



Keep going on with opportunity charging

5th International E-Bus Conference
June 1st, 2016 Berlin

electricity ⚡



We design, build and deliver comprehensive power transfer solutions for the needs of our markets.

We are a professional partner for our customers.

**Innovative Power Transfer
for a World of Movement**

Applications



Opportunity Charging with IPT®



Why Electrical Vehicles at all...?

- Emissions (e.g. CO₂) must be drastically reduced or better avoided
- Noise must be reduced
- Energy must be used more efficiently
- Electrical buses are characterized by
 - Zero Emissions
 - High Energy Efficiency
 - High Driving Comfort
 - Quiet Operation
 - Cost Saving Operation
 - Easy and Safe Handling



Opportunity Charging with IPT®



The Gap

Megatrends

- Urbanization
- Growing population
- Rising energy cost

Range?
Investment?
Restrictions?

Megatrend Transportation

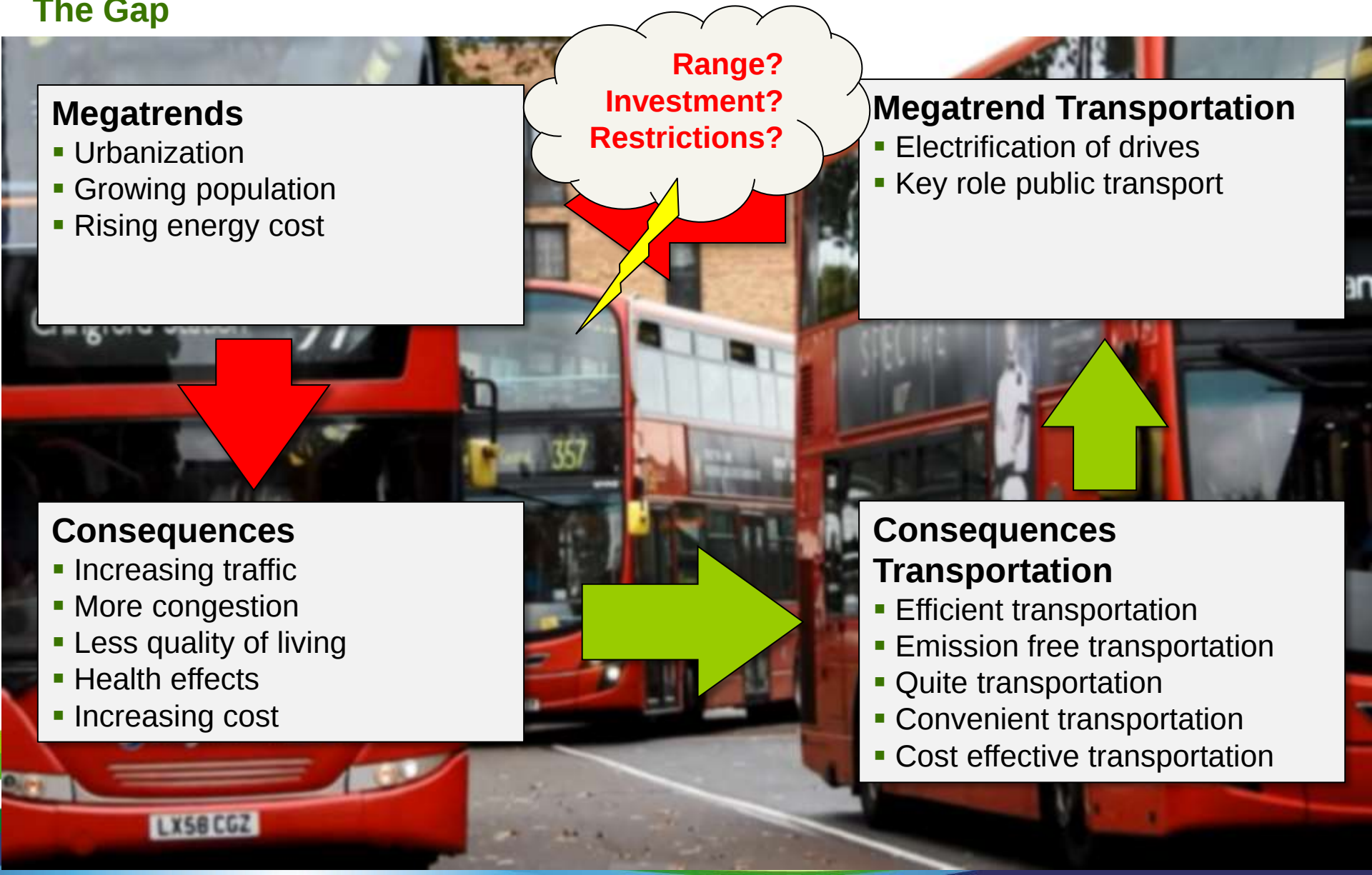
- Electrification of drives
- Key role public transport

