SmartCoDe:
Smart Control of Demand for buildings and neighbourhoods

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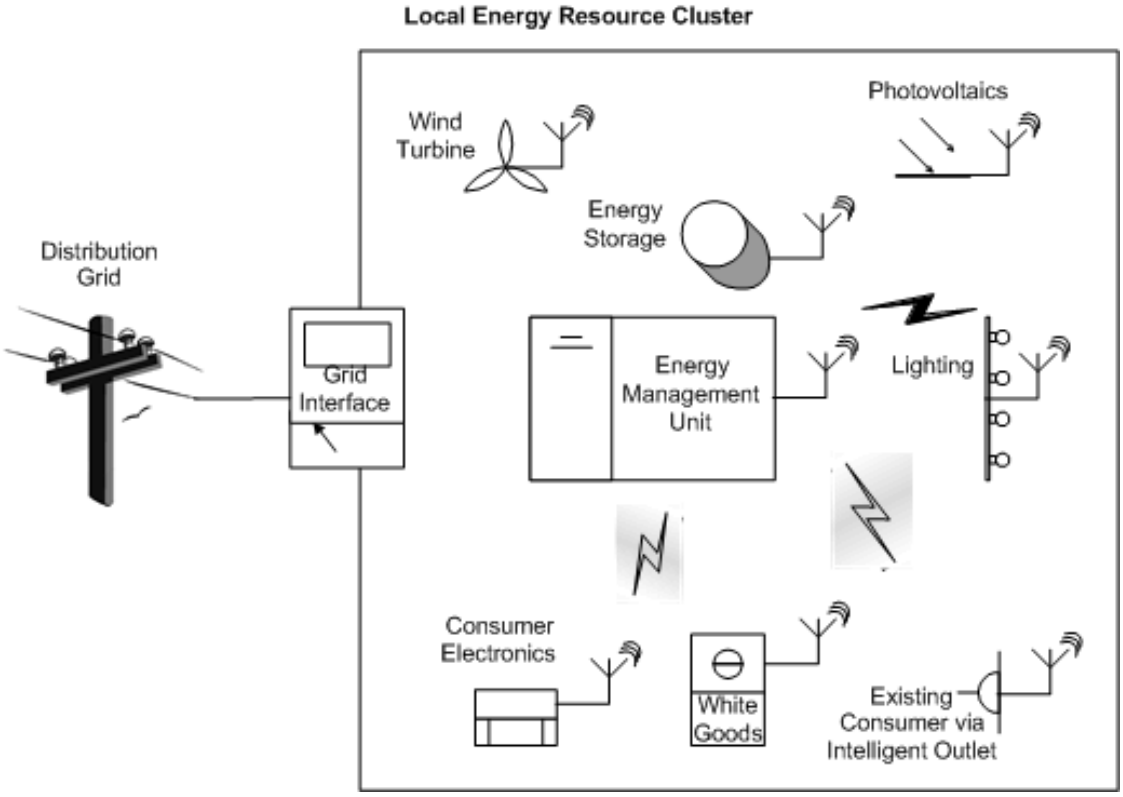
Future buildings and neighbourhoods combine a manifold of appliances ranging from electrical lighting to HVAC with locally available renewable energies such as photovoltaics or wind turbines with locally available storages such as batteries of an electric vehicle in a local grid. An intelligent management of energy in such a local grid can enable customers to participate in the energy market and even contribute to the stability of the power grid. However, energy management in such local grids requires expensive, fine grained communication infrastructure. Today, this limits applicability of energy management to large consumers in the industrial and commercial sector.



The demonstrator approach connects a local "energy management unit" with different nodes in the local grid:

- RF communication between appliances, generators, storages, and energy management unit using extended ZIGBEE protocol
- Strong encryption to ensure information security and privacy
- Inexpensive implementation (Target: < 3€)
- Ultra-low power smart standby (Target: < 10 mW)

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