

Transição Energética

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The world is evolving... so are the challenges.
And so must the solutions!

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The challenge

Transforming existing energy systems

Industrial Systems

Transportation

Smart Cities and Buildings

Industrial Systems

Customer case DES Project– Cogeneration @ Braskem



Customer priorities:

- Reduce NG consumption
- Reduce Grid Energy consumption
- Power plant availability and reliability



Siemens Solution

- Implementation of a CHP plant with Gas Turbine and HRSG
- Replacement of steam turbines by electrical motors
- Business model: BOO
- Energy efficiency project: converting residual process gas (FG) into electrical energy



Data Analysis

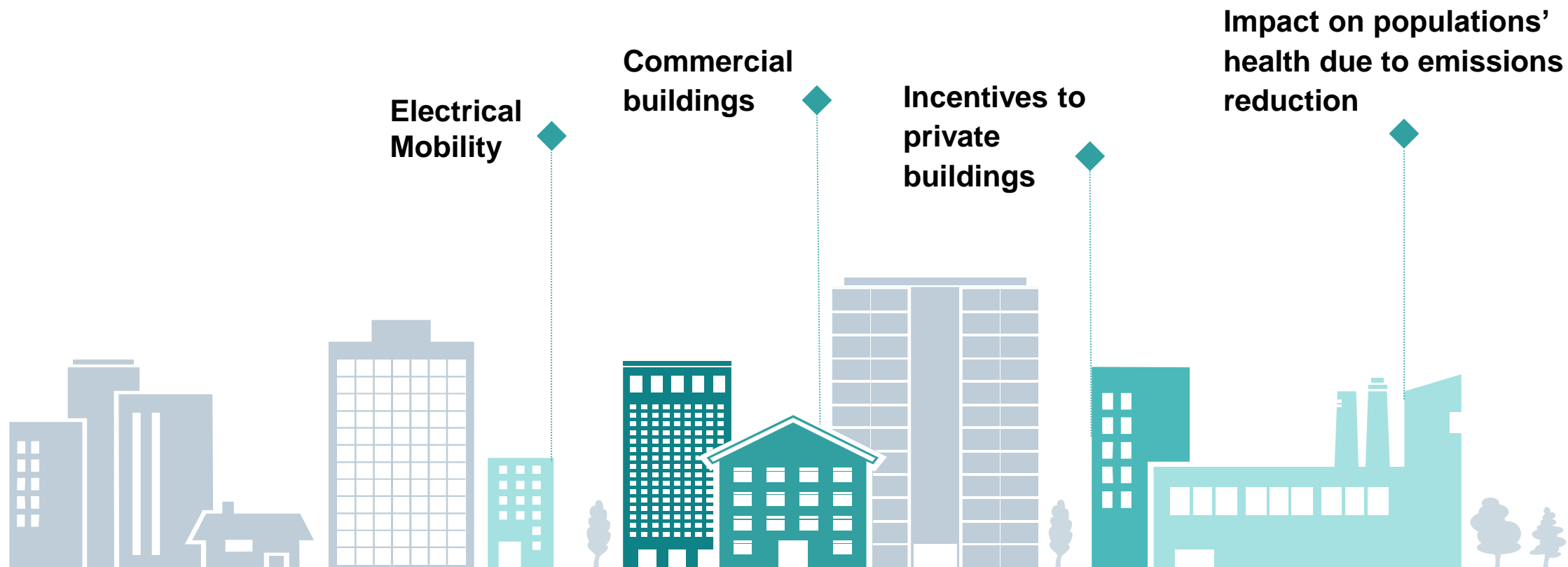
that enables
the identification of...

- Most energy-consuming equipment
- Hours with most energy consumption
- How is the division of the energy costs



Smart Cities and Buildings

City Performance Tool (CyPT) – analyse more than 300 cities indicators to drive sustainable growth



