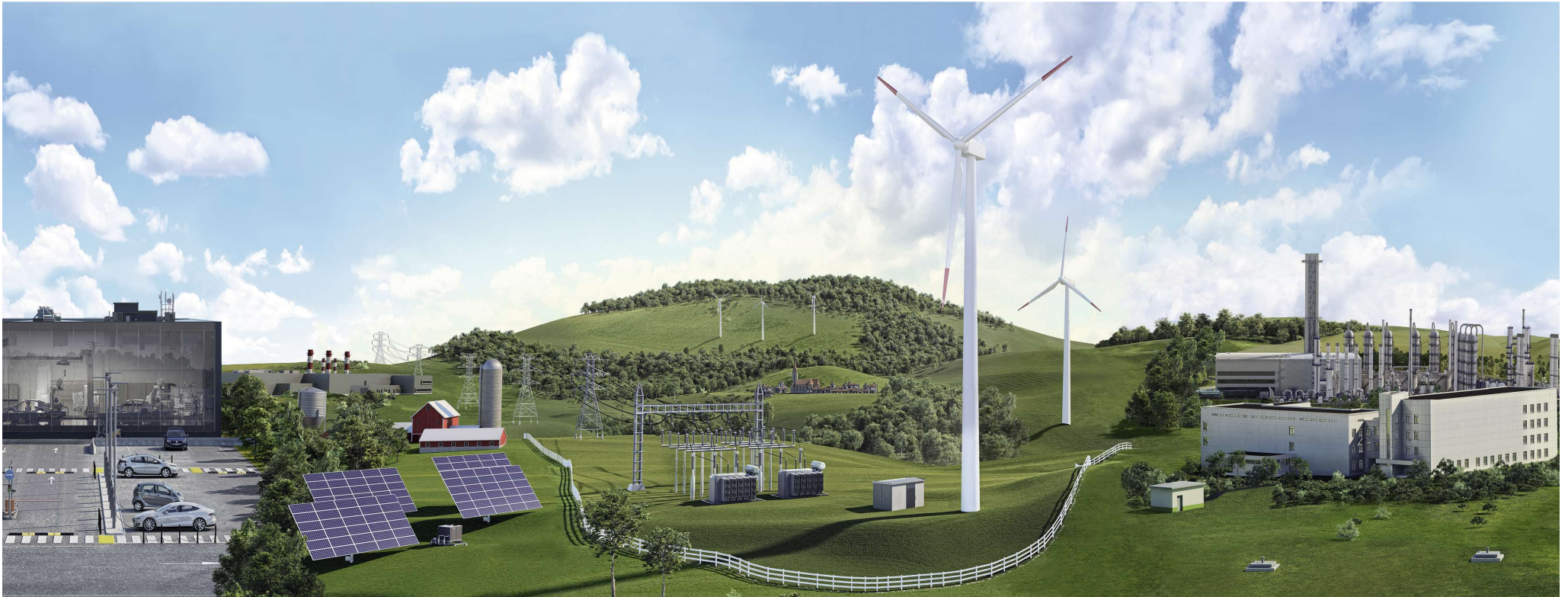


PHOENIX CONTACT E-Mobility

Managing charging parks – integrating e-mobility for the future



PHOENIX CONTACT E-Mobility

Pioneers of fast charging technology



- Phoenix Contact E-Mobility is the competence center for electromobility within the Phoenix Contact Group
- Reliable partner to the automotive industry
- Further development and worldwide standardization of a modern charging infrastructure suitable for everyday use
- Development of trend-setting technologies such as High Power Charging

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Our worldwide locations



Germany

- PHOENIX CONTACT E-Mobility GmbH
- Headquarters (administration, development and production)
- Founded in 2013



China

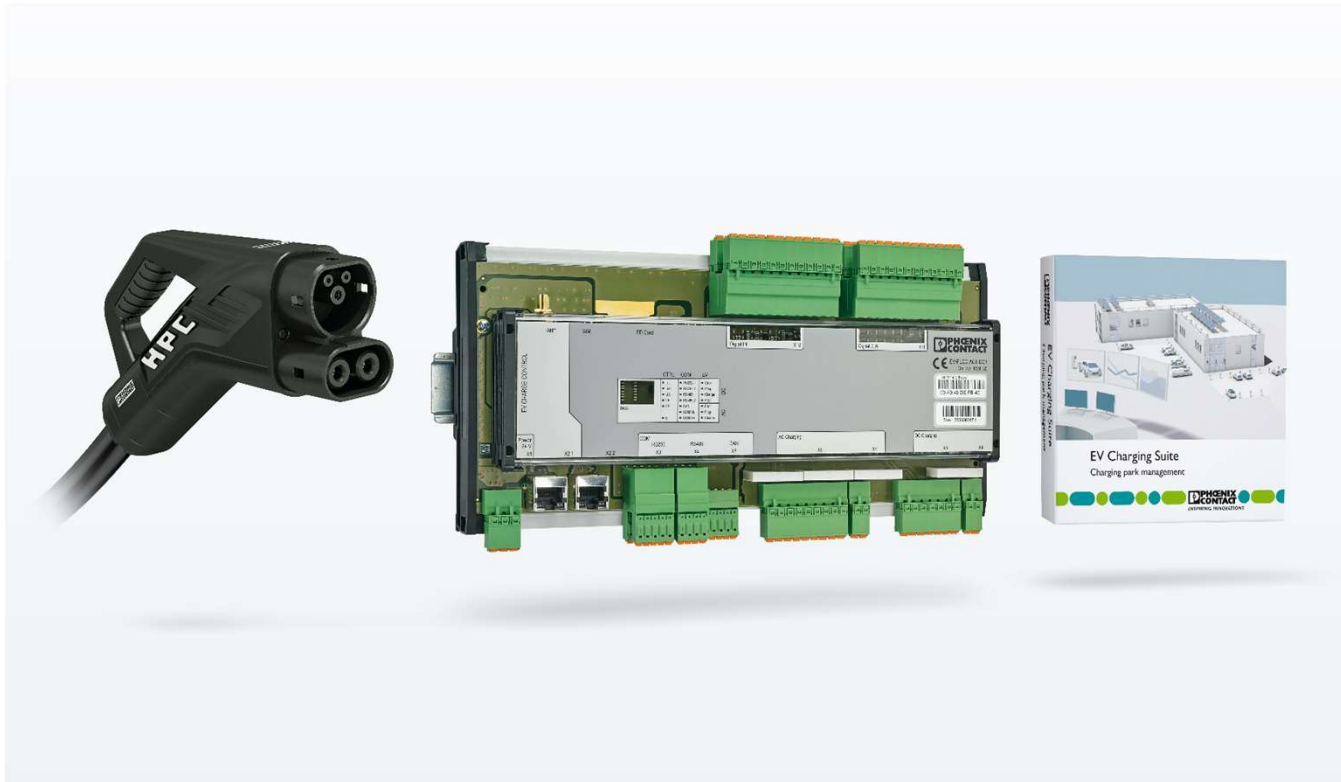
- PHOENIX CONTACT (Nanjing) E-Mobility Technology Co., Ltd.
- Development and production
- Founded in 2015



