

HIGH POWER E-BUS INFRASTRUCTURE

LESSONS FROM DEPLOYMENT



WHO WE ARE



KEY DATES

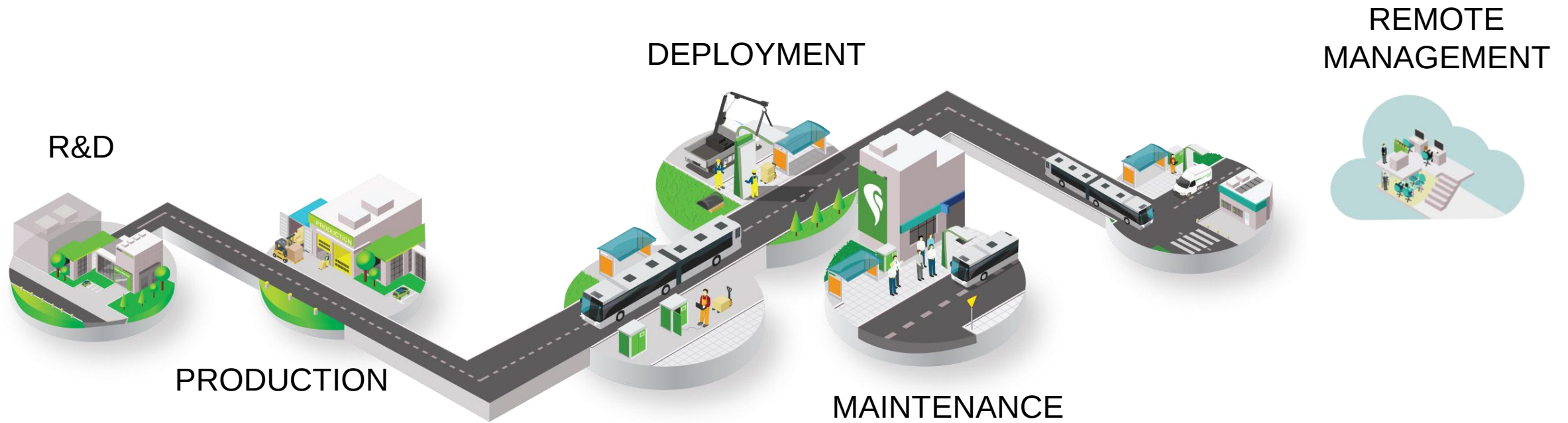
2009 Establishment of the company

2010 First charging project - city of Wrocław

2012 High power chargers for e-buses

OUR OFFER

TURN-KEY CHARGING SOLUTIONS FOR E-BUSES



OUR PRODUCTS



DEPOT CHARGERS
20-80kW



OPPORTUNITY CHARGERS
200-450kW



MATRIX
CHARGING



BUS
CHARGING
CONTROLLER

1

**“THERE IS SO MUCH POLLUTION IN THE AIR
NOW THAT IF IT WEREN'T FOR OUR LUNGS
THERE'D BE NO PLACE TO PUT IT ALL.”**

ROBERT ORBEN

European Environment Agency (EEA) estimates that air pollution is responsible for more than 430 000 premature deaths in Europe.

