

Interreg



EUROPEAN UNION

North Sea Region

SEEV4-City

European Regional Development Fund

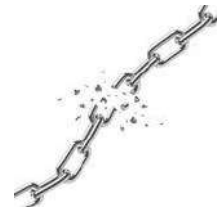
SEEV4-City

Smart, clean Energy and Electrical Vehicles for the City



The Clean Mobility Challenge

- The automotive sector and the energy (electrical power distribution) sector have operated independently of each other for decades
- The energy distribution network was built for centralised generation with tapered (and falling) demand
- Distribution assets typically have a very long life (40+ years)
- Electric vehicles represent a major disruptor to the industry



But..

- ***EV rollout requires widespread and reliable charging infrastructure***



SEEV4-City

- *Funding:* EU - Interreg North Sea Region
Priority 4: Promoting green transport and mobility
- *Duration:* Sep 2016 – Oct 2019
- *Budget:* €5 million
- *Consortium:* 10 partners / 6 Operational Pilots
- *Project Coordinator:*
Amsterdam University of Applied Sciences



Project Aims & Objectives

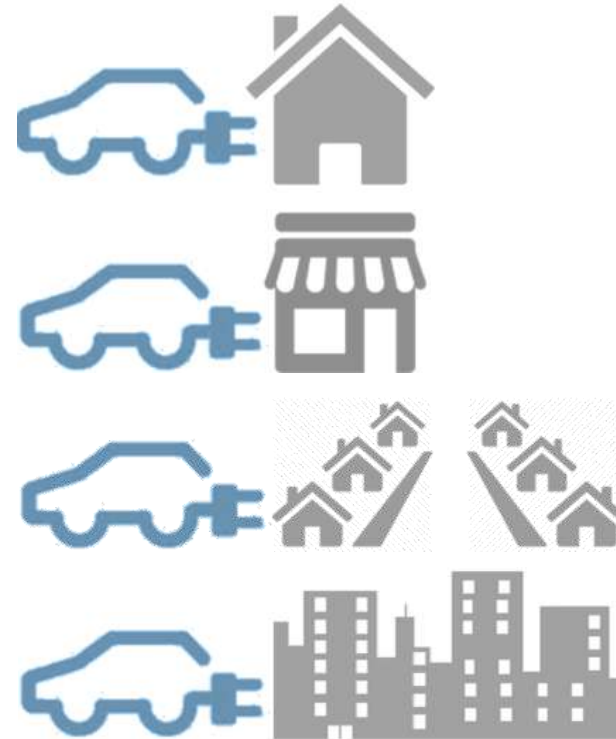
The 6 SEEV4-City Operational Pilots aim to demonstrate integration of EVs & RES to result in:

- Reduction of CO₂ emissions by 150 tonnes annually
- Increase in energy autonomy by 25%
- Estimated grid investment savings of €100m.



Demonstration: different scales and locations

- Loughborough
- Kortrijk
- Leicester
- Oslo
- ArenA
- Amsterdam



Challenges

- Operational Pilots require a Baseline
 - Pilots have developed on very different timelines
- Data is needed to assess the impact of the experiment
 - Obtaining data has been a challenge!
- The systems being demonstrated are:
 - Very new – prototypes and early market offerings
 - Very different, and different scales of operation
 - Operate in different countries, with different infrastructure and political/policy frameworks
 - Working with emerging standards



Current Status

- Loughborough: PV, storage, EV, V2G. *Complete and fully operational*
- Kortrijk: PV, storage, smart charging, EV & e-bikes. *In development and providing first data*
- Leicester: PV, storage, EV, V2G. *System now out to procurement*
- Oslo: Smart-grid, storage, EV. *Fully operational. Adding V2G and second life batteries*
- ArenA: PV, storage, V2G. *Coming online now (June 2018)*
- Amsterdam: Smart charging on city scale. *Providing first data*