Poland

- PHOENIX CONTACT Wielkopolska Sp. z o.o.
- Since 2018 also production for PHOENIX CONTACT E-Mobility

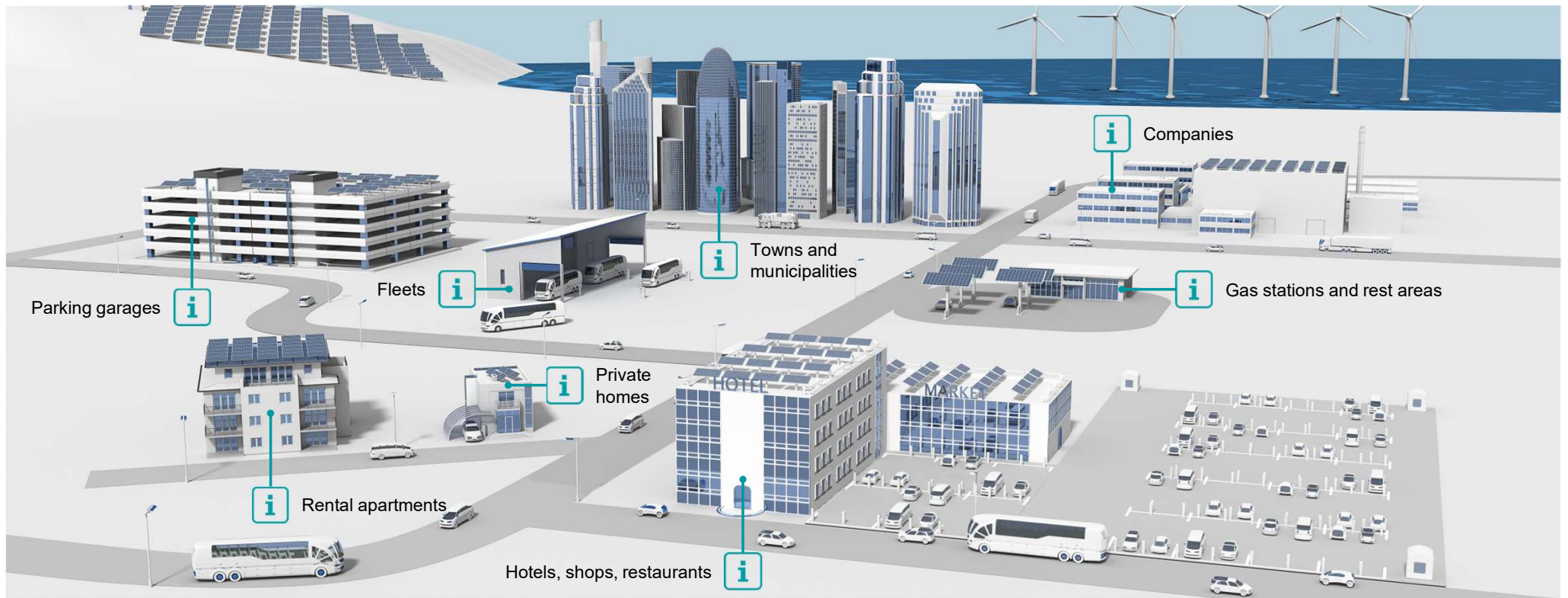
Our portfolio for the entire charging process



- Our broad product portfolio offers nearly all components for the construction of your charging stations:
 - Charging cables and sockets
 - Charging controllers and software
 - Connection and automation technology

