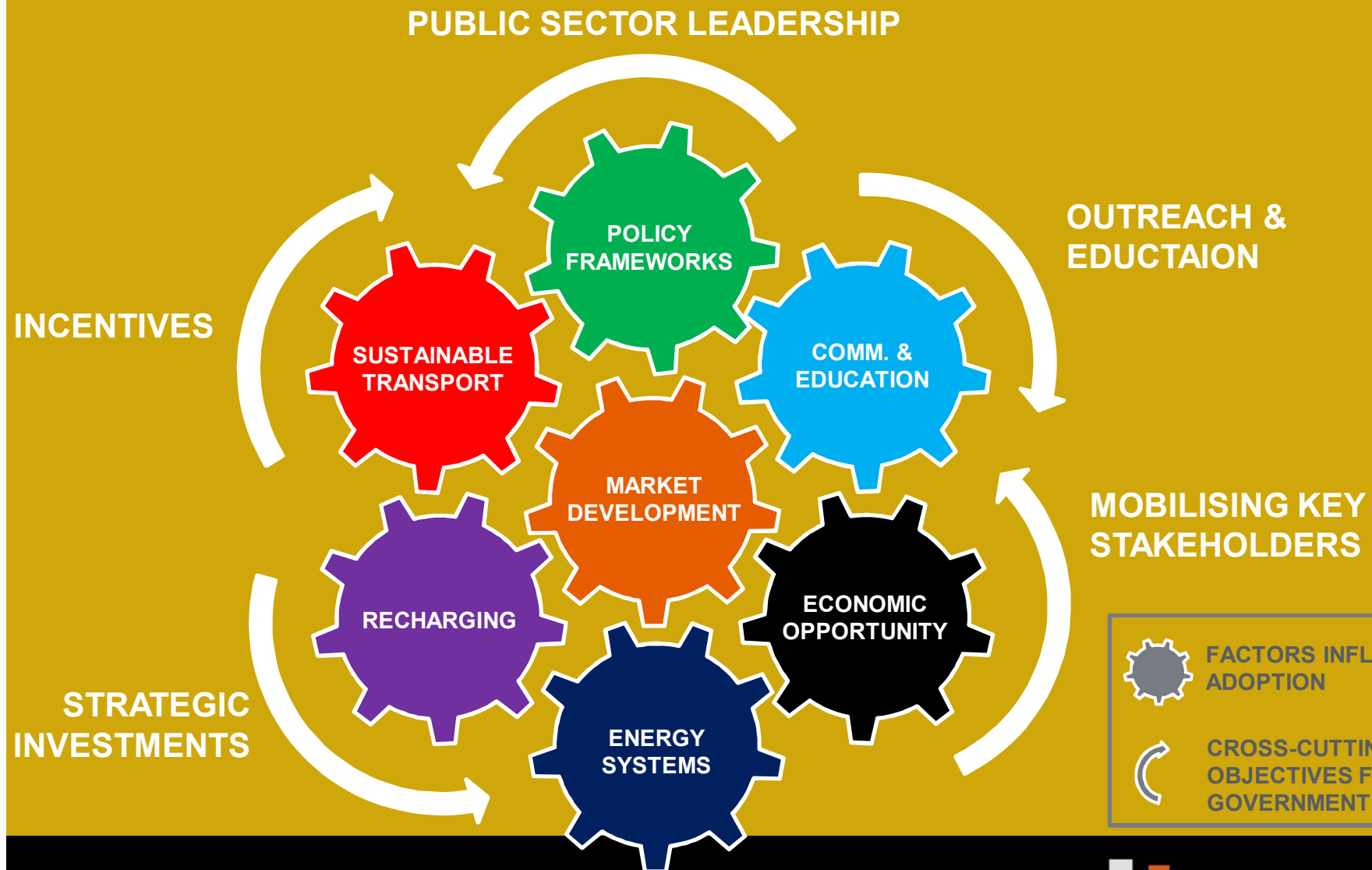


Securing the future of the U.S. state with highest oil dependence & energy prices

**HOW
DO WE
GET THERE?**



WHAT CAN GOVERNMENT DO?