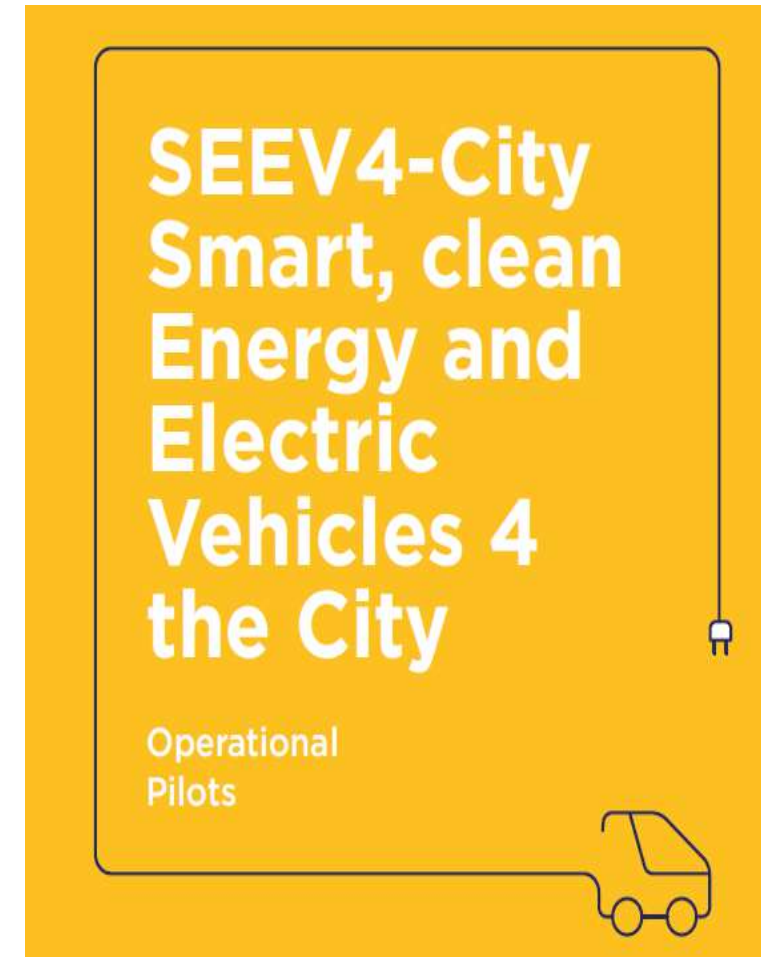


Current Status:

1st Results coming up

New Brochure

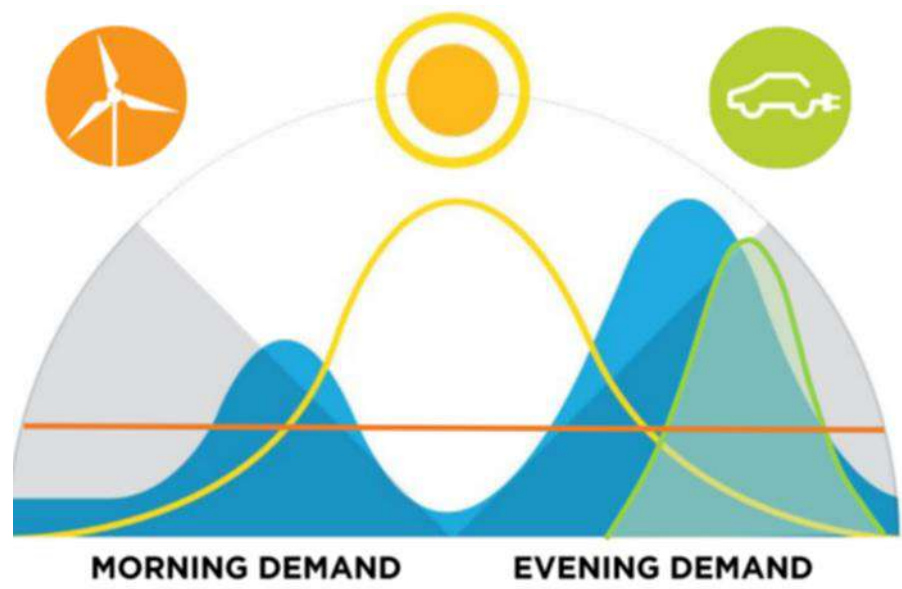
For non-technical audience
(online and paper available)



CleanMobilEnergy

Energy Management for Clean Mobility

Project objective



Source: Resourcefully

CleanMobilEnergy should significantly reduce greenhouse gas emissions in cities by combining renewable energy sources, energy storage and the charging of EVs *using an innovative energy management system.*

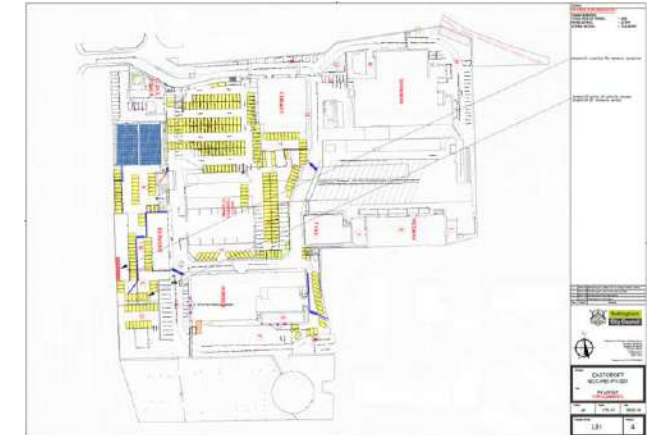
Key Facts

- Project timing: September 2017 – March 2021
- Total budget: €7.2m
- Total CO₂ reduction: 2400 tonnes/year
- Total renewable energy growth: 14,4 MW after 3 years
- SMEs involved: 24
- City Pilots: 4
- *Installations controlled with an iEMS*



City Pilots

- **Arnhem:** 10 MW solar field, cold ironing and three EV charging plazas, storage 500 – 1000 kWh
- **London:** 1,5 MW solar, second life battery storage, 50 Evs, V2G
- **Nottingham:** 40 EVs, V2G and 88 kW solar
- 5 charging stations for light EV, battery swapping system (Schwäbisch Gmünd: 2) and 5 houses with solar



Energy Management System

- Led by LIST
 - Joint procurement for the project
- Requirements Workshop
 - Review of existing Energy Management Systems
- Developed to meet the needs of all 4 pilots
- Platform for collection and exchange of data

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Thank you for your attention!

Questions, ideas or remarks?

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