

A Gateway between SmartHome and Smartgrid



**“Optimising the Benefits for the Consumer,
Prosumer, and Energy Provider”**



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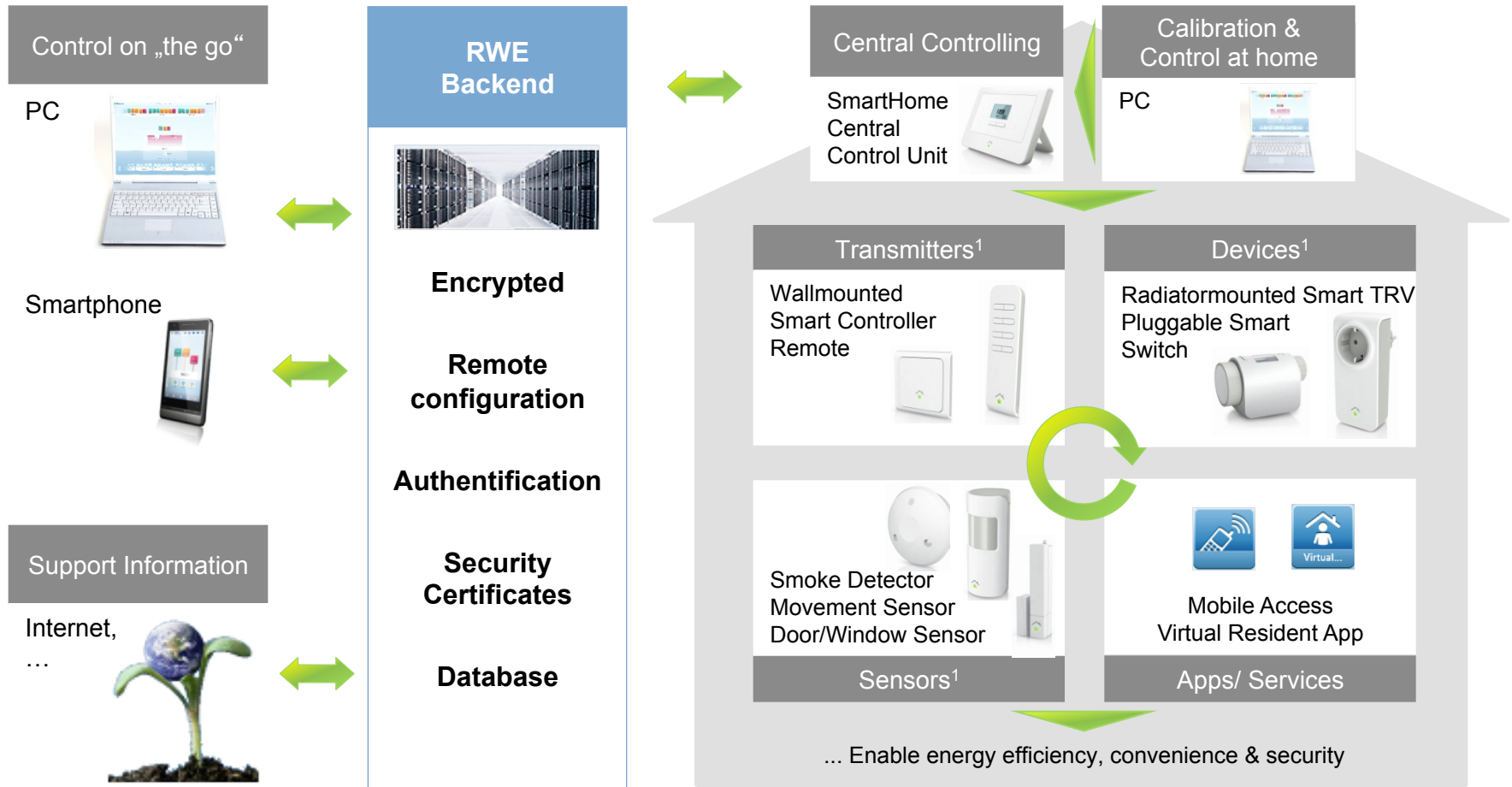
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The Challenge in Germany

Challenge of engaging the consumer with Smart Grids in a market driven world

<p>Increasing energy demand and prices</p>	<ul style="list-style-type: none"> ▪ Greater number of devices and energy demand in homes ▪ Increasing energy prices increase demand for energy saving solutions
<p>Increasing number of decentralised energy systems</p>	<ul style="list-style-type: none"> ▪ A system that can connect such systems e.g. PV, Micro-CHP and Electric Vehicles in one „SmartHome“ becomes more attractive/necessary
<p>Regulation</p>	<ul style="list-style-type: none"> ▪ 20-20-20 Programmes would be supported through Smart Solutions ▪ In German market, energy efficiency on the residential side is mostly market driven
<p>Customer Side</p>	<ul style="list-style-type: none"> ▪ Increasing number of customers willing to save energy ▪ Suspicion of company/supplier ‘s motives – „Whats in it for me?“ ▪ Customers need to start with common ground – they dont understand SmartGrid* ▪ In isolation, customer interest in SmartMeter, has been limited ▪ Range of customers present, from indifferent consumer to active „Prosumer“ – need something to address all