Consequences

- Increasing traffic
- More congestion
- Less quality of living
- Health effects
- Increasing cost

Consequences Transportation

- Efficient transportation
- Emission free transportation
- Quite transportation
- Convenient transportation
- Cost effective transportation



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Potential Restrictions of Electrification

Range?
Investment?
Restrictions?

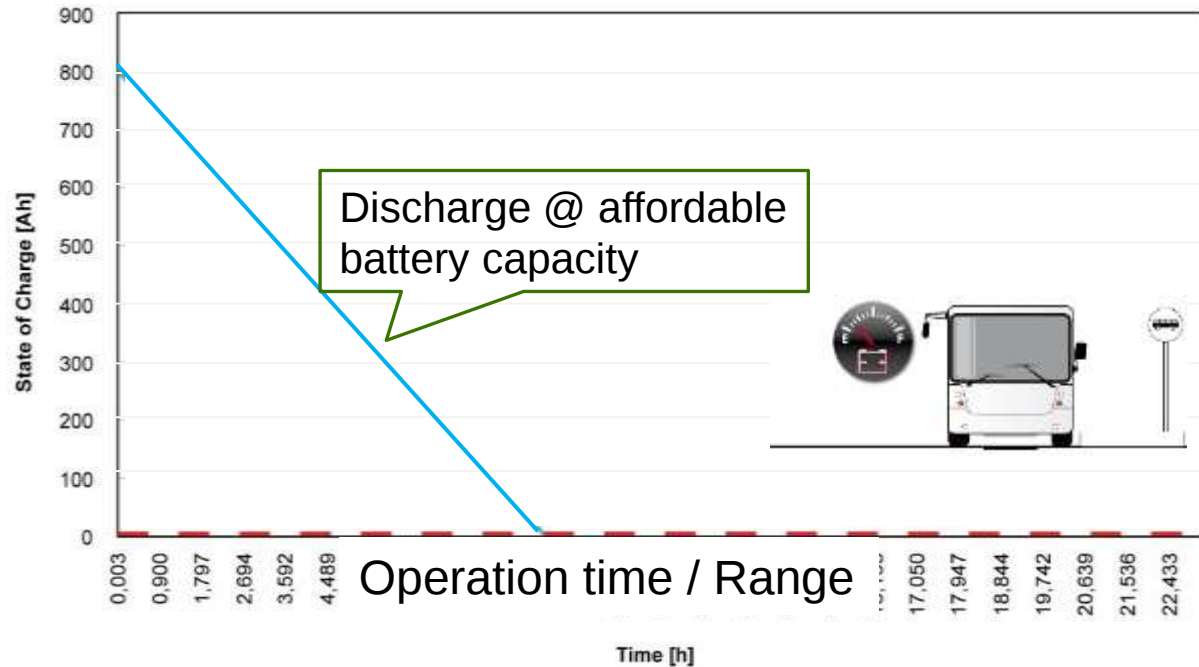
Image Electric Buses:

- More efficient

but ...