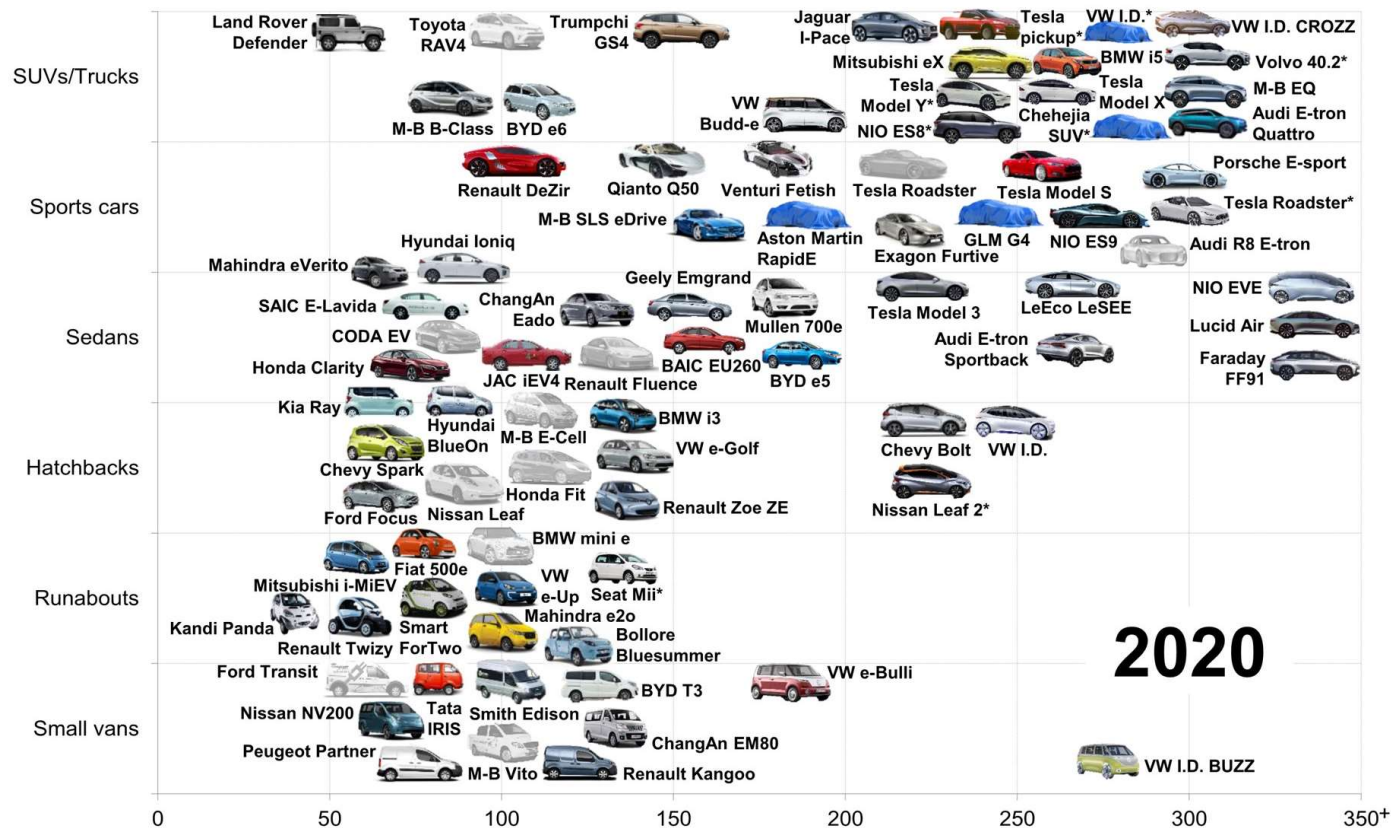
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The right products for every application



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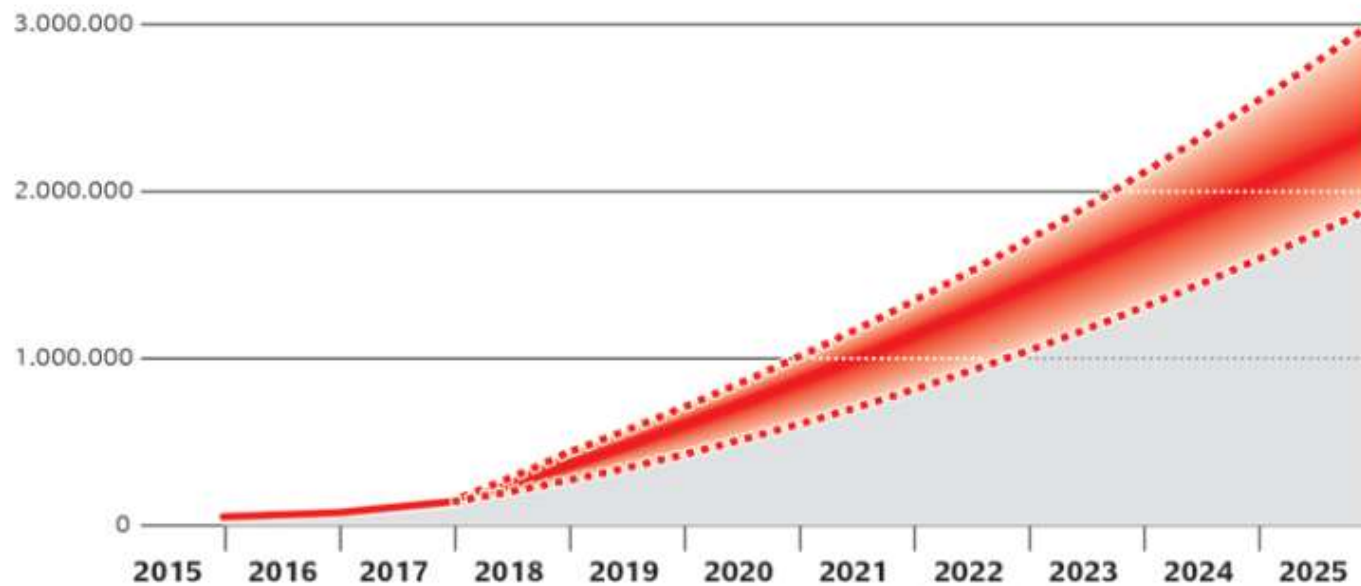
Availability of electric vehicle models by 2020