OUTLOOK

Year of... Characterised by...

2014	NORMALISATION	It will no longer be a novelty to have driven or indeed own an EV.
2015	VARIETY	Multiple OEMs mass producing a range of different EV models that are manufactured specifically for different global markets.
2016	2 ND GENERATION	Sales are boosted by redesigned and reinvented EV models.
2017	INDEPENDENCE	EVs will need to survive in a world with fewer public subsidies and incentives.
2018	FUNCTIONALITY	Common standards, innovative technologies and ancillary services make using an EV fun and aspirational.
2019	VALUE	Developments in EV technologies and consumer awareness make total cost of ownership of EVs an attractive proposition to many more fleet managers and new car buyers.
2020	TAKE-OFF	The point at which the trajectory of EVs becomes clear.

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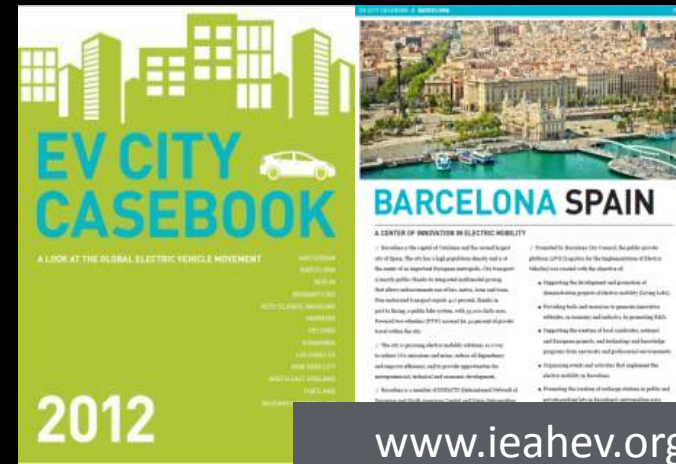
CLOSING
THOUGHTS.

WHERE ARE WE TODAY?

