



Smart Electric Urban Logistics

Freight in the City 2018

06 November 2018

Tanja Dalle-Muenchmeyer, Cross River Partnership

Innovate UK

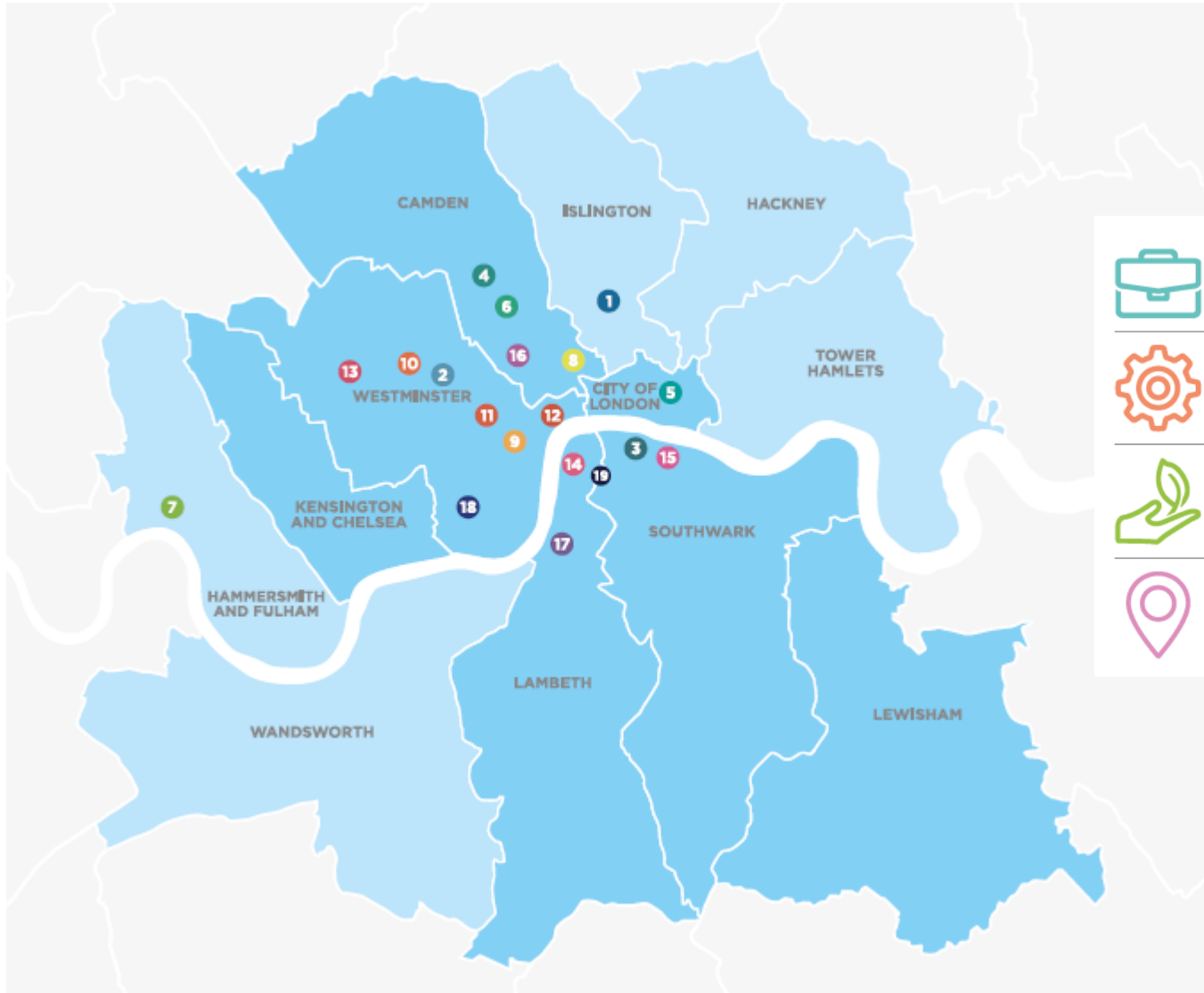


Office for
Low Emission
Vehicles



CROSS RIVER
PARTNERSHIP

Cross River Partnership



Good Jobs



Strong Businesses



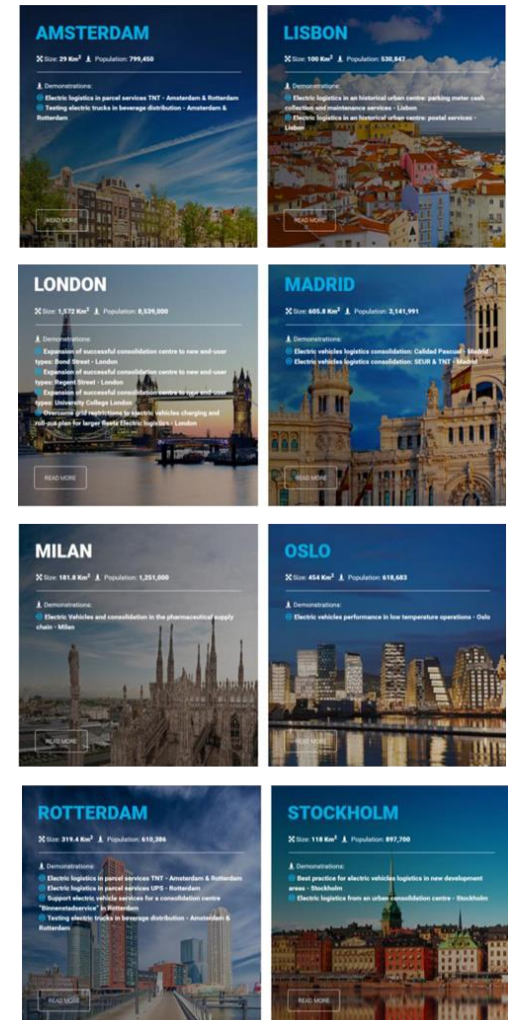
Clean Air



Great Places

Background: FREVUE

- 4.5-year EU-funded project
- 8 cities, 32 partners
- Deployed over 80 electric vans and trucks up to 18t





FREVUE: Local Grid Infrastructure Capacity

- Potential local constraints
- FREVUE partner UPS encountered grid infrastructure constraints when charging all EFVs at the same time
- Infrastructure upgraded to charge up to 63 vehicles
- Such infrastructure upgrade has proven:
 - Costly, lengthy and disruptive
 - Non-incremental
 - Requiring investment in 3rd party assets



Barrier to the large-scale deployment of EFVs



CROSS RIVER
PARTNERSHIP

Smart Electric Urban Logistics

- An **additional 20 EFVs** at UPS central London depot
 - Bringing the number above the maximum that can theoretically be charged
- Design and implement a sophisticated **network capacity assessment tool** developed
- Design and implement an **innovative smart charging system** with an energy storage system





