

# pebbles – Realize Local Energy Marketplace Optimized by Blockchain

Corporate Technology – Research In Energy and Electronics – Energy Systems

# Develop a digital platform for regional energy trading and demonstrate the business potential of local electricity markets

Research project “pebbles”

## Deliverables

- Market platform including design of local electricity market
- Cloud applications providing data based value added services like forecasting
- Intelligent Blockchain gateway
- Customer energy management system with market interface

## Benefits

- Integrated cooperation model for technology provider, utilities, network operators and prosumer
- New business models based on local energy trading and network service exchange
- Blockchain for high process automation & data transparency

## Project setup

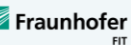
- Started in 03/2018; 3 year public funded project (BMWi\*)
- Partnering: Allgäuer Überlandwerke, AllgäuNetz, Academia



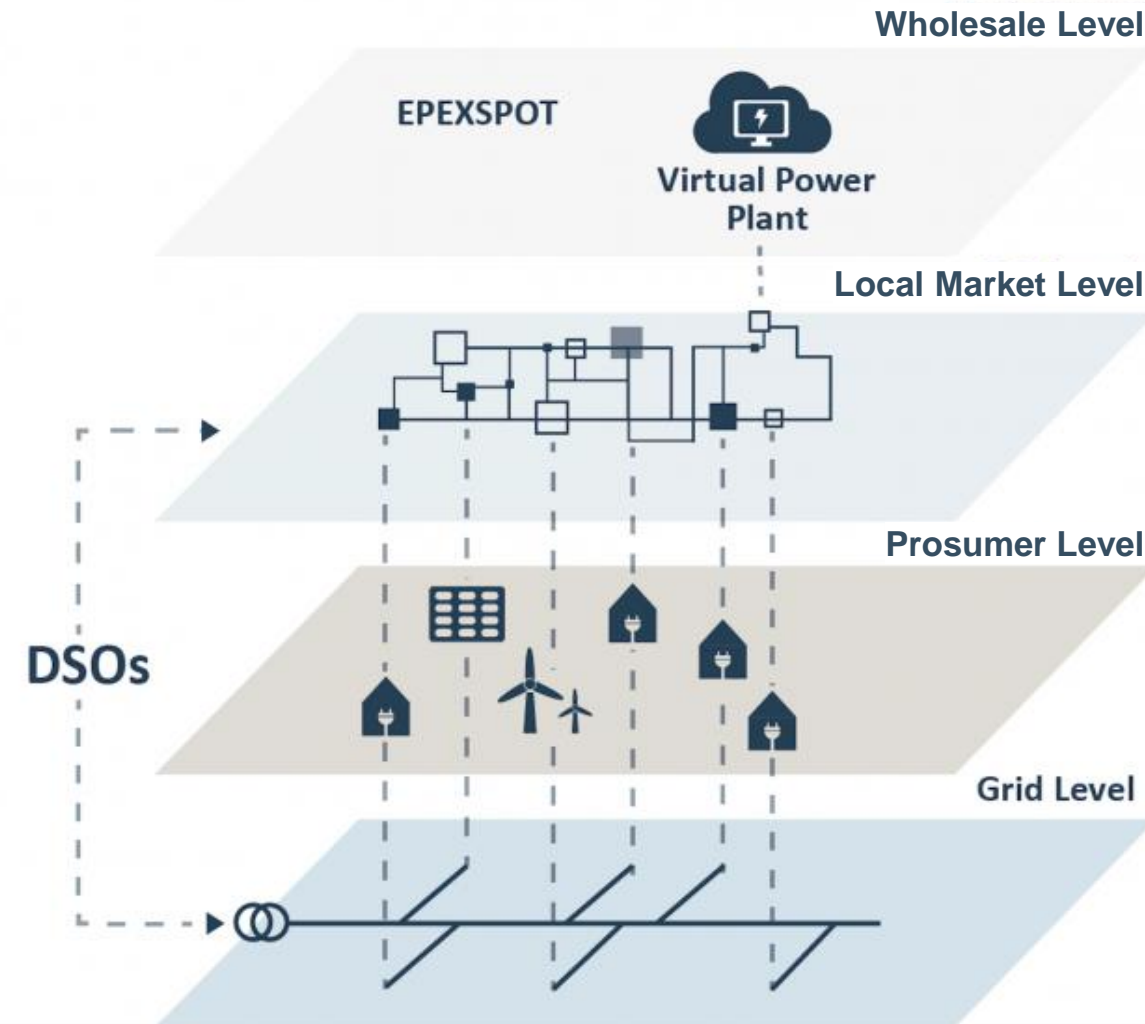
Gefördert durch:



aufgrund eines Beschlusses  
des Deutschen Bundestages



# We are working based on five main use cases

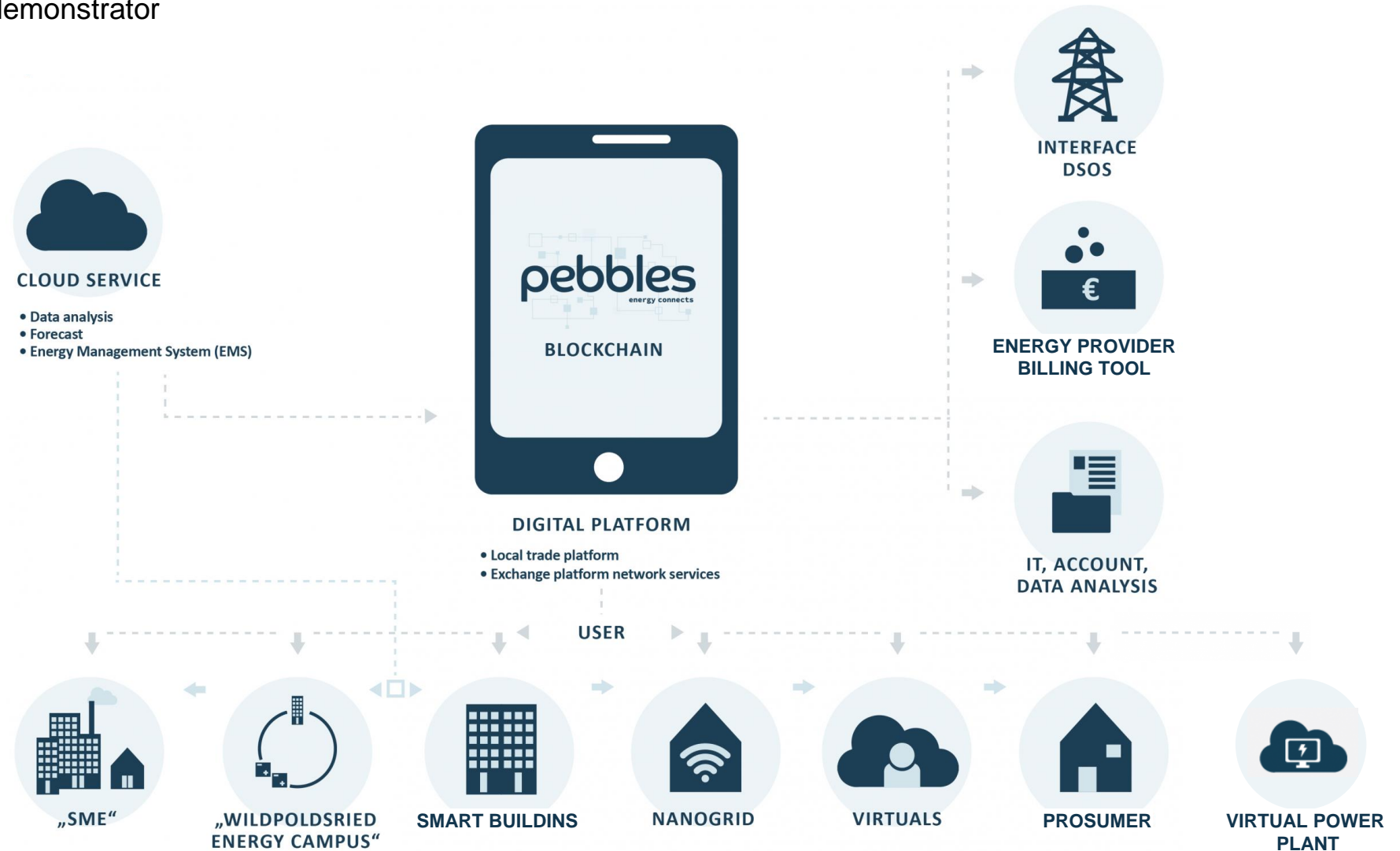


## pebbles use cases addressing all system levels

- I. Market participants and Customer Energy Management System
  - Market participant (prosumer) sells and buys electricity at local marketplace
  - Self optimization through customer energy management system
- II. Local electricity market
  - Local marketplace activates available flexibilities and pushes local energy balancing
- III. Grid Services
  - Coordination of flexible loads (e.g. EV charging, heat pumps), distributed generation and energy storage
  - Avoid grid extensions through load coordination
- IV. Cloud applications
  - Provide data base value added services to the end customer
- V. Blockchain
  - Enable local trading through transparency and trust basis