- Not enough range
- Too expensive
- Not practicable

Longer operating times for electric Busses with Opportunity Charging

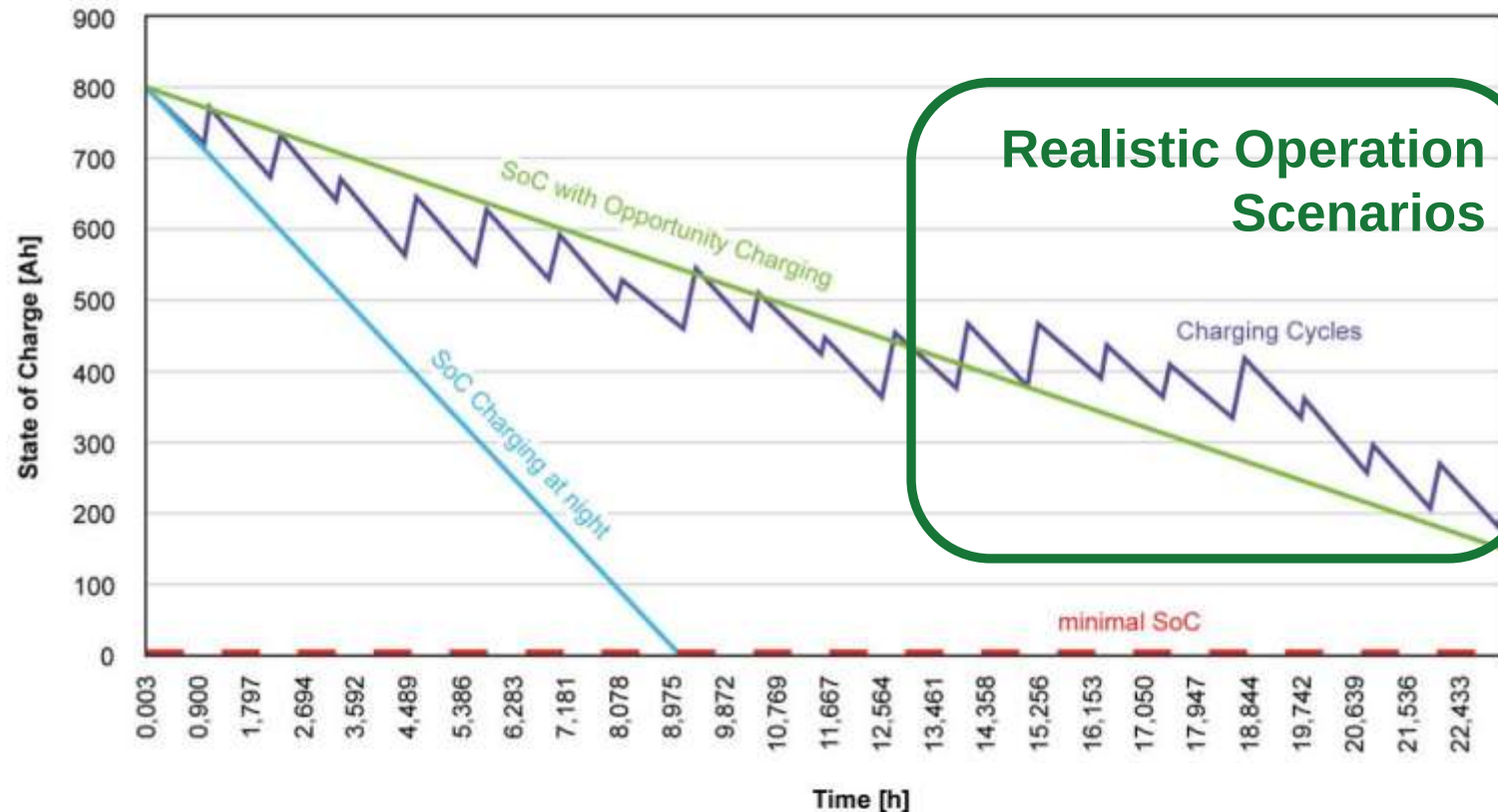


Opportunity Charging with IPT[®]