An Overview of RWE SmartHome

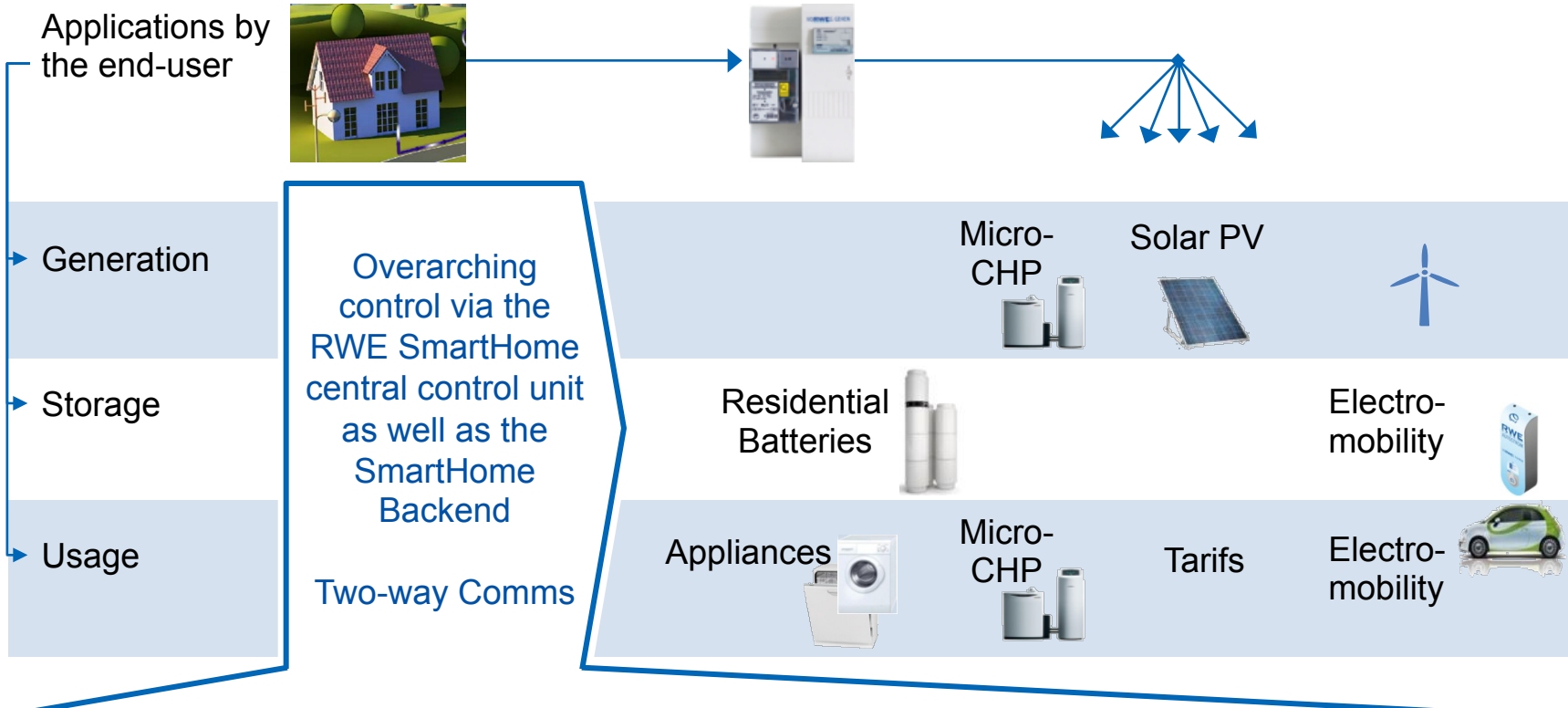


¹ further devices will follow

How RWE SmartHome could assist Smart Grid's in the future

<p>Increasing energy demand and prices</p>	<ul style="list-style-type: none"> ▪ Fraunhofer-Study showed an energy saving of 17-40% through RWE SmartHome
<p>Increasing number of decentralised energy systems</p>	<ul style="list-style-type: none"> ▪ Communications protocol with advanced encryption levels ▪ IPv6 based for almost unlimited extension possibilities ▪ High range allows reliability of service ▪ Solid infrastructure
<p>Regulation</p>	<ul style="list-style-type: none"> ▪ Product offering of energy efficiency, security, convenience and Smartgrid options would ensure an attractive proposition in a market driven industry
<p>Customer Side</p>	<ul style="list-style-type: none"> ▪ Apps allow flexible approach to Smartgrid to suit all customer types ▪ tangible product thus avoiding suspicion of suppliers motives ▪ Starts customer on journey and prepares them for arrival of SmartGrid ▪ SmartHome enables catalyst for a two-way communication which can support Smartgrid ▪ Range of marketing opportunities would justify cost of installation ▪ Simple to install and use, reduces hurdles

How RWE SmartHome could assist Smartgrid in the future



SmartHome Backend and Central Control Unit
Multifunctional control unit



SmartHome Devices

Enables instance-dependant storage

Conclusion

RWE SmartHome provides a staged introduction to Smartgrid

Acceptance of Infrastructure



- Clear advantages for consumer through security, energy efficiency and convenience
- Cost effective introduction of a Smartgrid suitable infrastructure into customers' homes

Timer Controls and Devices



- Time function as well as future atomisation apps allow all customer types to already take advantage of any time based tariffs
- Connections to underfloor heating and electrical appliances already in place

Development of SmartGrid Elements



- RWE Effizienz trials and established products in fields of Smartmetering, E-Vehicles, Micro-CHP and Intelligent PV can be tied in
- Backend and flexible central unit allow connection

Future Connections and Enhancements



- Development of protocol module will allow direct integration with further appliances
- Software development kit will allow further apps that can ensure suitable system and solutions as Smartgrid develops

Thank you for listening

Edmund Barrett
RWE Effizienz GmbH
0049(0)2314381930

www.rwe-smarthome.de

