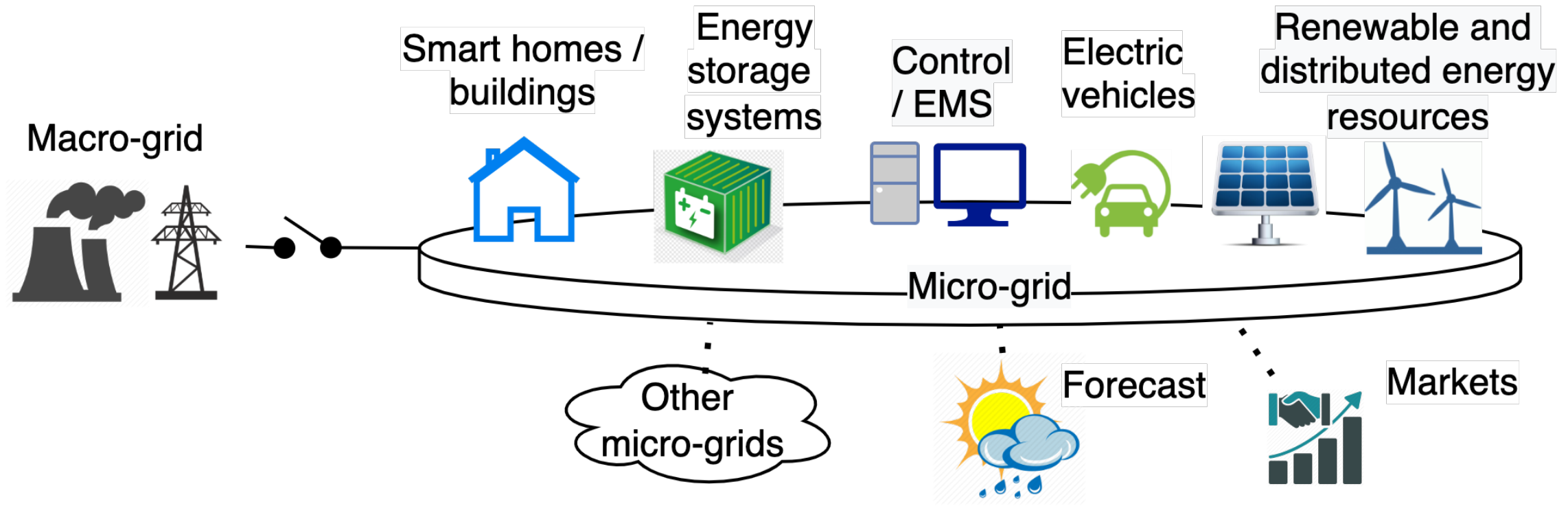


■ Introduction to microgrids

- Microgrid definition and components
- Microgrid functions and operation modes
- Microgrid placement

Micro-grid definition and components

- One of the Smart grid systems
- Micro-grids are in fact “Smart Grids in small”
- The path to smart grid goes through micro-grids



■ Micro-grid functions and operation modes

- Micro-grid system provides following major functions:
 - **monitoring and control** of the micro-grid in real time (SCADA, EMS)
 - **distribute** electricity to any micro-grid users
 - **protect and maintain** the related micro-grid assets
 - **ensure balance** of demand and supply
 - **handle islanding**, connection and disconnection
- Micro-grid can operate two basic modes:
 - **grid connected mode** - interconnected with macrogrid, offers various support functions such as Peak Management
 - **island mode** - micro-grid operates as disconnected disconnected/isolated from macro grid

Micro-grid placement

- **Micro-grids** takes special place in smart-grid environment
- They cover 3 main domains: **Distribution, DER and Customer premises**