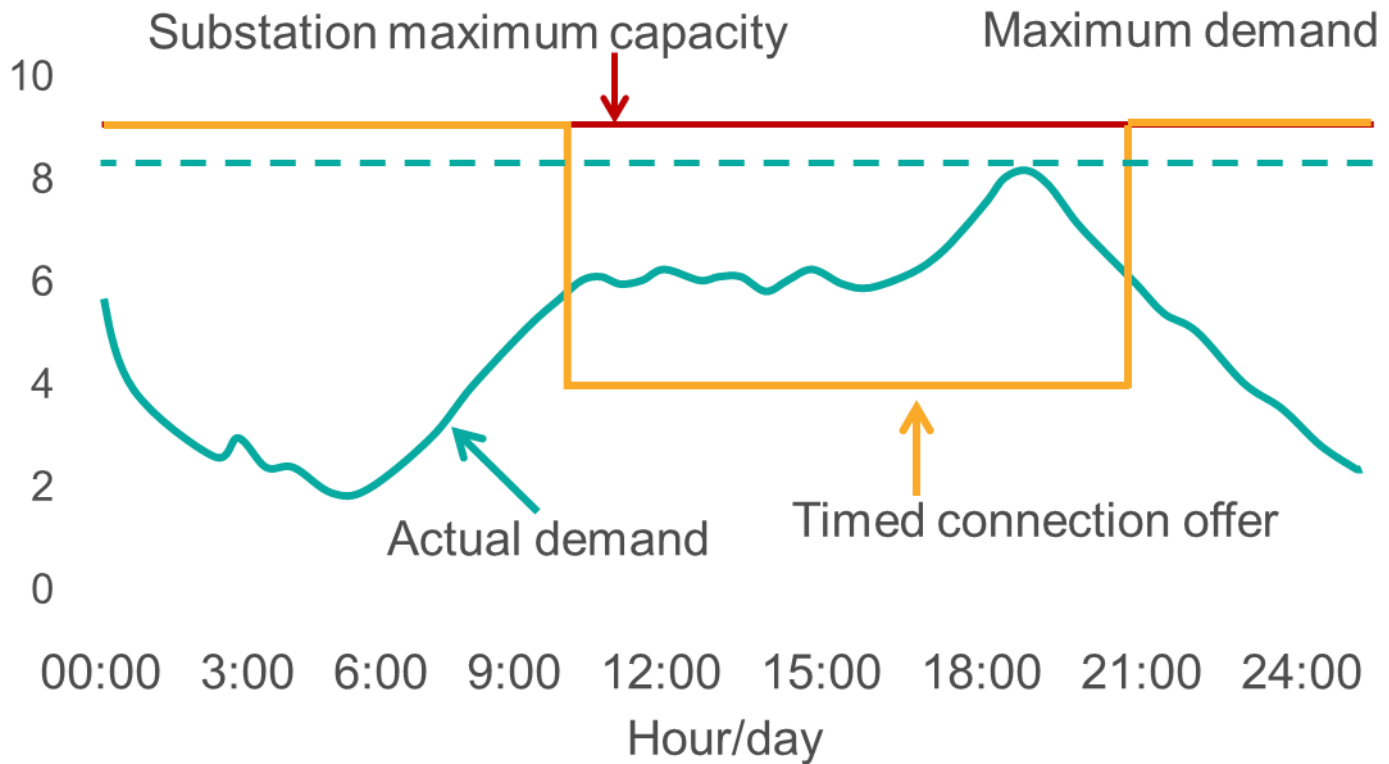
CROSS RIVER
PARTNERSHIP

Network Capacity Assessment Tool



CROSS RIVER
PARTNERSHIP

Timed Connection Tool





CROSS RIVER
PARTNERSHIP

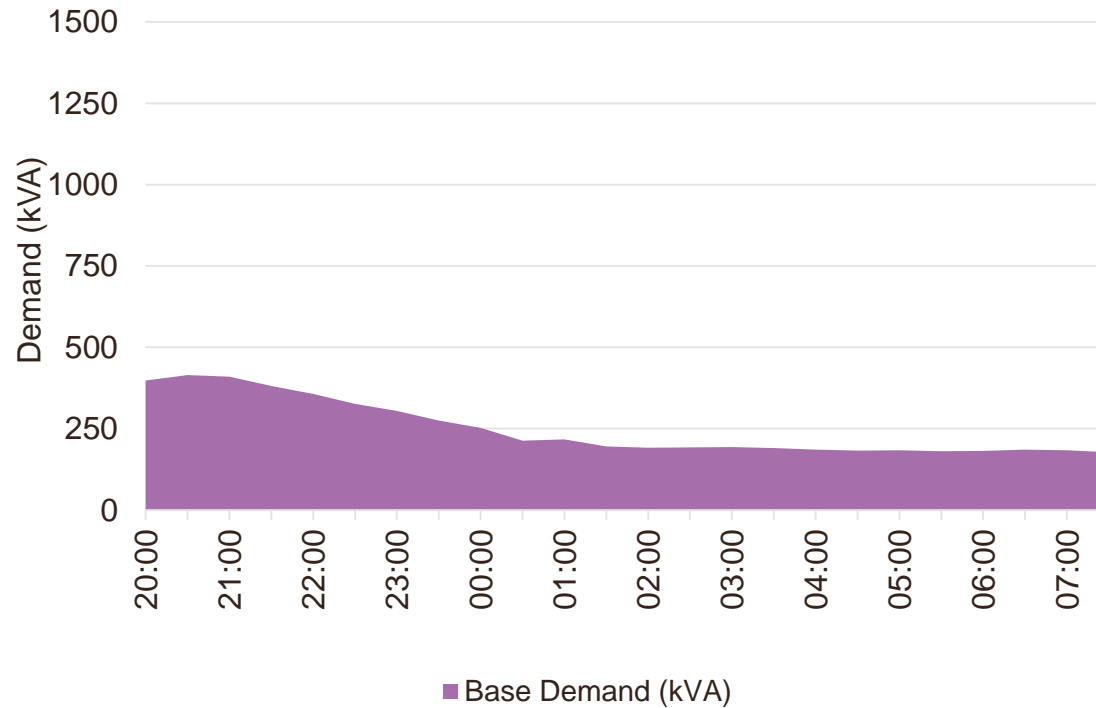
Smart Grid System



CROSS RIVER
PARTNERSHIP

Smart Electric Urban Logistics

Night-Time Demand on 16-17 January 2016

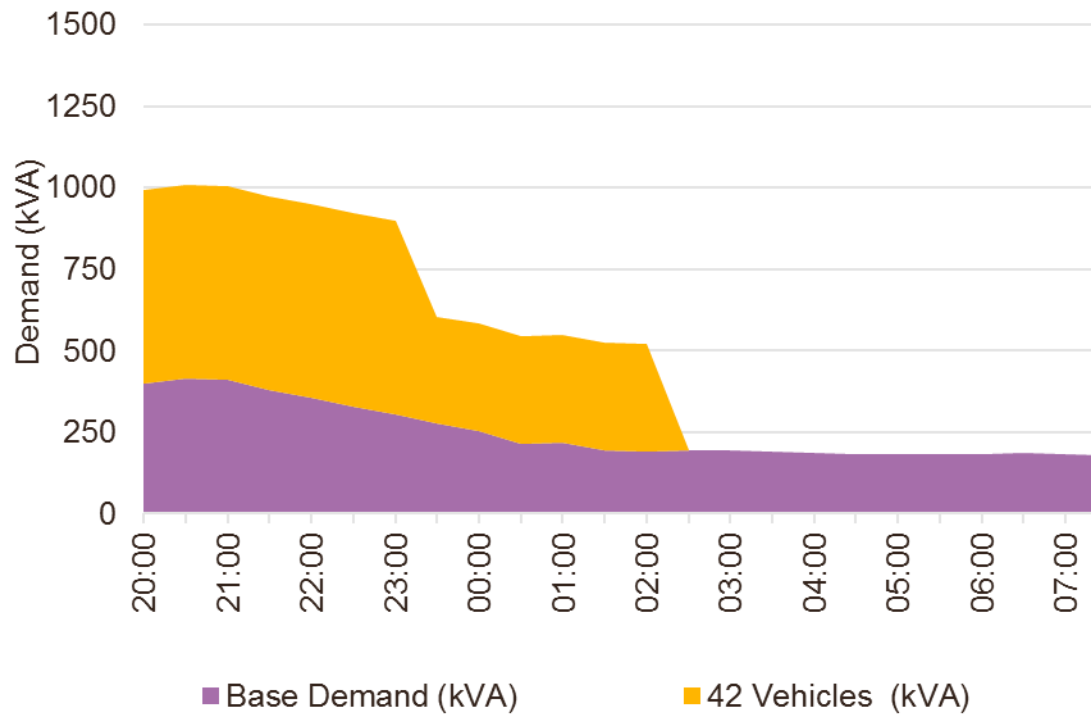