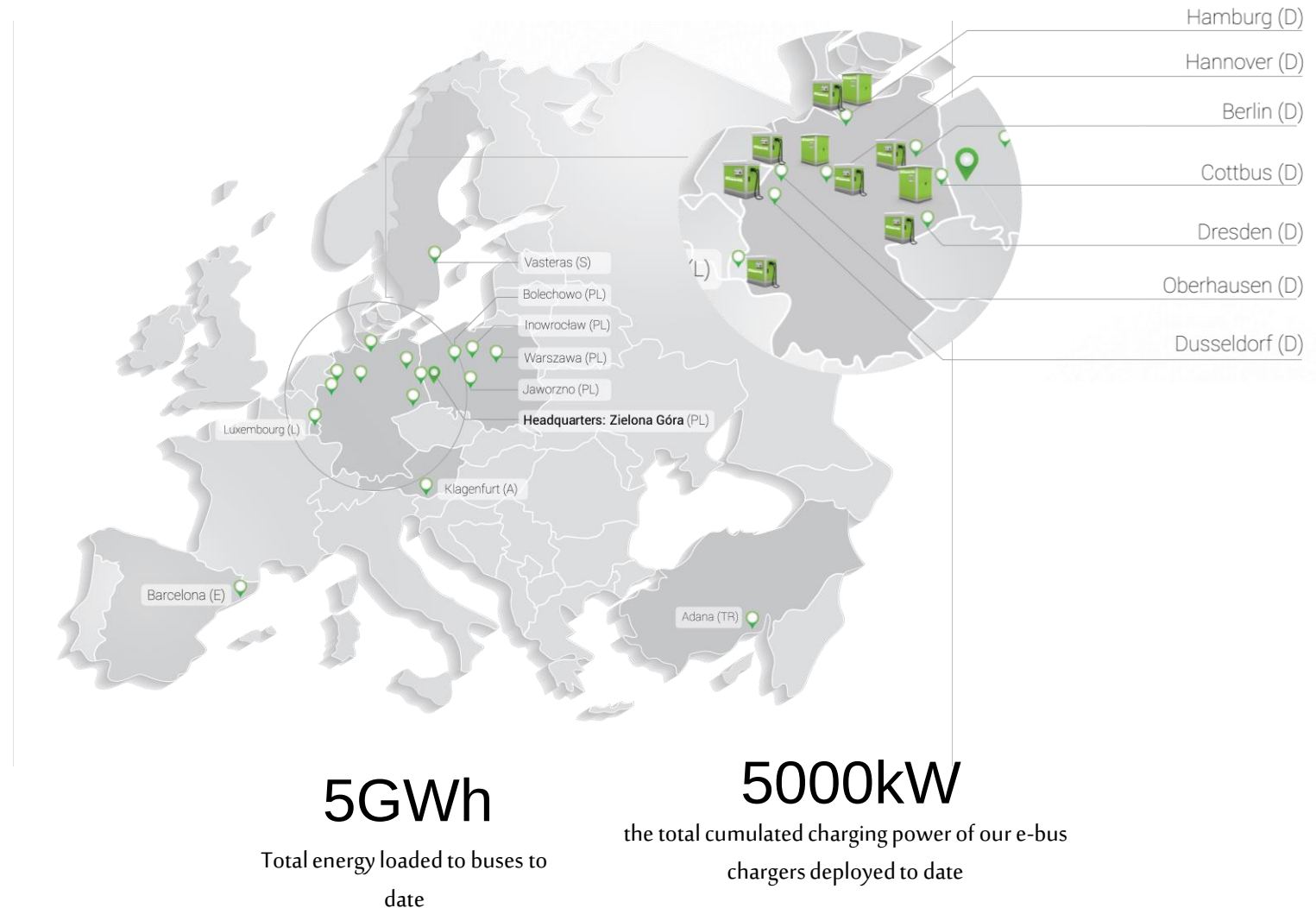
2

*„ in 2023 the sales of electric trucks and buses
will reach 160,000 units globally**
Navigant Research*

*Frost and Sullivan

** Navigant Research <https://www.navigantresearch.com/newsroom/sales-of-electric-trucks-and-buses-are-expected-to-reach-nearly-160000-annually-by-2023>

OUR CHARGERS IN ACTION



JAWORZNO



“An e-bus charges like any other electric device, there needs to be a source of power, a charger and the device. Of course, any technological innovation carries with it its risks but for us it was acceptable, we learnt and now are able to increase our e-fleet”

HANNOVER



450kW 150kW

- Traction powered,
- Serving three charge points,



3 electric Solaris Urbino
12 Buses

“Each city should be able to choose its own charging poles”

BARCELONA



450kW

- Opportunity charger, to be installed in the city,
- The biggest hurdle - administration



Visualisation from Barcelona - photo provided by TMB

LESSONS LEARNED

1



E-bus deployment
= no problem*

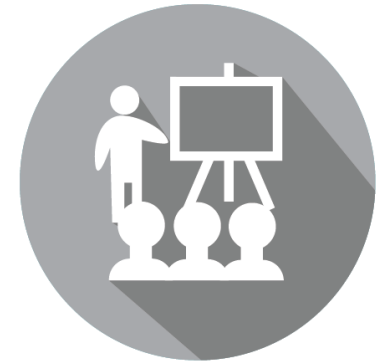
*for some!

2



Design is important

3



Administration
can be a hurdle

TRENDS

1



Smaller,
prettier chargers

2



Infrastructure owned
by charger provider

3



Photo: Schunk Pantograph

Pantograph
for depot charging

THANK YOU!

natalia.kozdra@ekoenergetyka.com.pl

+48 508 856 493

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