Market development of electric vehicles in Germany

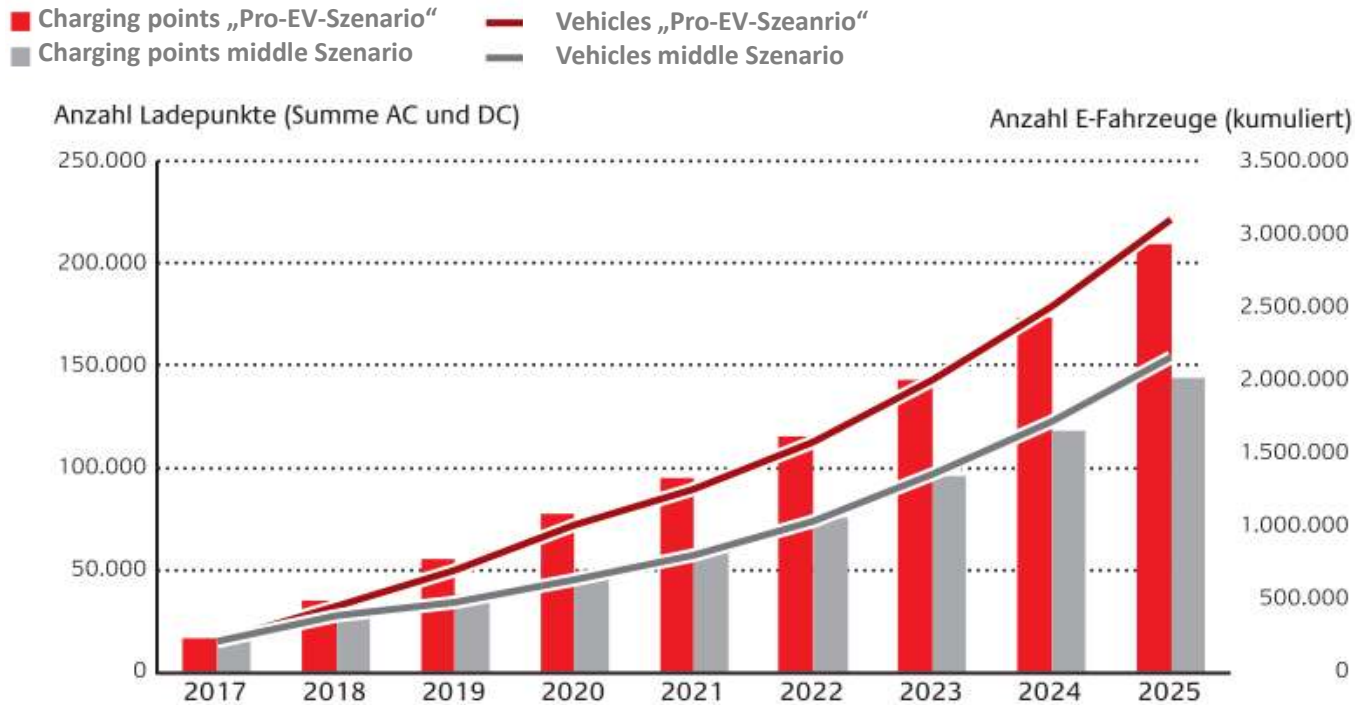


Sold electric vehicles



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Market ramp-up of e-vehicles and charging infrastructure

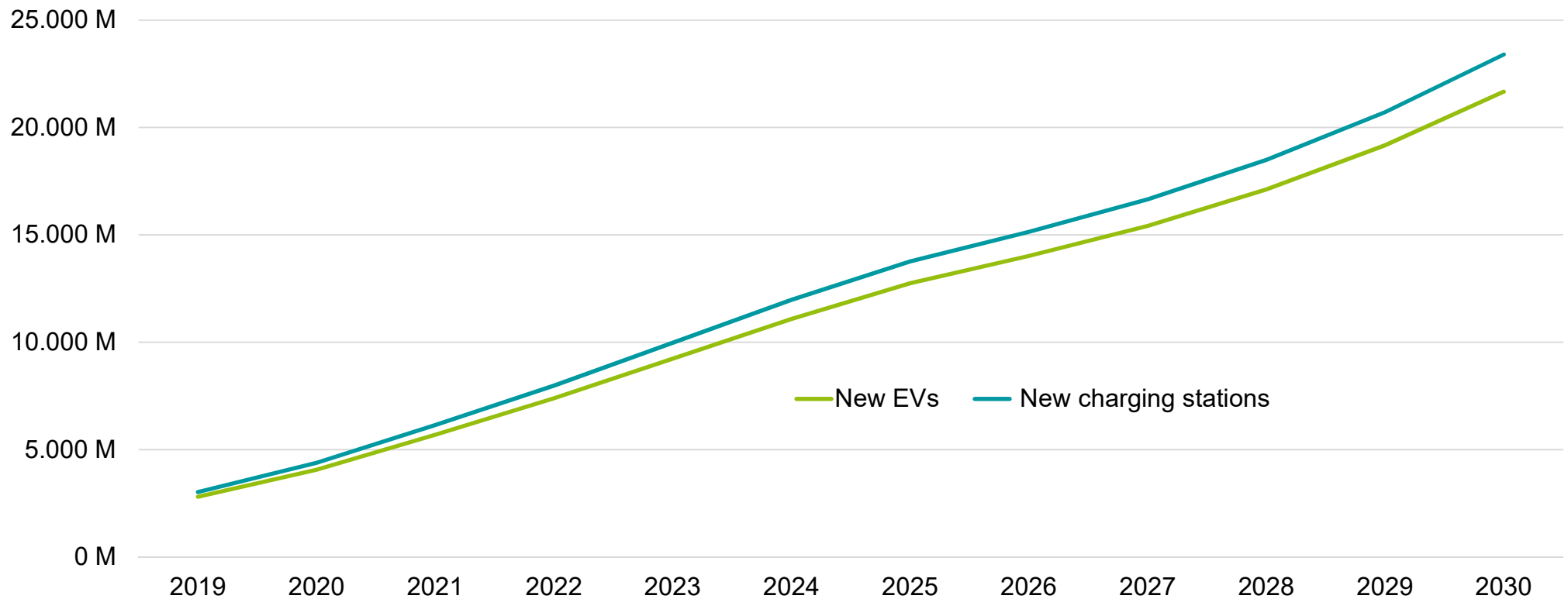


Bis 2025 ergibt sich ein Bedarf von 145 Tsd. bis 210 Tsd. Ladepunkten im öffentlichen Bereich und von 2,4 bis 3,5 Mio. Ladepunkten im privaten Bereich.

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Global forecast of EVs and charging stations



Effects on network infrastructure

- Is the electricity produced sufficient for electromobility at all?



