

# **ELECTRIC PUBLIC TRANSPORT IN BRABANT**

**NoAE GREEN CITIES WORKSHOP**

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**Driven**<sup>TM</sup>

**Helmond** City of Smart Mobility



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# **UNIQUE POSITION** **HELMOND**

## **AutomotiveCampusNL**

- Knowledge centre within a strong regional cluster

## **Brainport Toptechnology Region**

- Focus on technological innovation
- Enabling technologies

## **Industry and knowledge institutes are looking for pilot opportunities**

- Helmond / region as “living lab”
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# **AUTOMOTIVE HOTSPOT OF THE NETHERLANDS**

- Automotive companies and knowledge institutes (focus on R&D, engineering and testing)
- Test centers and research facilities
- Open innovation and joint R&D
- Automotive education on all levels
- Home for AutomotiveNL



# **TWO PROGRAMMES**

- **Electric Mobility Programme**
- **Cooperative Mobility Programme**

## **Approach**

- Helmond is “the place to be”
- Focus on innovation and development
- Visible in the city
- Contribute to environmental policies, improving accessibility and traffic flow and safety

# **COOPERATION IS KEY**

## **Within our own organisation**

- Integral, multidisciplinary cooperation

## **With other government organisations**

- On a regional, national and European level

## **With market parties**

- In projects, pilots en field tests



# URBAN NETWORK BRABANTSTAD



# **BRABANT EV PROGRAMME**

## **Main drivers:**

- Brabant Energy Agenda
- Economic Development & Innovation

## **Cooperation is key**

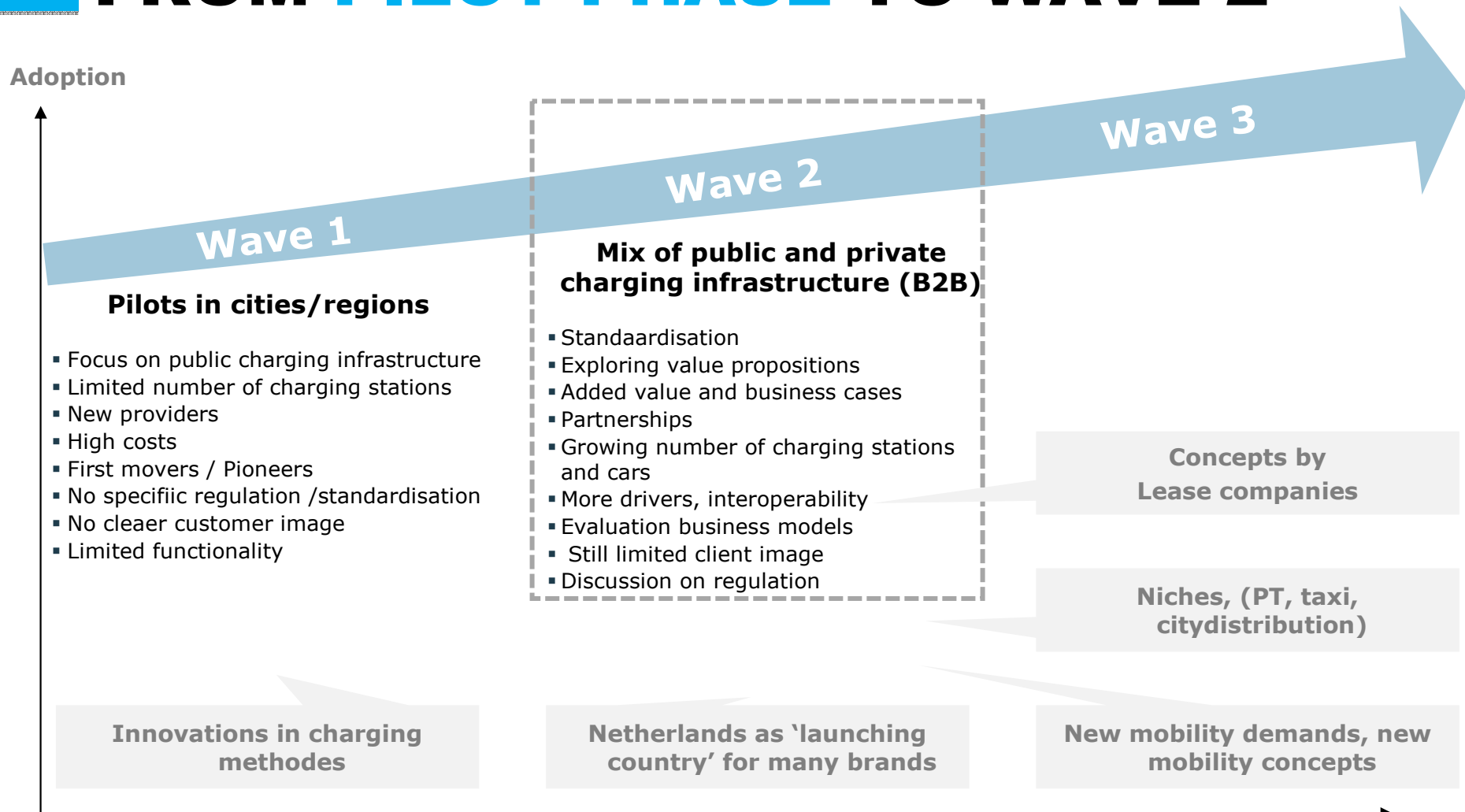
- Between province and major cities
- Between industry, knowledge institutes and government