CROSS RIVER
PARTNERSHIP

Smart Electric Urban Logistics

Night-Time Demand on 16-17 January 2016

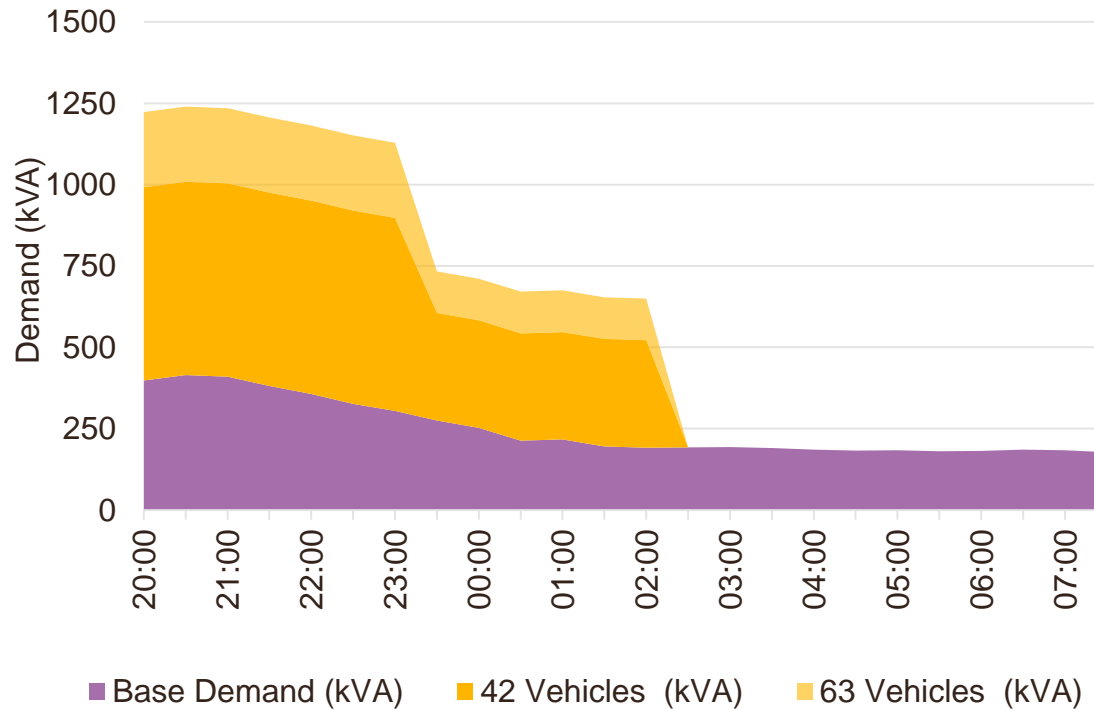




CROSS RIVER
PARTNERSHIP

Smart Electric Urban Logistics

Night-Time Demand on 16-17 January 2016

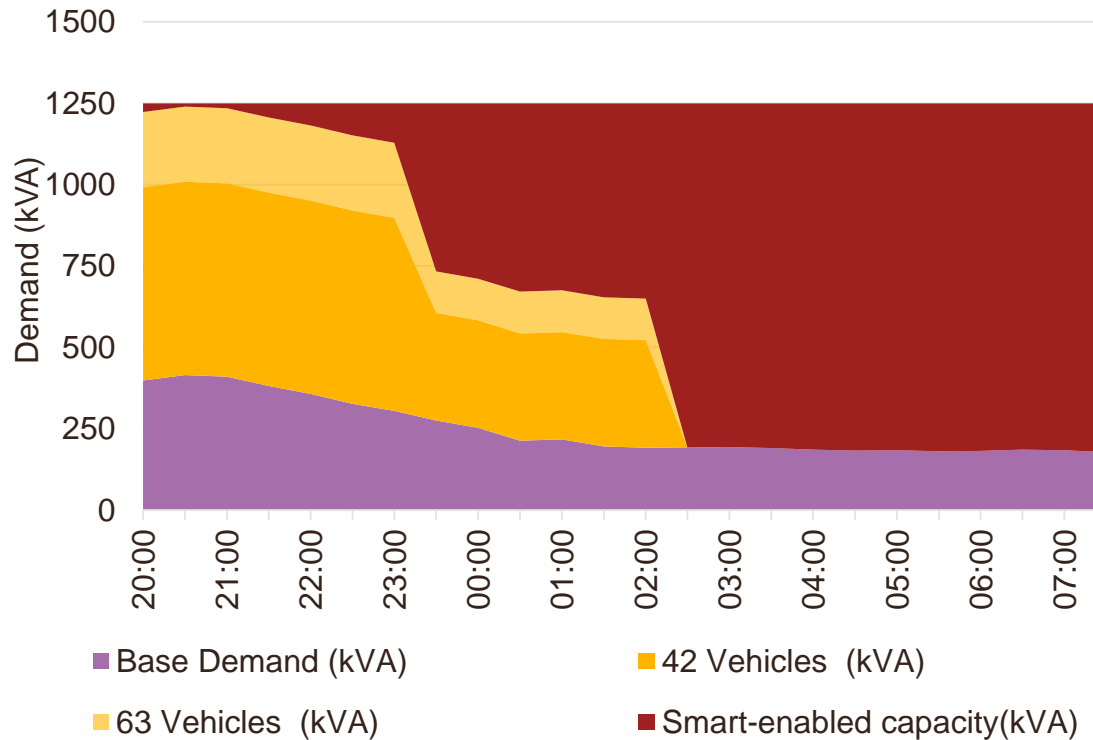




CROSS RIVER
PARTNERSHIP

Smart Electric Urban Logistics

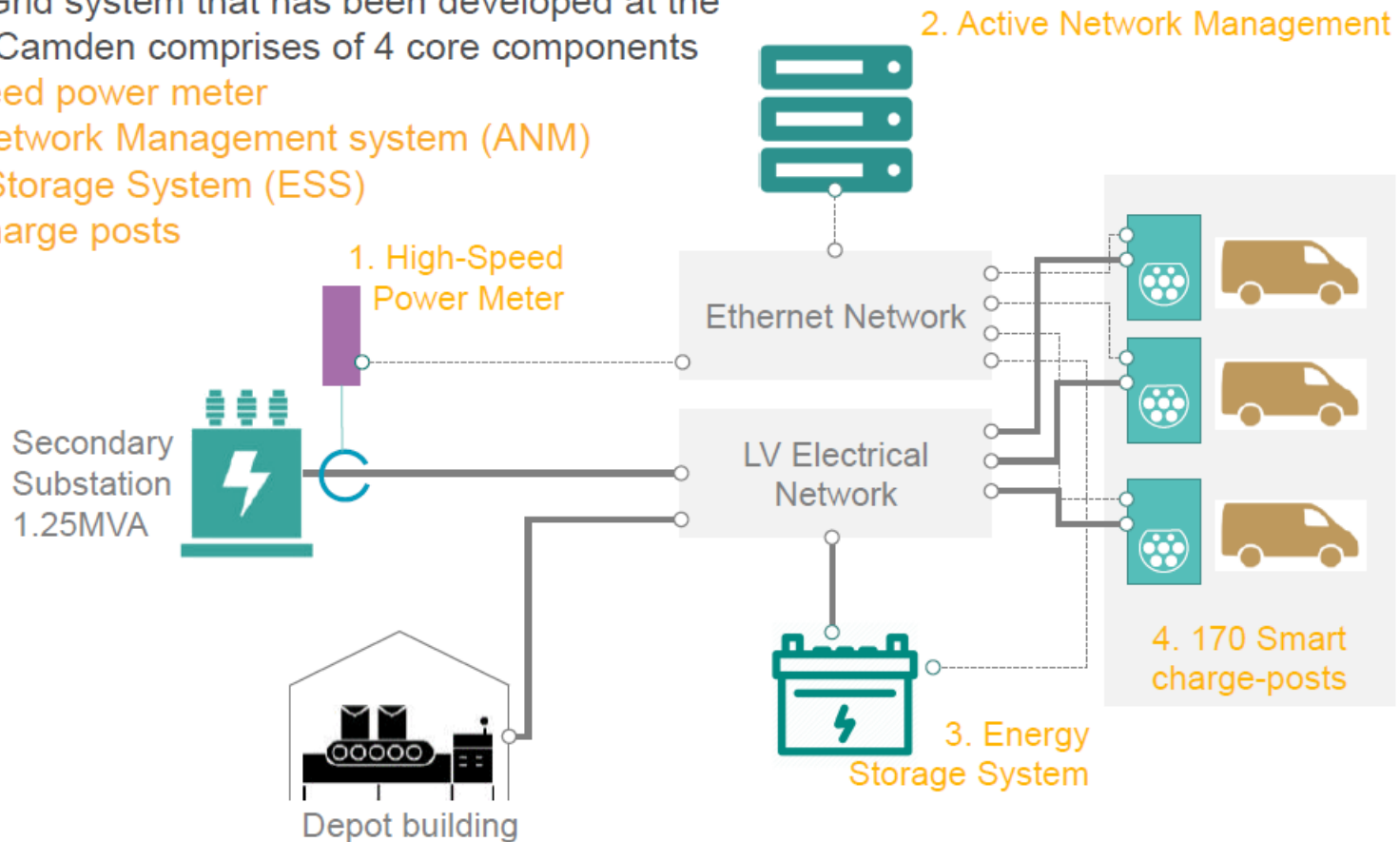
Night-Time Demand on 16-17 January 2016



Smart Electric Urban Logistics Smart Grid Core Components

The Smart Grid system that has been developed at the UPS site in Camden comprises of 4 core components

1. High-speed power meter
2. Active Network Management system (ANM)
3. Energy Storage System (ESS)
4. Smart charge posts





CROSS RIVER
PARTNERSHIP

Smart Electric Urban Logistics

Key learnings – Smart Charging

- Optimises the use of existing assets
- Reduces capital expenditure
- Can reduce operational expenditure, e.g. energy costs, earn revenues
- Smart-charging technology developing rapidly
- Business continuity is key





CROSS RIVER
PARTNERSHIP

Thank you

Tanja Dalle-Muenchmeyer
Programme Manager Electric Freight, CRP
tanjadallemuechmeyer@crossriverpartnership.org