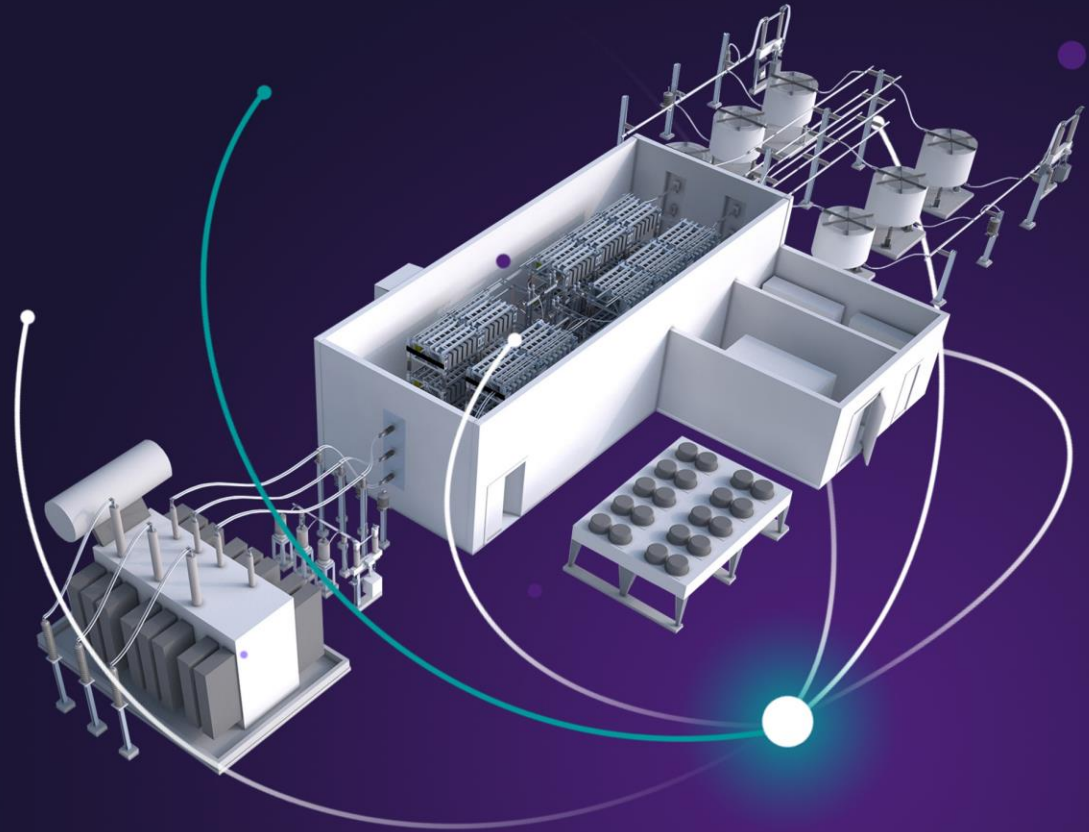


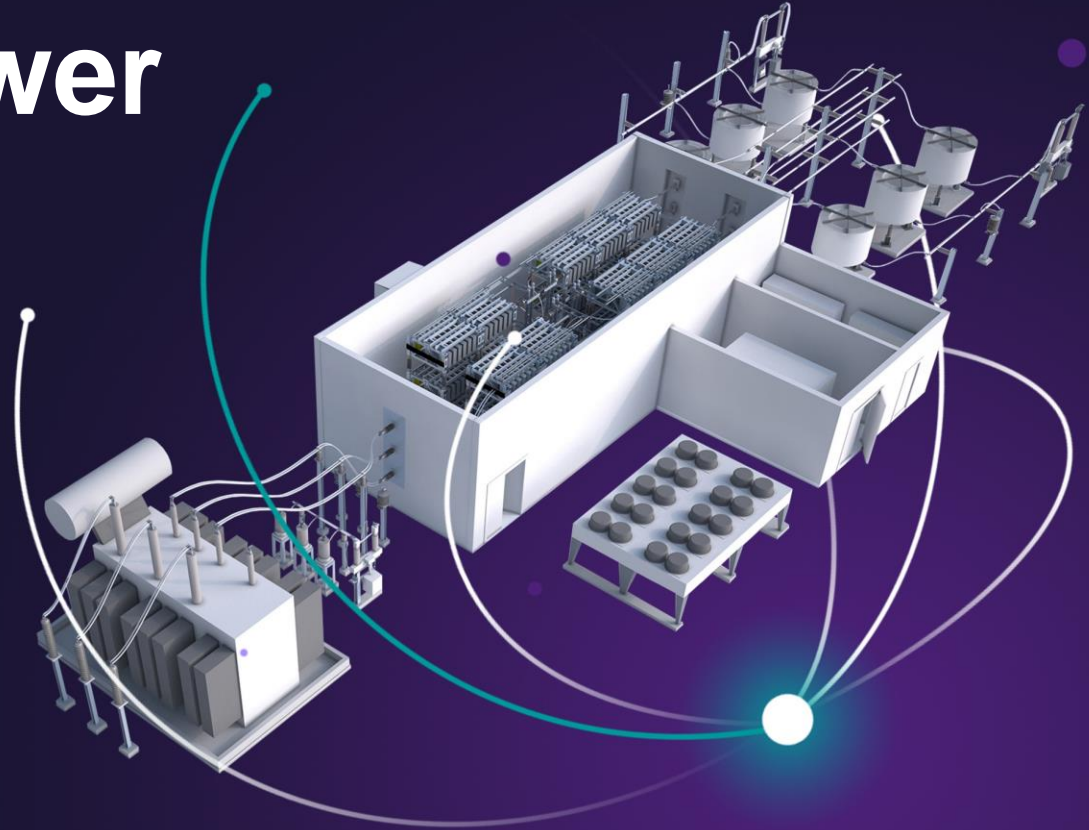
# MVDC PLUS<sup>®</sup>

## Managing the future grid