Need for Opportunity Charging

Longer operating times for electric Busses with Opportunity Charging



Opportunity Charging with IPT®



Trend E-Mobility



Clean
Quite
Safe operation
Protection of resources

Electric Drive Systems

Ecologic & Economic Win-Win with IPT® Charge

No plugs, less batteries
No emission fees
No worries, efficient
Cost competitive

Opportunity Charging with IPT®



Alternatives to Apply Opportunity Charging

Conductive

Catenary Style
Charging Stations



Inductive

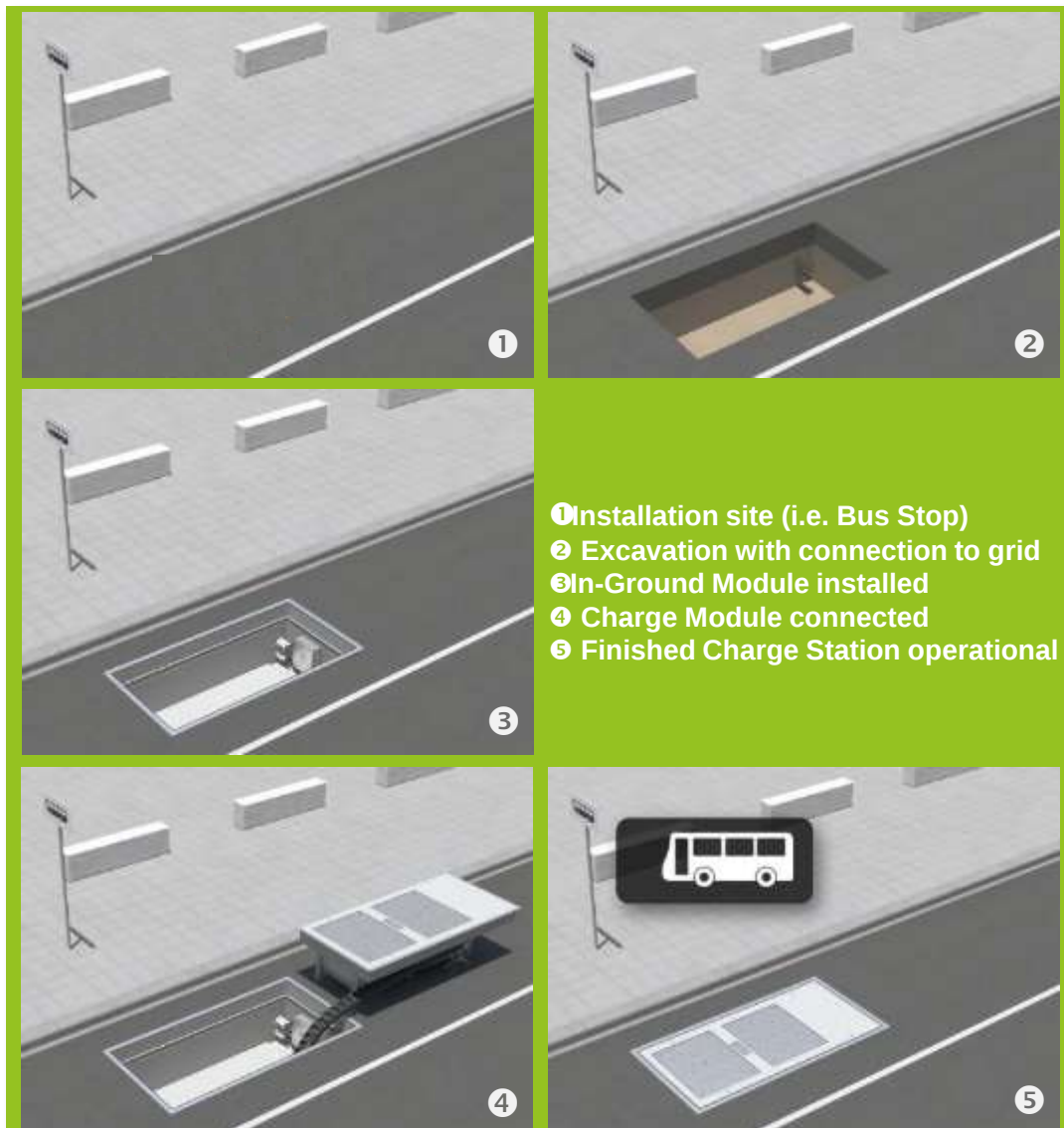
Wireless
Road Integrated Charging
Stations



