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Presenter



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# The cities & communities that live, move and create Mission to Zero



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# Smarter, sustainable cities and communities



Smarter  
infrastructure



Smarter  
buildings



Sustainable  
Transportation



Towards greener, smarter cities and infrastructure, with tangible customer values



100% COMFORT  
Buildings that  
care about you



NET ZERO  
Emission  
transportation



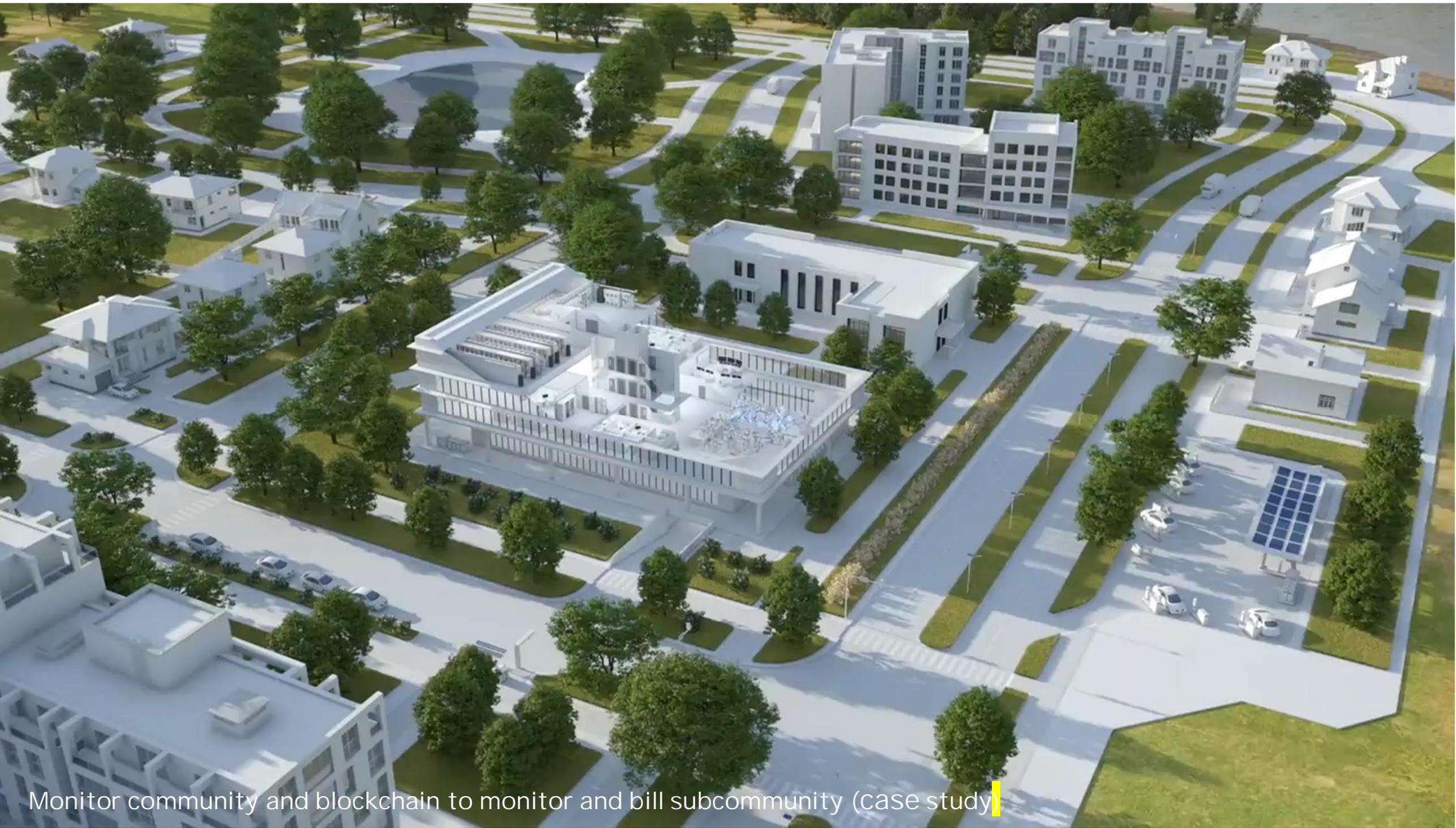
UP TO 30%  
Energy savings



CO<sub>2</sub> NEUTRAL  
Manufacturing  
facilities



24 / 7 / 365  
Insights into  
the assets



Monitor community and blockchain to monitor and bill subcommunity (case study)

# End-to-end Blockchain Solution for Residential Energy Communities

Switzerland

APPLICATION  
Utility, Buildings

CUSTOMER / SITE  
Ormera / Communities

## CUSTOMER NEEDS

Fully automated cost effective and transparent billing process

Compliance with new regulation in CH

The community with the single point of connection to the grid and the single utility meter, the single billing point;

## SOLUTION

Metering and submetering solution based on blockchain technology:

- ABB smart meter solution package (InSite pro M + EQ meters)
- Ormera SW solution.