## **Integrated approach**

- Connecting renewable energy, electric mobility and smart grids
- Cross-sectoral cooperation: energy, automotive, ICT, high tech systems



# FROM PILOT PHASE TO WAVE 2



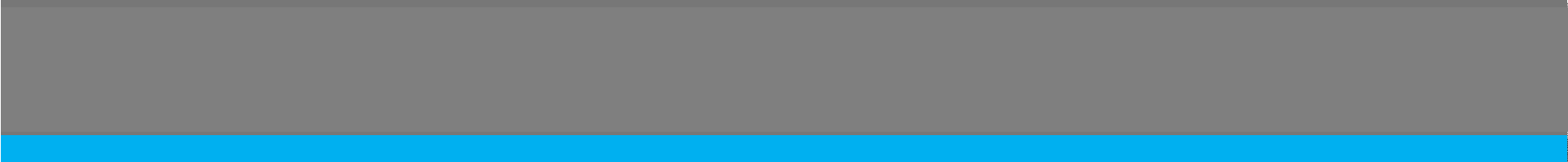


# **FIRST RESULTS (2010 – 2012)**

## **Getting things moving...**

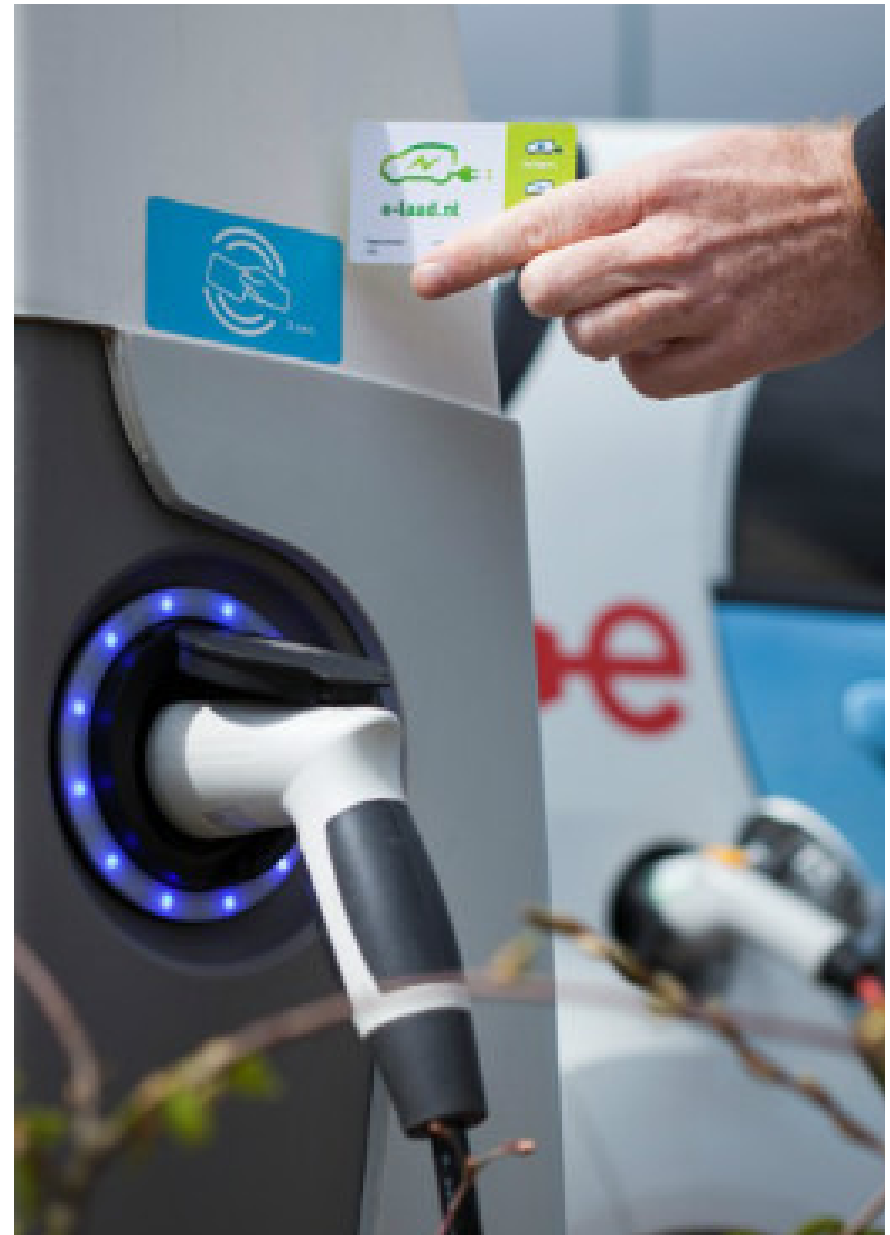
- Over 60 EV projects in Brabant
- 25 innovation projects subsidized
- Brabant has the highest amount of public charging stations
- High involvement of cities
- Strong cooperation with industry and knowledge institutions