The "Energy Turnaround"

Restructuring the energy system

Changed power supply

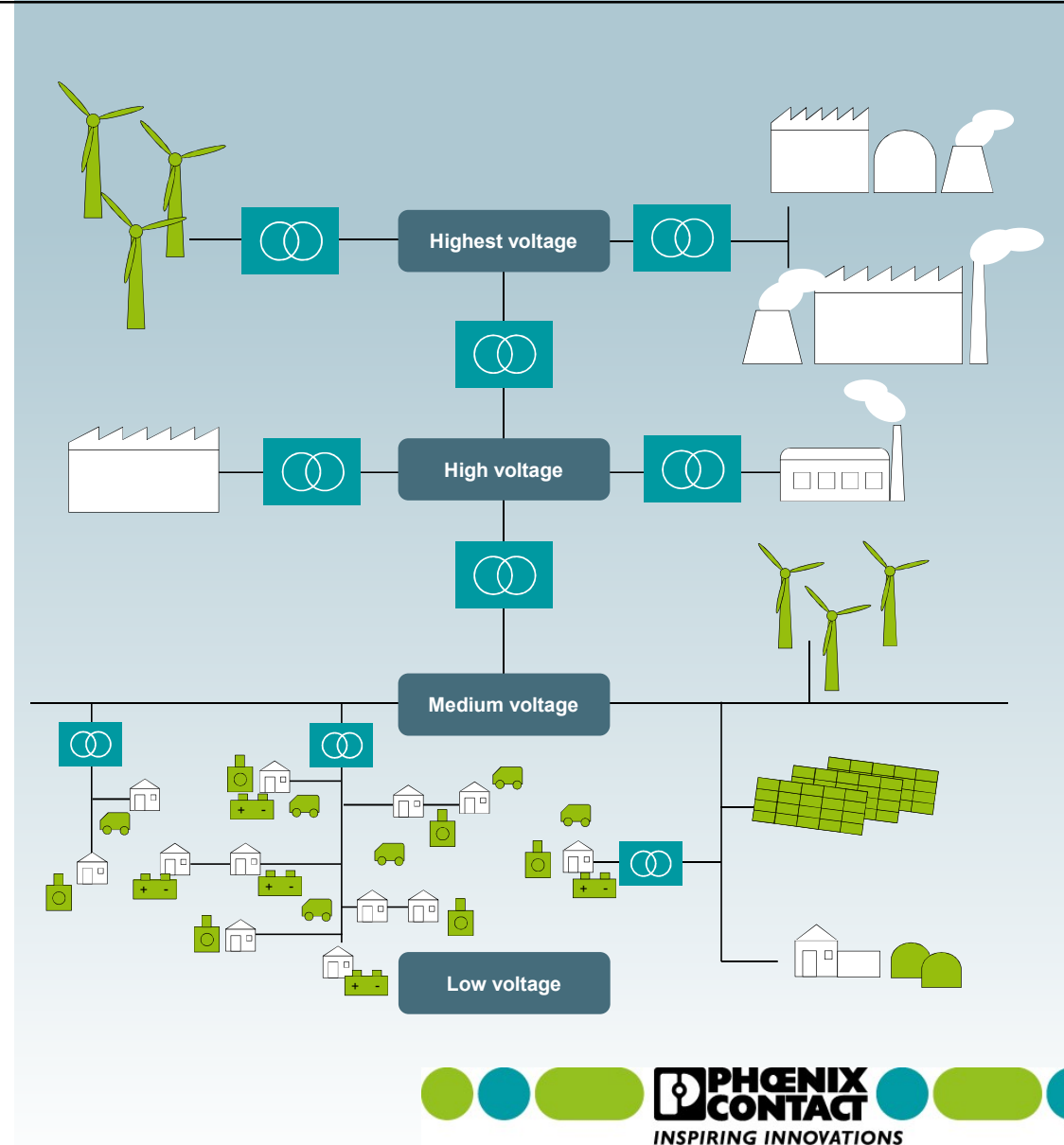
- ✓ Wind power
- ✓ Photovoltaics
- ✓ Nuclear energy and coal phase-out
- ✓ Block-type thermal power stations (small gas-fired power stations)
- ✓ Biomass