## BENEFITS

Minimal effort for administration  
Cost efficiency, low service prices for tenants  
Secure and transparent solutions



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## State of the art solution for CO<sub>2</sub>-neutral and energy self-sufficient factory

Germany

Busch-Jaeger

Buildings | Industrial

### CHALLENGE

To create a first CO<sub>2</sub>-neutral production site.

### SOLUTION

The technological centrepiece of the entire system in Luedenscheid is the scalable energy management system OPTIMAX® from the ABB Ability™ Energy Management Suite. The entire system brings together other ABB technologies that are digitally interconnected. For example, a battery energy storage system (BESS). In addition, ABB charging points, provide for an additional improvement in the regional eco-balance. This single-source energy management solution is rounded off by building automation solutions as well as smart switchgear for energy distribution.

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The installed ABB technology will generate enough power to cover on sunny days 100 percent of the factories power requirements. This intelligent ecosystem enhances energy efficiency, sustainability and resource conservation, enabling a genuine zero emission future for industry and beyond.

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✓ 630 tonnes of CO<sub>2</sub> savings



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## Mission to Zero

Energy self-sufficient and CO2 neutral - the industrial production of the future

With "Mission to zero", ABB is pursuing the vision of energy self-sufficient and CO2-neutral industrial production\*. For this, renewable energies are linked with scalable energy management solutions. In Ludenscheid, ABB has presented the group's first almost climate-neutral production site to the public in spring 2019 after a two-year planning and construction phase.



ABB Busch-Jaeger receives the German Solar Award 2019 in the category "Industrial, commercial or agricultural businesses / companies" for the "Mission to Zero" project. With this prize the association "Eurosolar and EnergieAgentur.NRW" recognized ABB's first almost CO2-neutral production site in Germany

# From vision to mission

## “Mission to Zero” at the ABB site in Ludenscheid

### Facts and figure Ludenscheid

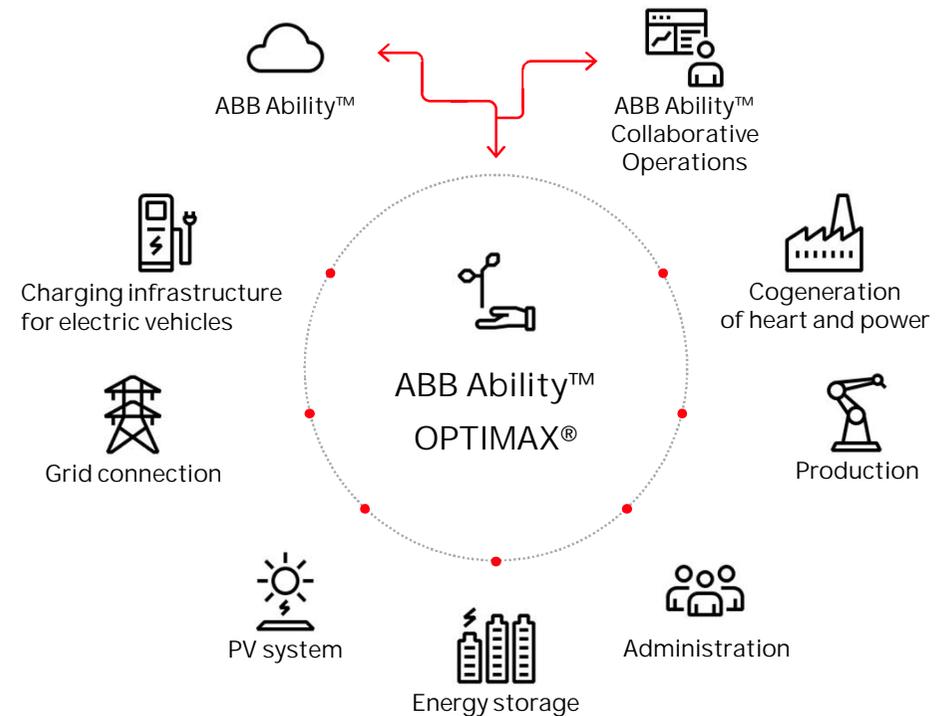
- Approx. 1.100 MWh/yr solar power
- 5,75 GWh/yr total energy consumption for buildings and production
- 200 kW CHP (100% green gas in 2020)
- 1.250 kWp PV
- 200/275 kWh battery storage
- Up to 230 kW charging infrastructure for cars (planned + 200kW)
- 24% PV power in 2020
- Approx. 230 T€/yr savings
- Approx. 630 tons CO<sub>2</sub>-saving per year
- 100% green power over grid
- CO<sub>2</sub> compensation certificates
- Approx. ROI = 6,x years