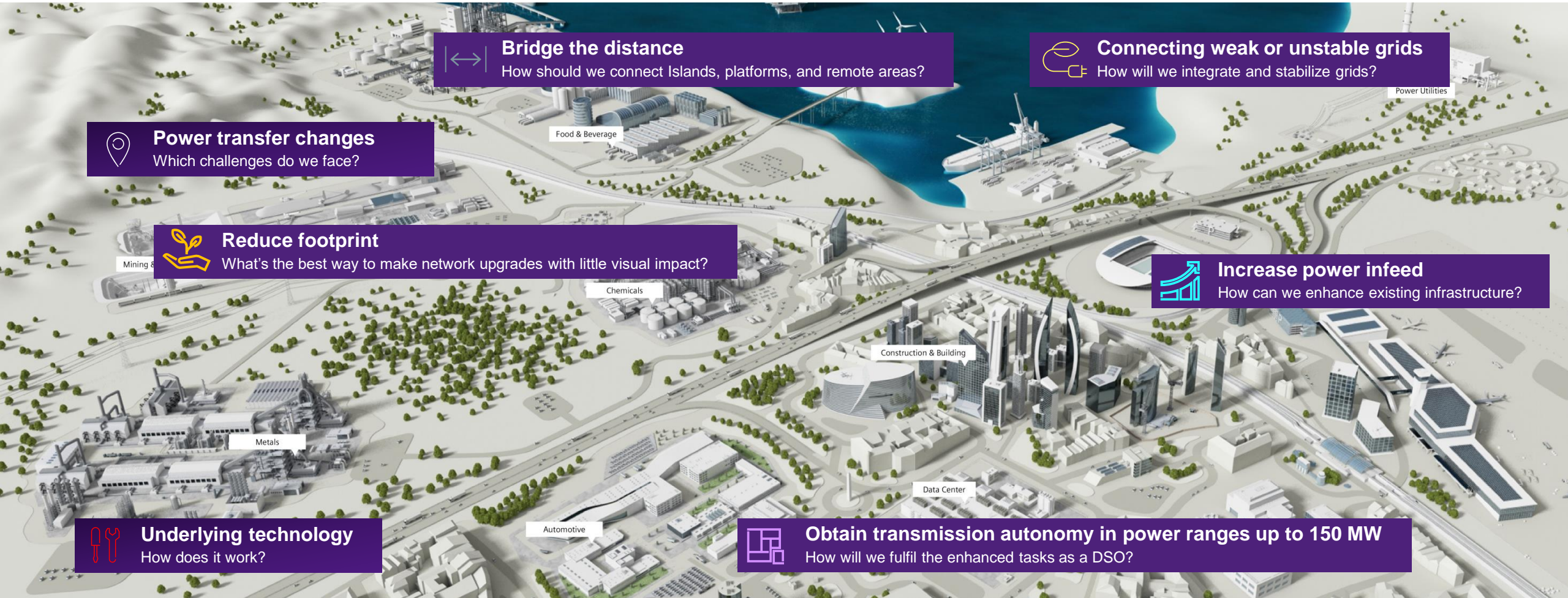
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# How to improve power transfer in future grids?