## **Need for comprehensive follow-up of earlier programmes**

- More focussed
  - Larger, integrated pilots and innovation projects
  - Connecting to regional strengths
  - Market driven: investing instead of subsidizing
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## 3 FOCUS AREAS

- Heavy Duty Electric Powertrains
- Smart Grids and innovative mobility solutions
- Knowledge clustering (AutomotiveCampusNL)



# **FULL ELECTRIC PUBLIC TRANSPORT PROJECTS AND PILOTS IN BRABANT**



# 220XPRESS FULL **ELECTRIC** MINIBUS

- City of 's-Hertogenbosch
- 2010 – 2013
- 3 full electric minibuses in a regular service operation

emoss

BLUEKENS



ARRIVA

Provincie Noord-Brabant



's-Hertogenbosch



# **PRIMOVE** **FULL ELECTRIC** **PHILEAS**

- City of Helmond
- 2011 – 2013
- Induction charged advanced public transport system (24 m.)
- Technical pilot



**BOMBARDIER**

**SIEMENS**



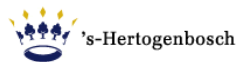
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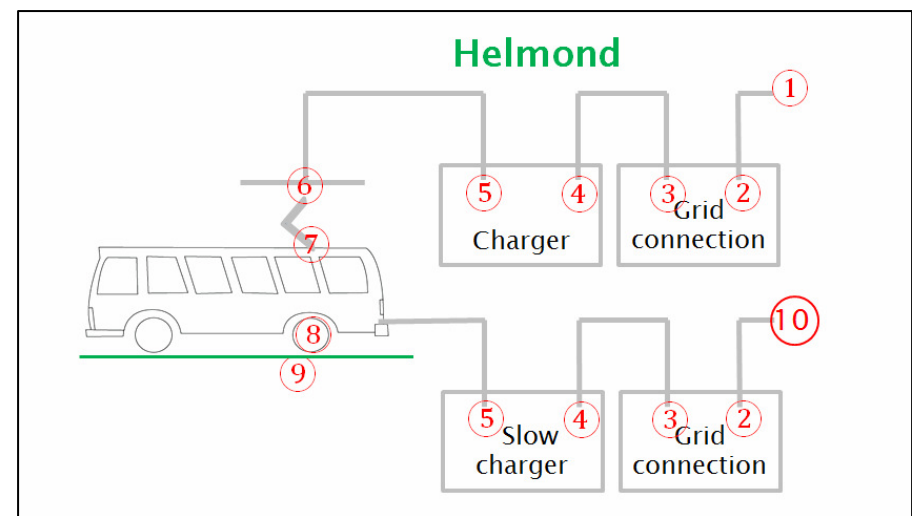
# IPT INDUCTIVE BUS

- City of 's-Hertogenbosch
- 2011 – 2013
- Induction charged full electric city bus (12 m.)



# IXION CONDUCTIVELY CHARGED BUS

- City of Helmond
- 2013 – 2014
- Conductively charged full electric city bus (12 m.)