7650 m<sup>2</sup> solar panels



Saves 630 tons of CO<sub>2</sub> per year and thus costs



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## Local Energy Community Oud Heverlee

### First Neighborhood Battery Storage

The battery is storing the rest of the energy generated by the the Solar panels of the customers up to 90kWh and provide it back during peak moments.

The battery increases not only the efficiency of the PV installation. The battery is also connected and support the local grid that ran to it's limits with the growing investments in Heatpumps, EV and PV.

The investments in the Oud Heverlee Local Energy community started already 10 years ago with the ZEHR projects and after several updates now has led to the battery storage



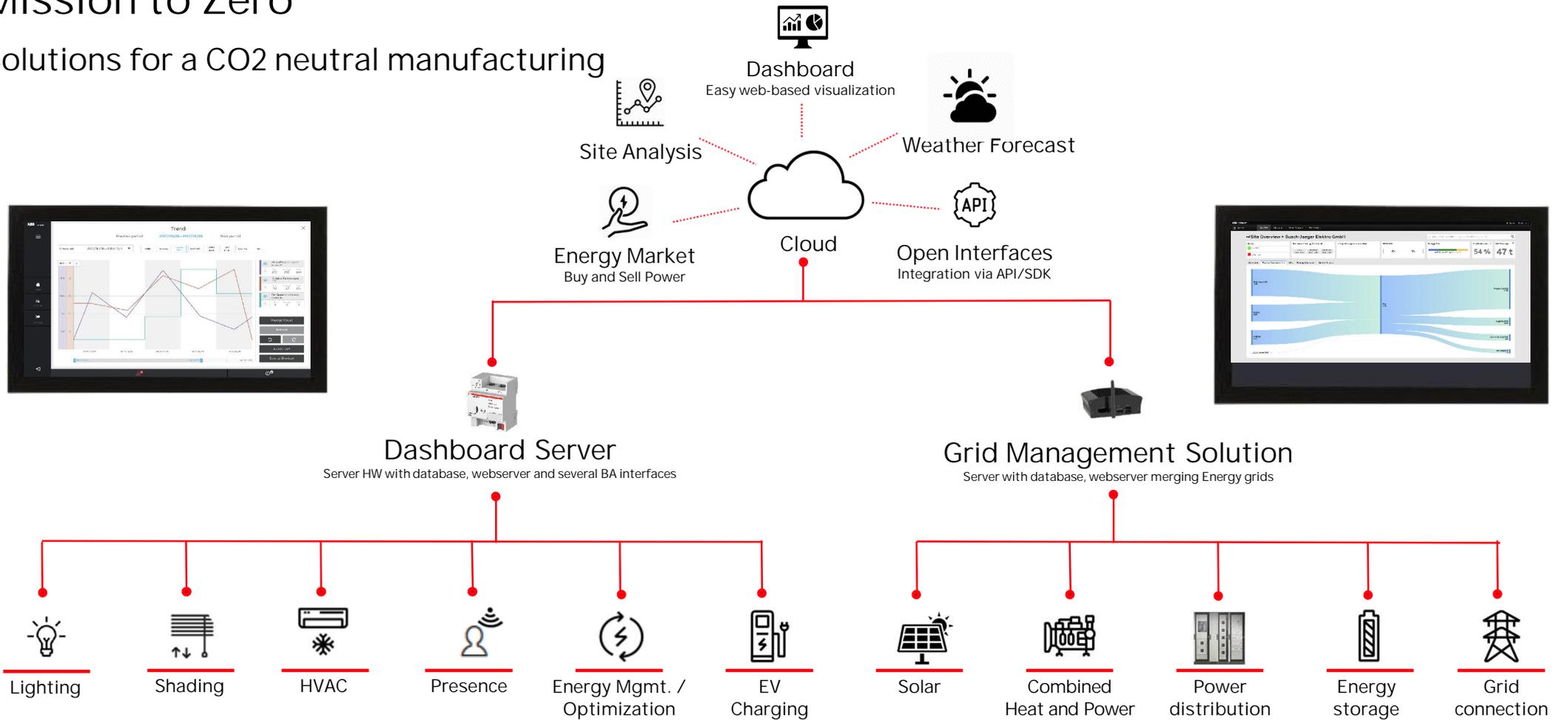
# Mission to Zero: Software solutions

ECDS monitoring, EVSS charging solutions, Enervalis optimization, Optimax EMS,....