# Managing the future grid: How to improve power transfer in future grids?



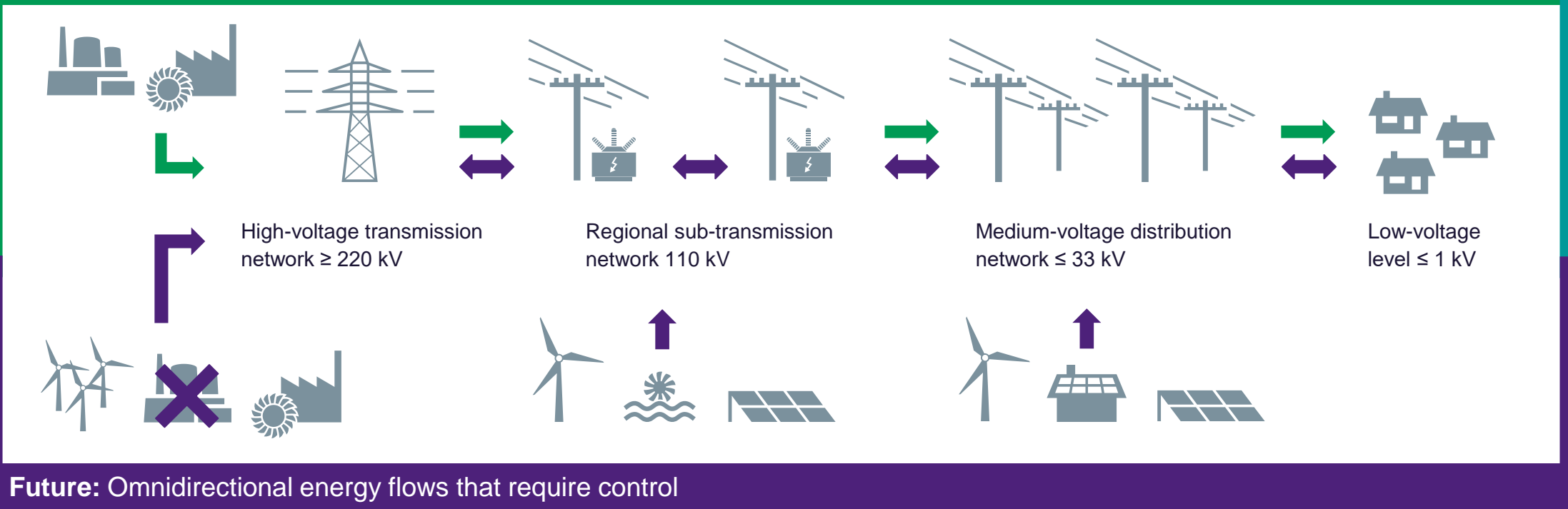


# MVDC PLUS<sup>®</sup>

## Managing the future grid

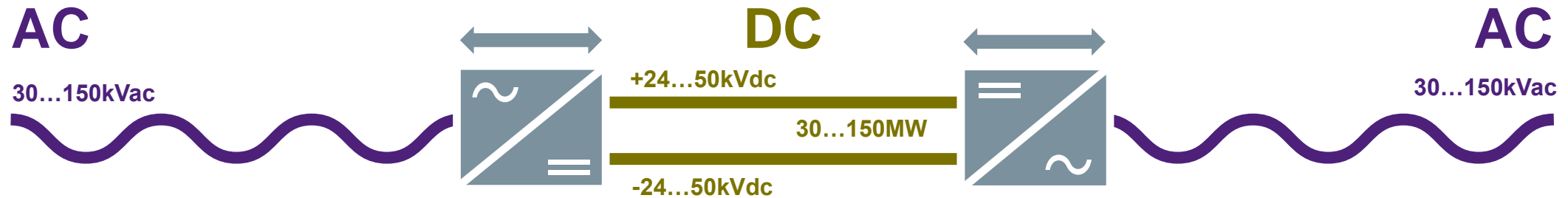
# Trend - Grids are facing new challenges from decentralization and renewables

Past: Unidirectional energy flow HV → MV → LV via alternating current (AC)