**WE'VE MADE SUBSTANTIAL
PROGRESS.**



www.worlddevcities.org

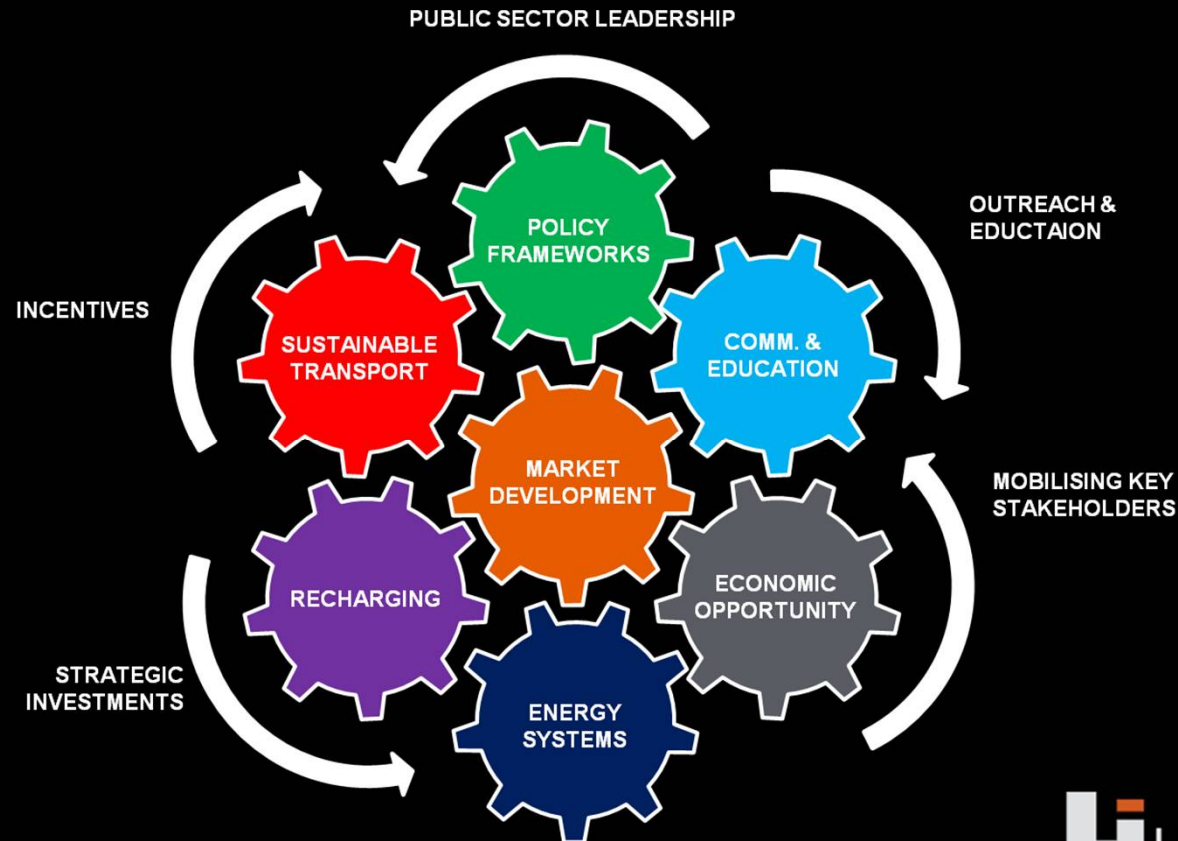


www.ieahev.org

...BUT NEED TO BE PATIENT

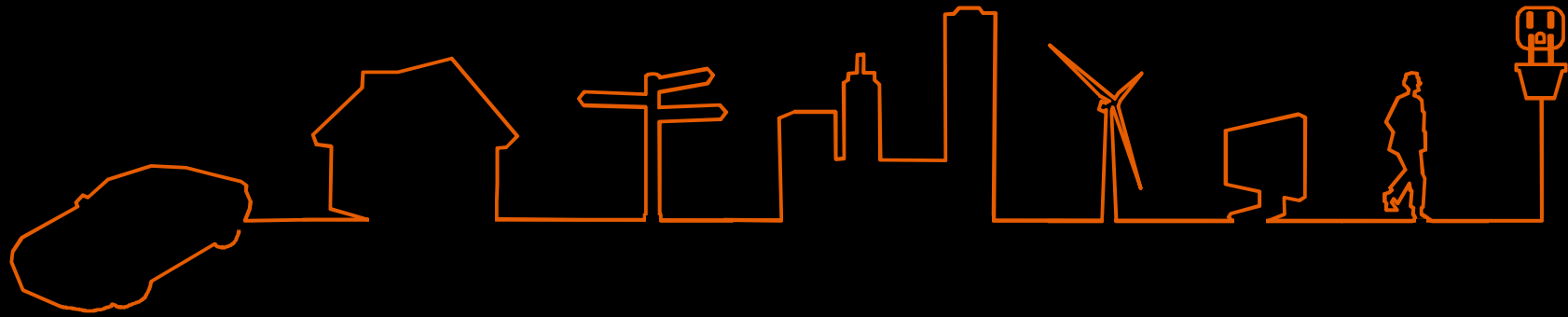
HOW DO WE MOVE FORWARD?

NEED INTEGRATED AND COMPREHENSIVE ACTION



WHERE WOULD WE LIKE TO BE?

EVs **MAKE** CITIES SMARTER **AND** SUSTAINABLE.



NOMINATE A PROJECT OR INITIATIVE FOR NEW EV CITY CASEBOOK

urbanforesight.org/casebook.html



THANK YOU

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