# Mission to Zero

## Solutions for a CO2 neutral manufacturing



# Mission to Zero objectives for buildings and sites

## Strategic objectives

Provide energy efficiency & CO2 savings & improve building occupants' experience on comfort, safety and productivity

Mission to Zero (M2Z) objectives are:

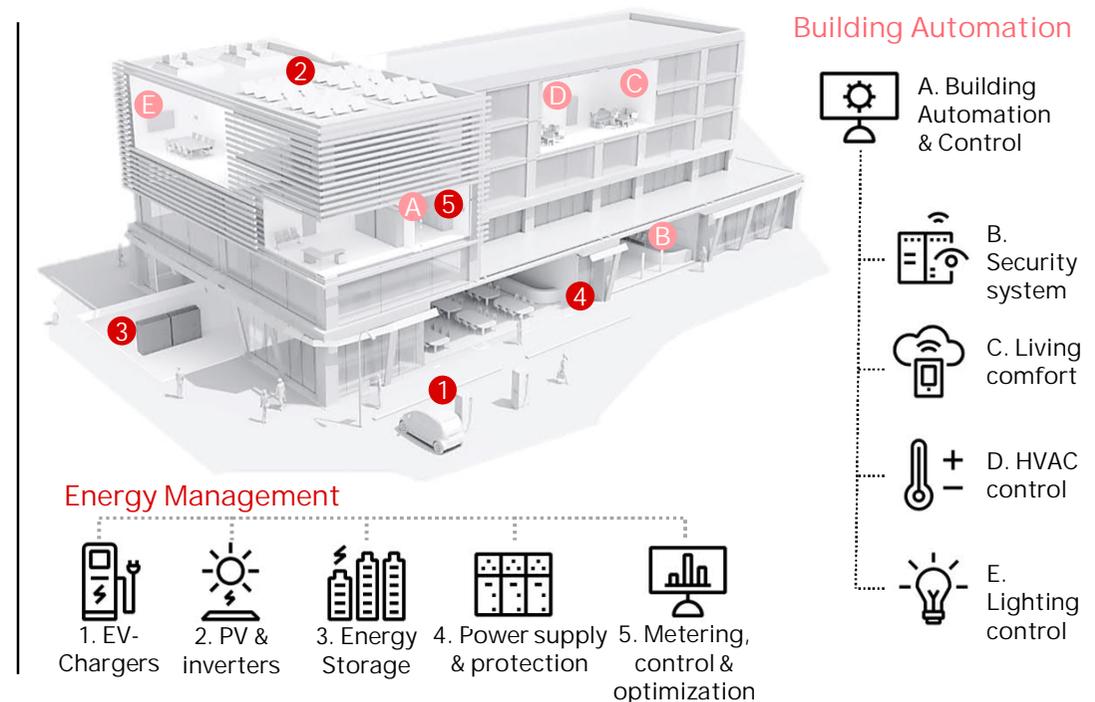
- A) walk-the-talk on sustainability
- B) solid offering and business model to help companies reduce CO2 and increase building experience

## Key characteristics of M2Z offering

Partnership eco-system for Mission to Zero:

- Replicable (lower engineering design efforts, modular approach)
- Scalable (different buildings' types & sizes, various regions)
- Profitable (clear customer benefits, proven business case)

## Typical Mission to Zero building



# Walk the Talk of Sustainability

The 4 steps to CO2 free emission

## 1. Increase Energy efficiency

- Optimized energy generation
- Optimized consumption



## 2. Use and produce new clean power

- Photovoltaics
- Biomass
- Geothermal energy
- Hydrogen Fuel Cell



## 3. Buy green energy

- Green energy markets, business models and pricing



## 4. Offset carbon emission

- Selection of CO2 certificates
- Compensation projects





Thanks for your attention !

The next speaker is : Eric Vermeulen of Haulogy