Agentschap NL  
Ministerie van Economische Zaken



Helmond City of Smart Mobility



Samenwerkingsverband  
Regio Eindhoven



## **NEXT STEPS**

### **Upscaling**

- Larger scale comprehensive pilot with 15 electric PT buses in existing service operations
- PPP involving regional industry and SMEs

### **Challenges**

- Range
- Dynamic routing
- Infrastructure
- Total Costs of Ownership

### **Towards zero emission**

New concessions will gradually work to zero emission public transport





## OTHER DEVELOPMENTS

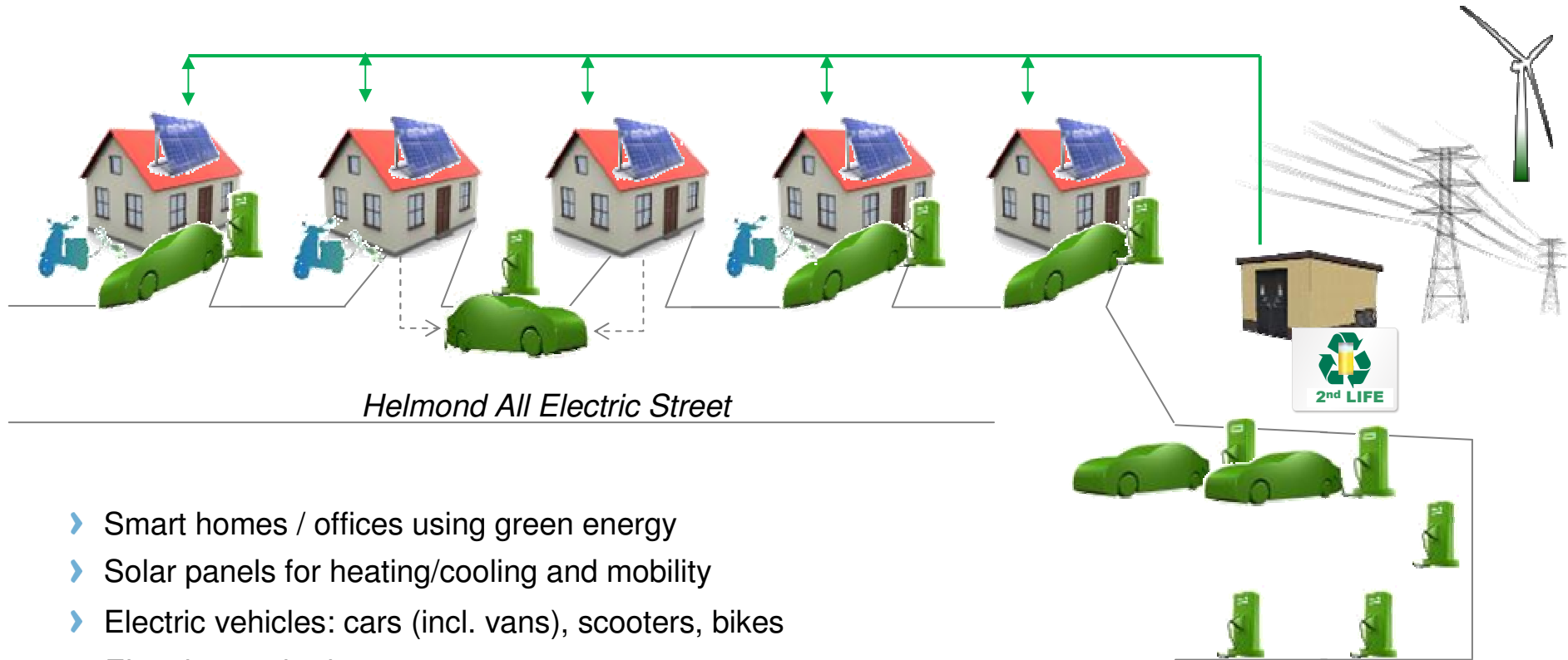


# **HELMOND ALL ELECTRIC STREET**

Objective:

Realisation of a medium scale multi-purpose test environment for integration of decentralised energy production, smart grids and electric mobility within a real-life situation with actual consumers.

# HELMOND ALL ELECTRIC STREET



- › Smart homes / offices using green energy
- › Solar panels for heating/cooling and mobility
- › Electric vehicles: cars (incl. vans), scooters, bikes
- › Electric car sharing
- › Parking lot with EV chargers: AC (slow), fast AC, DC (fast)?
- › Smart charging – old batteries get 2nd life as backup batteries

# **THANK YOU FOR YOUR ATTENTION**

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