Opportunity Charging with IPT®



Installation



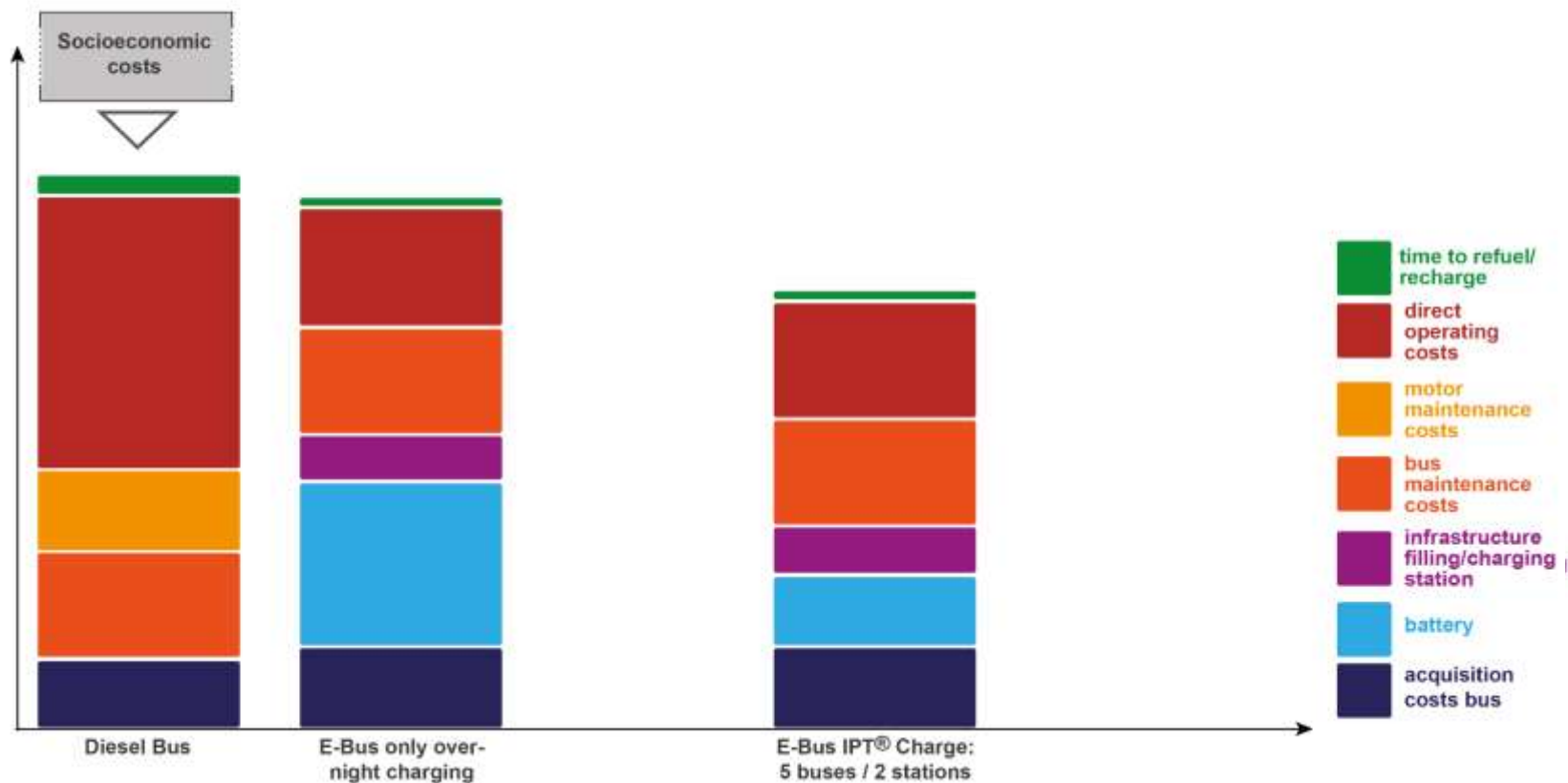
Opportunity Charging with IPT®



Hybrid double-decker bus inductively charged in London