New electrical consumers

- ✓ Electric vehicles
- ✓ heat pumps

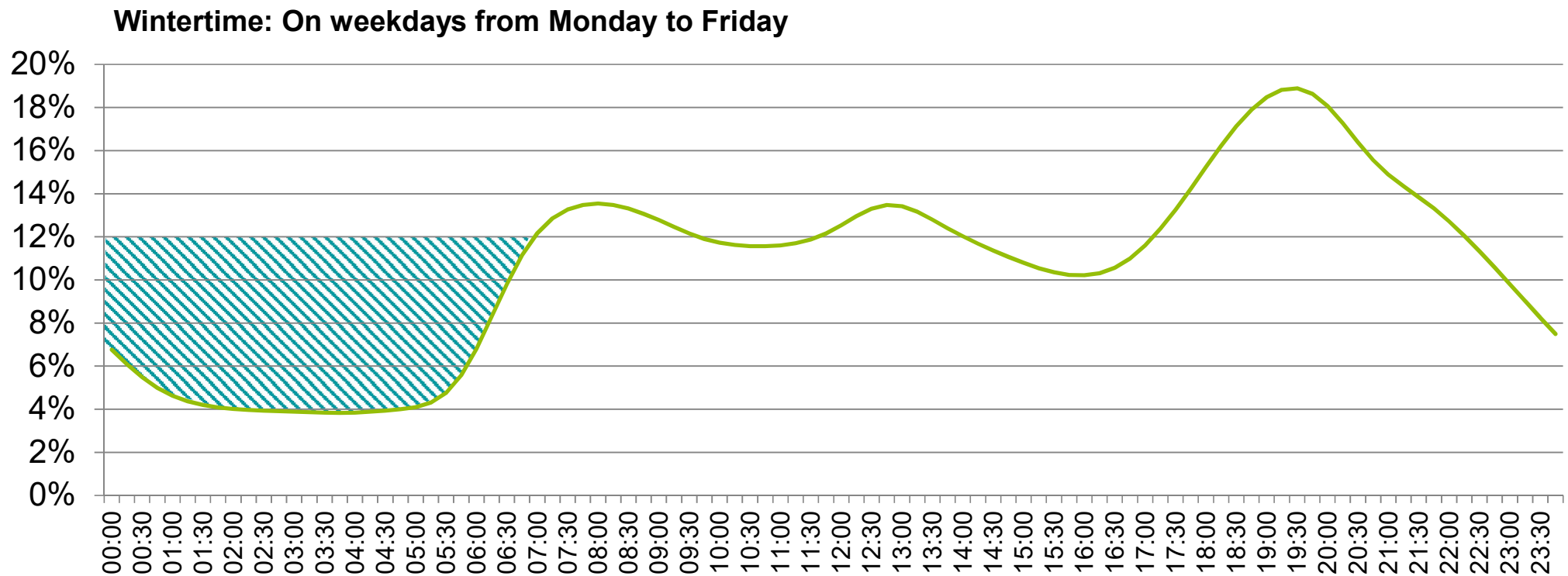
Memory

- ✓ Electric accumulators
- ✓ Biogas storage
- ✓ Thermal storage
- ✓



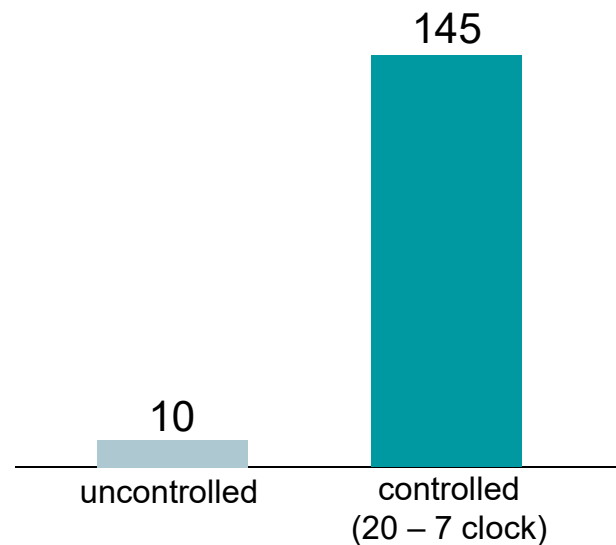
Why we need network-grade charging, storage and smart home systems....

Load profile H0 (BdEW)

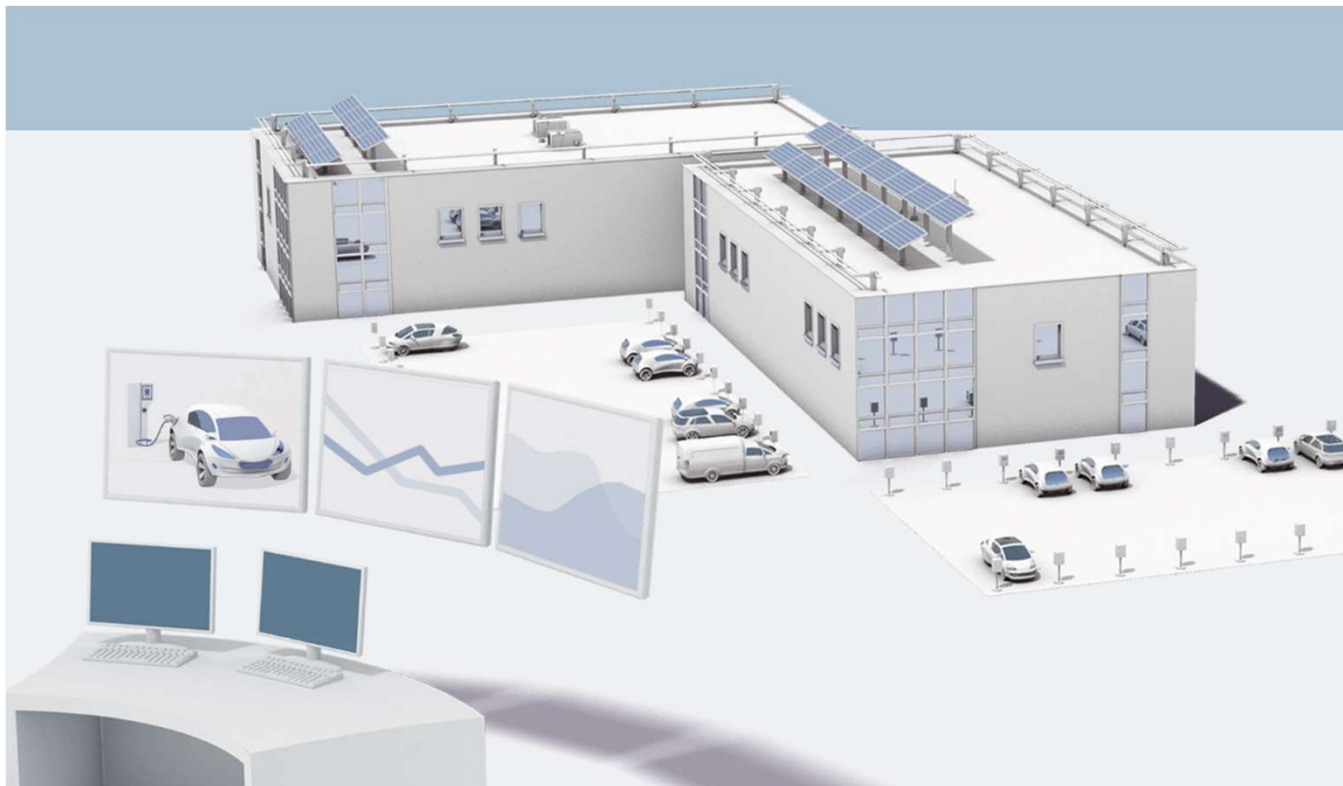


Using the grid efficiently with intelligent control systems

Maximum number of installable charging points at a local network station



EV Charging Suite – intelligent management of charging stations



- ✓ **All in one software**
The interface between driver, billing provider, electricity grid operator, charging park operator
- ✓ **Intelligent distribution**
Optimum load distribution and increased availability
- ✓ **Comfortable control**
Configure and monitor your charging park via web browser
- ✓ **Future-proof investment**
with scalable licenses
- ✓ **Get started right away**
with pre-installed industrial PCs