Future: Omnidirectional energy flows that require control

# Technical Advantage: MVDC PLUS<sup>®</sup> provides higher power over longer distances and seamless load flow control



## ~ Alternating current

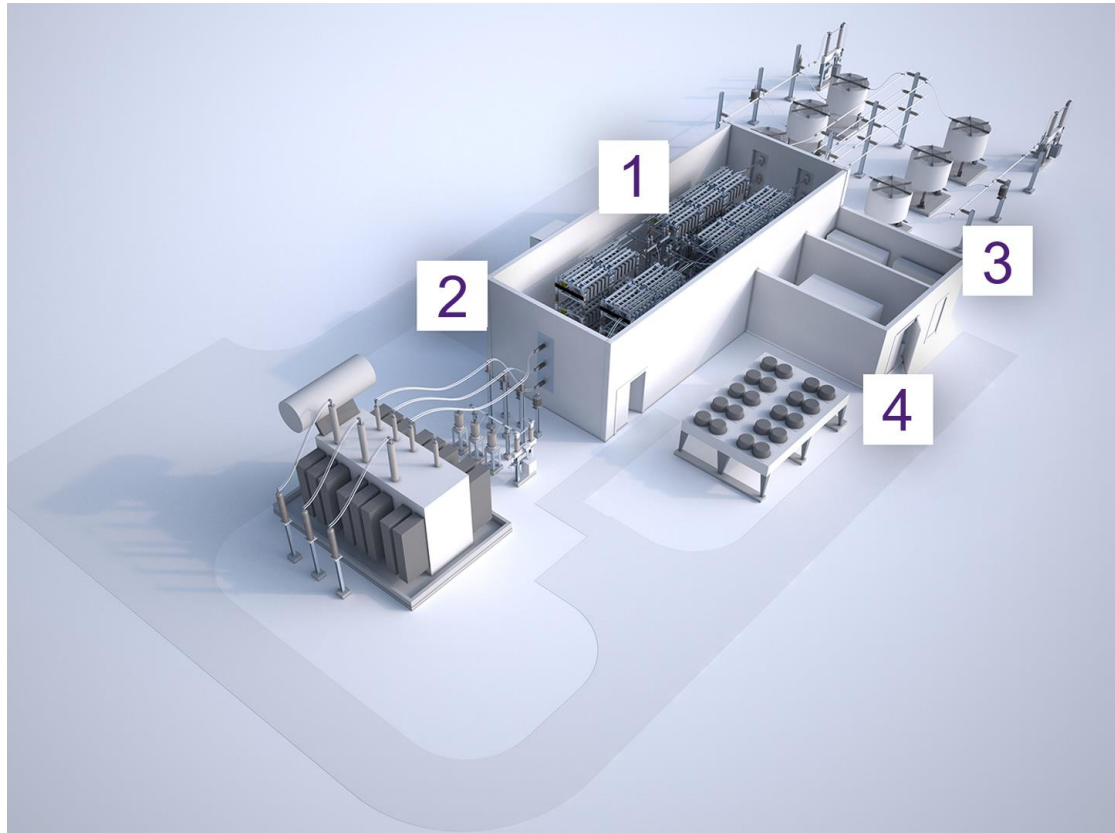
- Simple design
- Robust and reliable technology
- Simple, can be applied without power electronics
- Easy integration into existing transmission networks

 Alternating current  
 Direct current

## = Direct current

- Power transmission over long distances
- Seamless control of the active power flow
- Facilitates connection of asynchronous grids or grids with different grounding schemes
- Reactive power compensation through Converter Stations
- Same power transfer at lower voltage level possible
- Low contribution to short-circuit currents

# MVDC PLUS<sup>®</sup> Components



- 1 Converter tower with IGBT
- 2 Measuring device and charging
- 3 Control and Protection
- 4 Cooling

MVDC PLUS<sup>®</sup> is based on HVDC PLUS<sup>®</sup> technology and standardized for different type rates with positive impacts on costs and execution time

# Contact information



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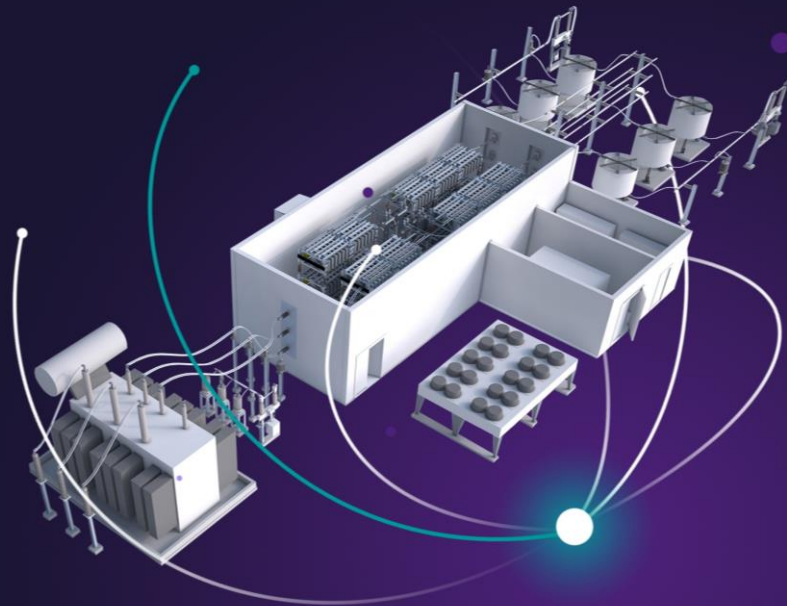
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