Opportunity Charging with IPT®



Opportunity Charging with IPT®



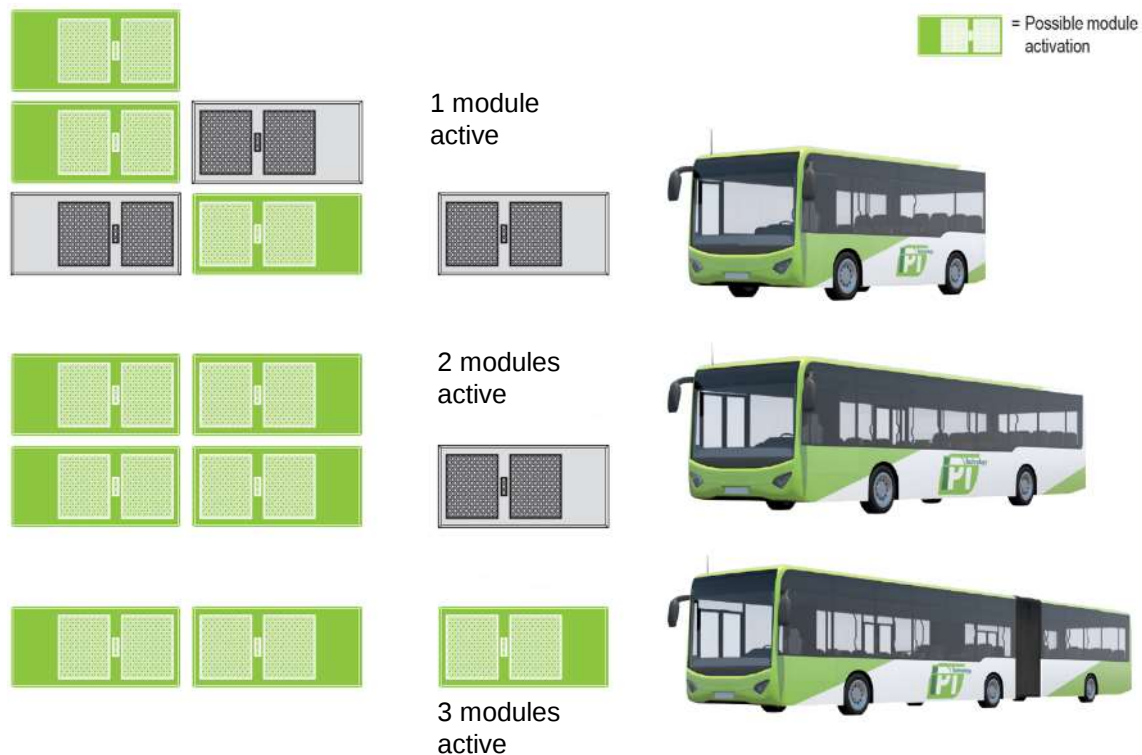
Optimized Infrastructure
For Dense City Traffic & Commuter Routes