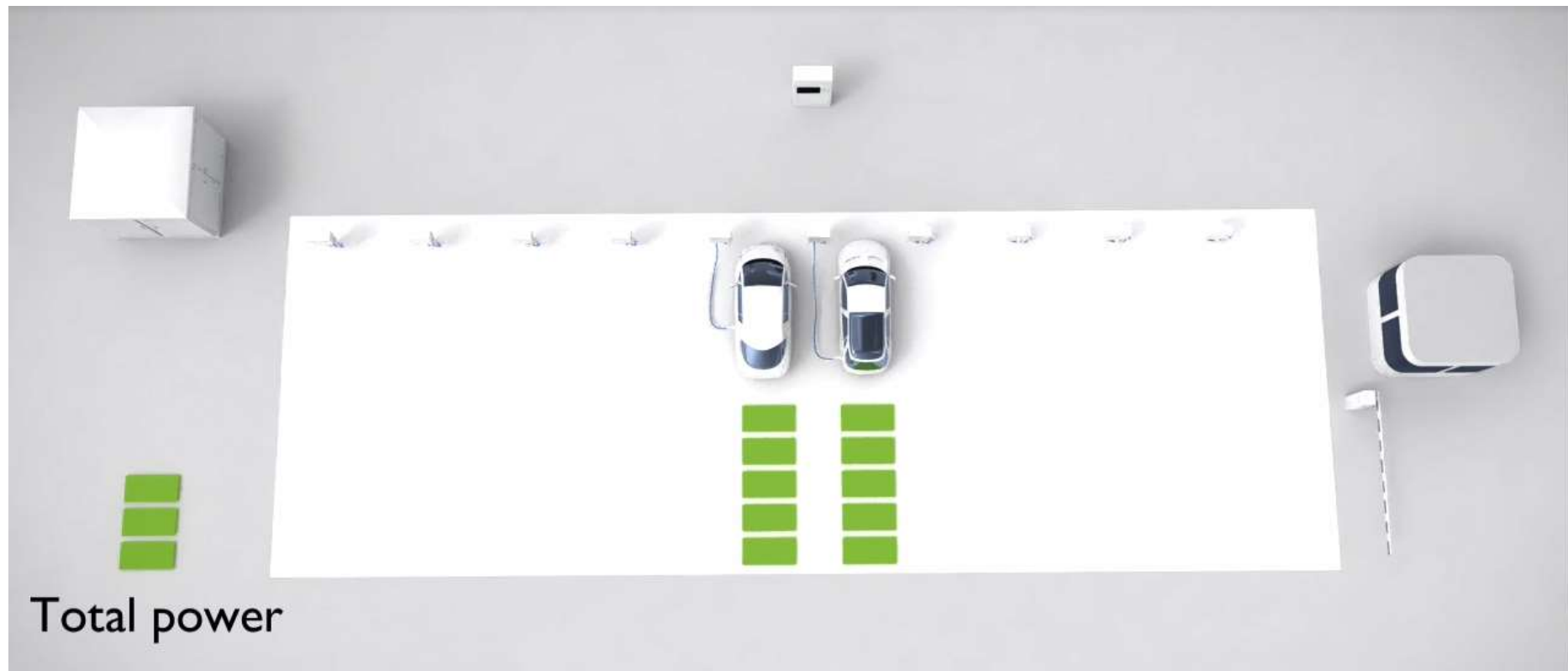
Load and charge management

- distributes the connected load optimally to all charging points
- Distribution of the available power along the operational charging points according to selectable schemes
 - Equal distribution
 - User priority
- During commissioning, the power limit is set as a static value or dynamically adjusted via a higher-level energy management system.