The City of Jundiaí chose to focus on 10 major future technologies

Buildings



Public buildings - monitoring of building efficiency

Public buildings - demand-driven lighting

Public buildings - photovoltaic



Transportation

Demand reduction for cars

Electric bus

Bicycle paths



Energy

LED street lighting

Solar heating

Demand-Driven Road Lighting



Transportation




E-Bus depot
incl. opportunity
charging


Gas stations &
truck stops


Enterprises
& retailers


Operating center


Highway transit
charging


City & town
street parking



Logistics depot
charging

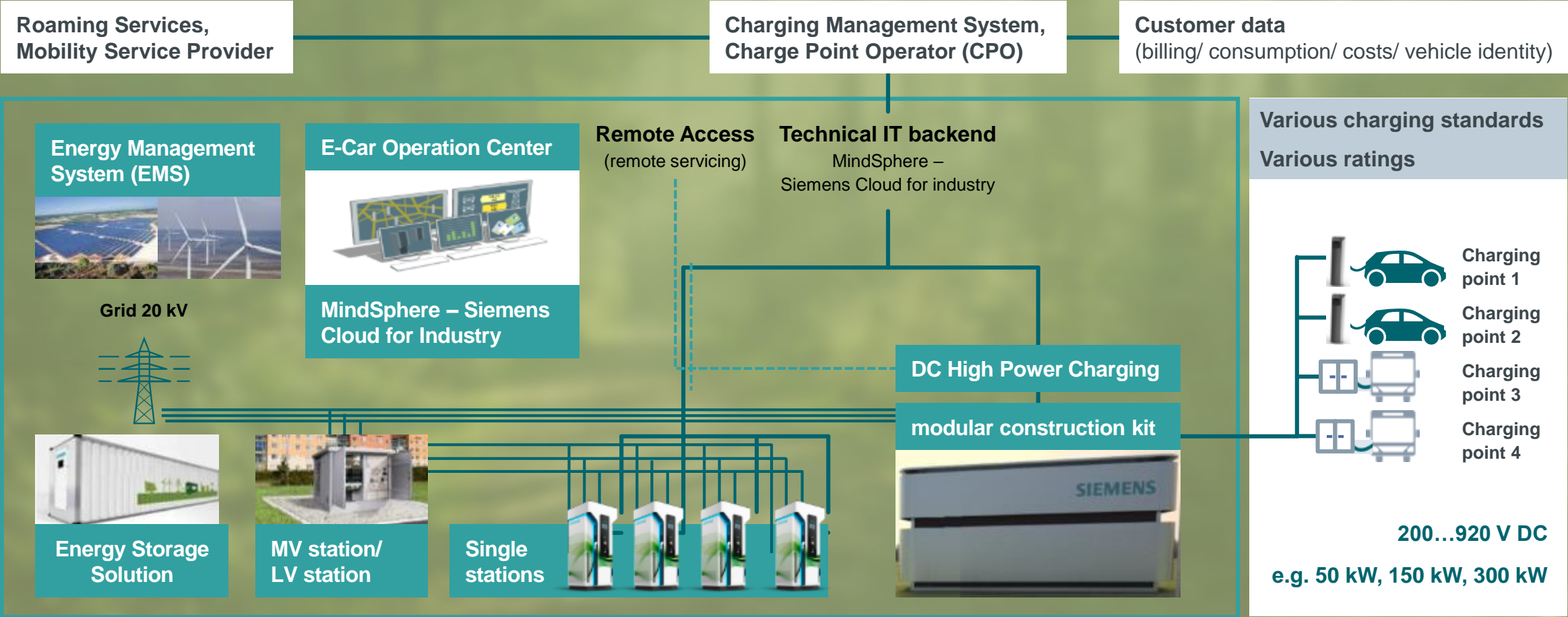

Parking garage
& commercial real estate


Residential-home
& multi home

An entire infrastructure to provide affordable, green and reliable energy will be necessary



Power distribution	 Flexible and modular grid access	 Space optimized	 MV & LV distribution on site "clean-air"	 Busbar trunking system
Charging infrastructure	 Charging poles – Plug-in or roof-mounted	 Indoor pantograph	 Fast charging stations outside	 Integration of e-cars service fleet
Distributed Energy Systems and services	 Renewable integration micro-grid	 Modular storage & second life	 Monitoring & control SW	 Consulting, oper. & managed services



Trucks electrification Contributing to a sustainable transportation

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Customer priorities:

- Operational costs optimization
- Environmentally friendly solution



Siemens Solution

- The hybrid solution reduce the use of fossil fuels and truck operating costs, at the same time eliminating local emissions such as CO2 and nitrogen oxides
- Sustainable, clean and economical mine operation

Electric flight
Modeling the future of flight

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The first prototype of an electric plane was presented during the Paris Air Show 2019.

The prototype is based on Siemens' all-electric propulsion systems for aircraft.

What's needed



Cocreate innovative solutions
with customers

Public Policies and initiatives
to assure further development

Regulation in the
transportation segment

Carbon Pricing to sustainable
growth

Thank you.