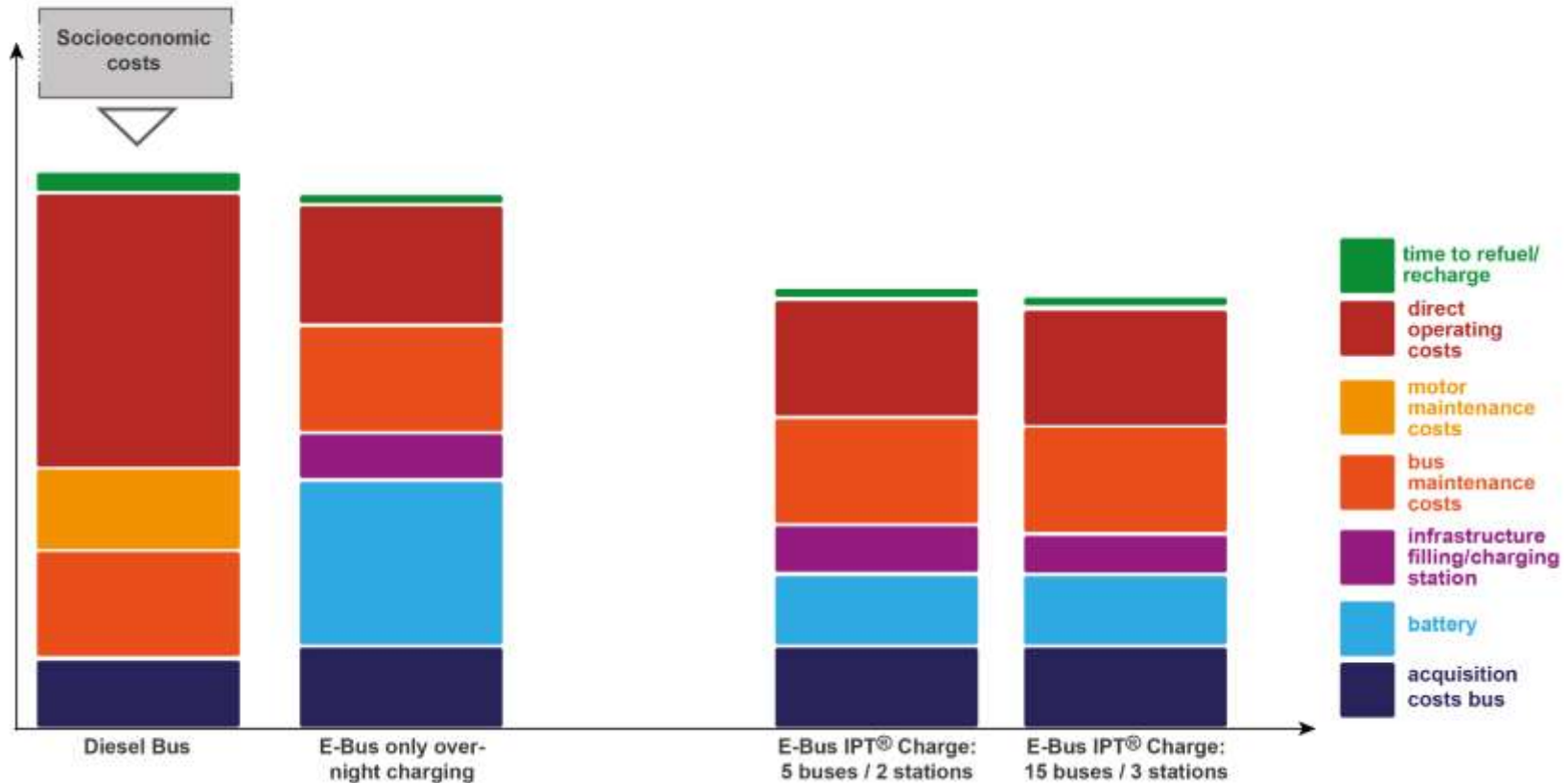


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Modular Setup IPT® Charge





Opportunity Charging with IPT®



More than a Decade of Experience – on the Road and off the Road



© Photographs Material Handling Systems / Factory Automation provided by Conductix-Wampfler GmbH