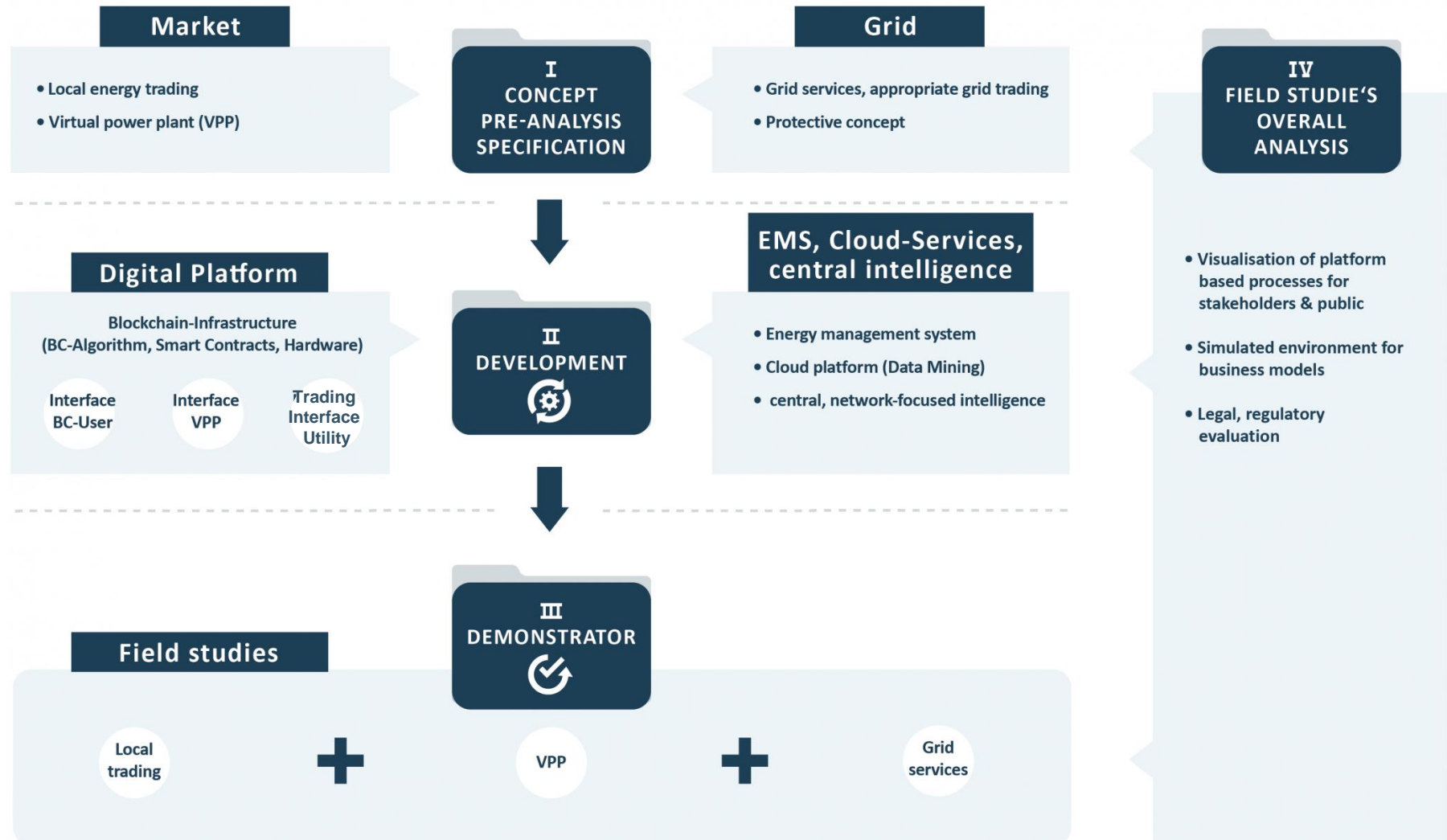
# We aim for a platform-based cooperation between technology providers, platform providers, users and distribution system

System architecture of the demonstrator



# Currently we are in the concept phase focusing on the system specification and the demonstrator setup

Main project phases and work breakdown structure



Thank you for your attention!

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## Contact Information

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