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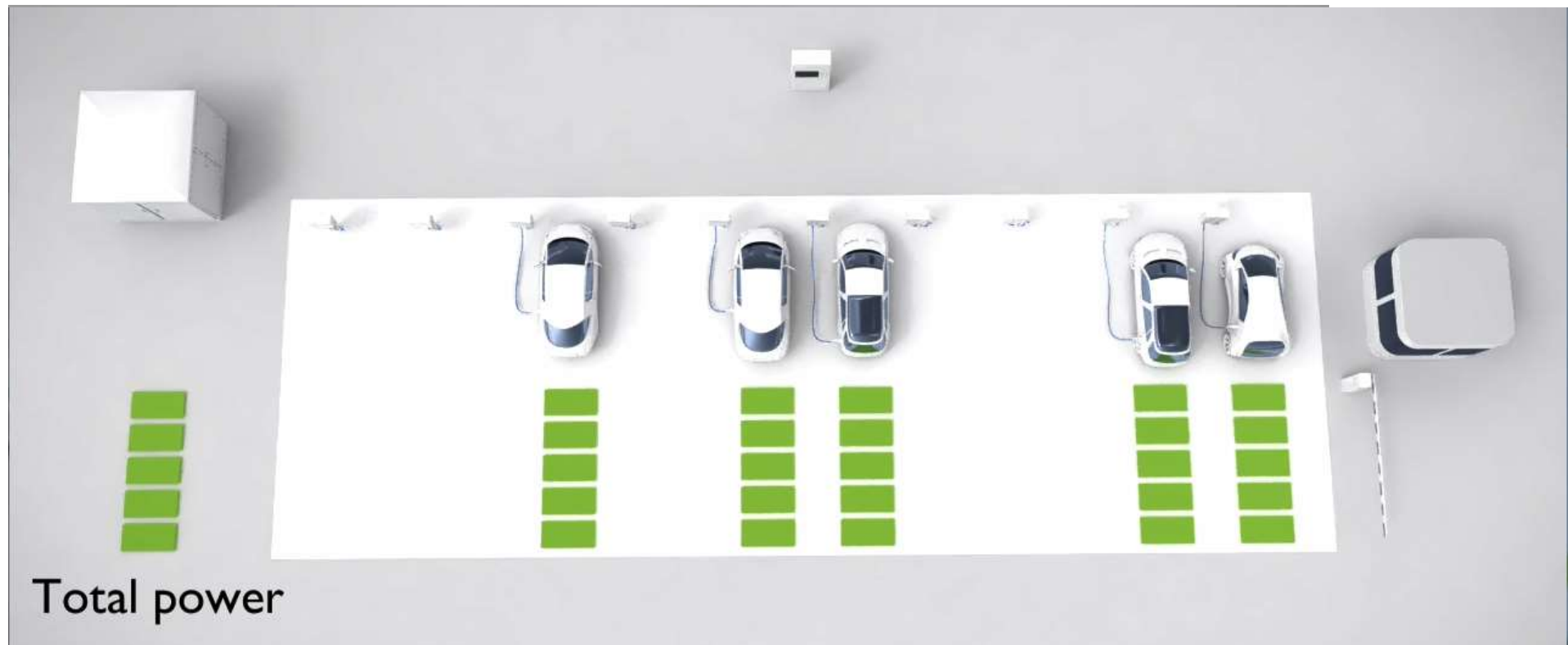
Intelligent distribution



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Intelligent distribution



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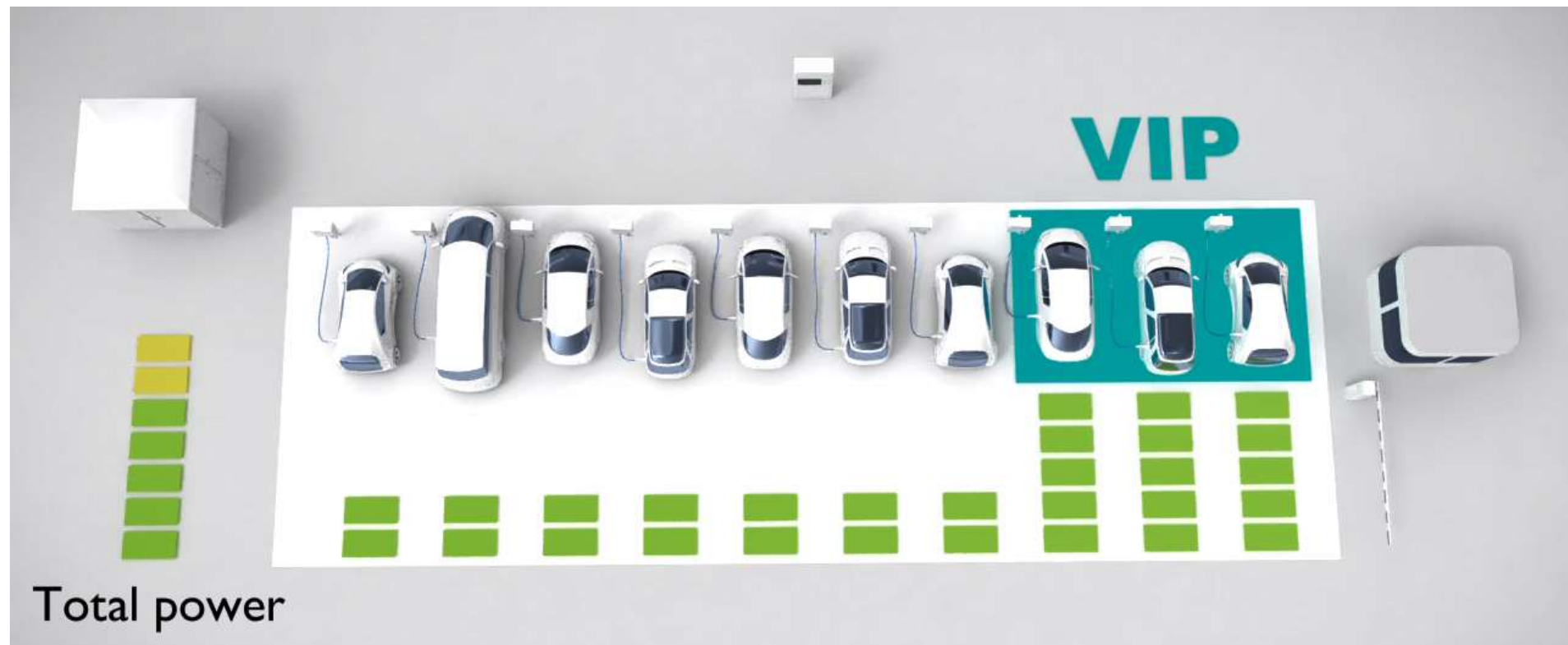
Intelligent distribution



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Intelligent distribution



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Comfortable control



- Configure, control and monitor your fleet via web browser
- Manage users and charging points, release charging operations
- Access all data, clearly visualized and exportable
- Tailored user roles offer the right rights for plant operators, service technicians and operating personnel

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Future-proof investment



- Depending on the size of your charging fleet, you will receive staggered software licenses for 10, 30 and 50 charging points.
- Simply add new attachment points - without complete reconfiguration
- For larger extensions we offer low-cost upgrade licenses

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Get started immediately with pre-installed IPCs



- Save installation effort and get started right away with pre-installed Valueline industrial PCs
- Intuitive touch operation for charge park customers
- Designed for outdoor use and easy to read even in strong sunlight
- Hardware tailored to the system requirements of the EV Charging Suite

Network controllability