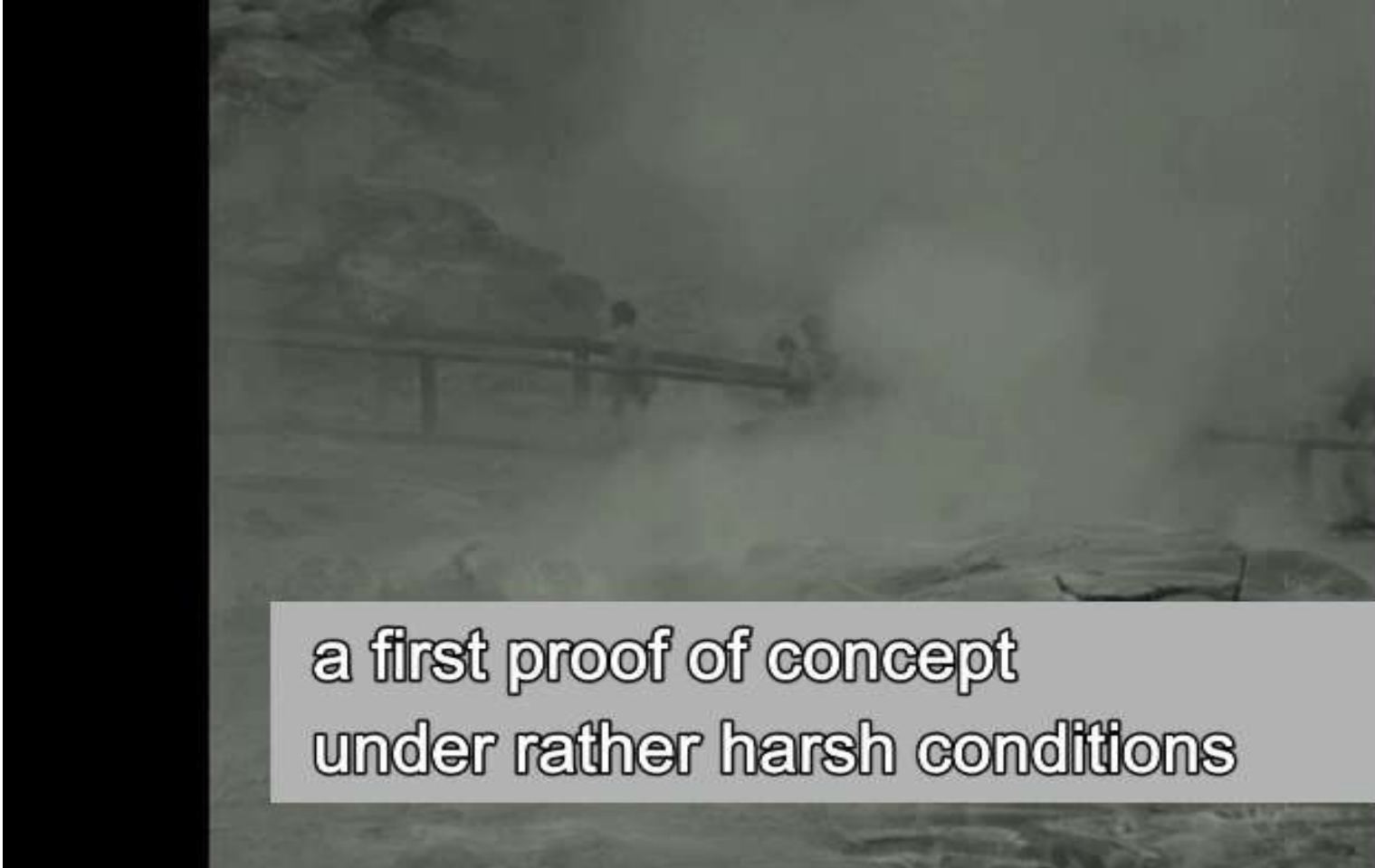


IPT® Charge – Rotorua, Genoa, Luzern, Japan, Utrecht, Chattanooga UTC, s'Hertogenbosch, Milton Keynes, London, Bristol ...

Thank you for your attention!

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An aerial photograph showing a long bridge under construction in a wide river. The bridge structure is visible, with several support pillars and a long span. The water is dark and turbulent, and the surrounding landscape is hilly and forested. The image is somewhat grainy and has a dark, moody tone.

a first proof of concept
under rather harsh conditions



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