

SOLARGOESDIGITAL

Optimized Cross Sector Energy Management with Digital Solution from SMA



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DIGITALISATION IN ISRAEL STARTUP NATION



- > WAZE– GPSbased navigationsystemfor smartphones
- > MOOVIT– Mobiledataanalysisin citiesand costfreeapp for publictransport
- > MOBILEYE Drivingassistance system
- > GETT- Onlinetaxiserviceapplication



- > CYMULATE– Simulation of cyberattacks in order to learn from the process
- > BOTIFY– Identification and blocking of bots
- > D4D – Privacy through encryption of pictures and faces
- > NAMOGOO – Cybersecurity for customers on e-commerce platforms



- > NEURA – Connected smart home solutions adapting to user's real life and behaviour
- > VAYYAR– Safe, mobile, low cost 3D Imaging
- > TWIGGIE– Natural language search in e-commerce
- > PRESENSO – Predictive maintenance for maximizing uptime in industrial production

REDUCING COSTS & INCREASING PERFORMANCE



Manufacturing



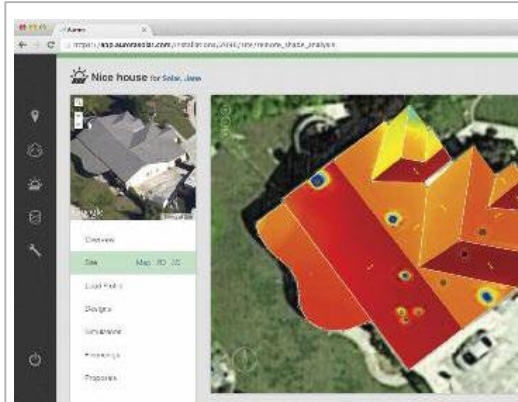
- Digital Network
- Robotization
- Automation
- Quality Management
- Industry 4.0

Example

SMA Worker Information System



RemoteAcquisition & Design



- Satellite Pictures
- 3D Light Detection and Ranging
- Analysis of potential
- Remote technical design
- Combination of load profiles

Example

Google Project Sunroof



Operation & Maintenance



- Monitoring und Control
- Asset Lifecycle Management
- Predictive Maintenance
- Big Data Analysis
- Especially for Utility Scale

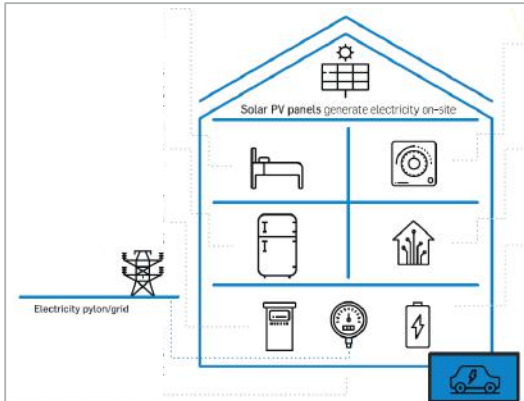
Example

BayWa r.e. Drone Check



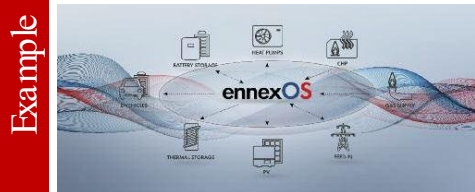
OPTIMIZE FUTURE-PROOF OF DIGITAL SOLAR SYSTEMS

Smart Buildings



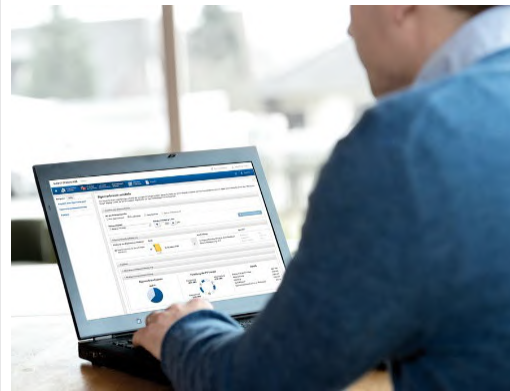
- Production and storage
- Local energy management
- Connected, intelligent devices
- Sector coupling
- Integration to energy markets

SMA ennexOS



Example

Photovoltaics



- Intelligent Storage Systems
- System Design
- Energy Trading
- Integration of Renewables
- Direct selling of energy

SolarCoins



Example

Microgrids



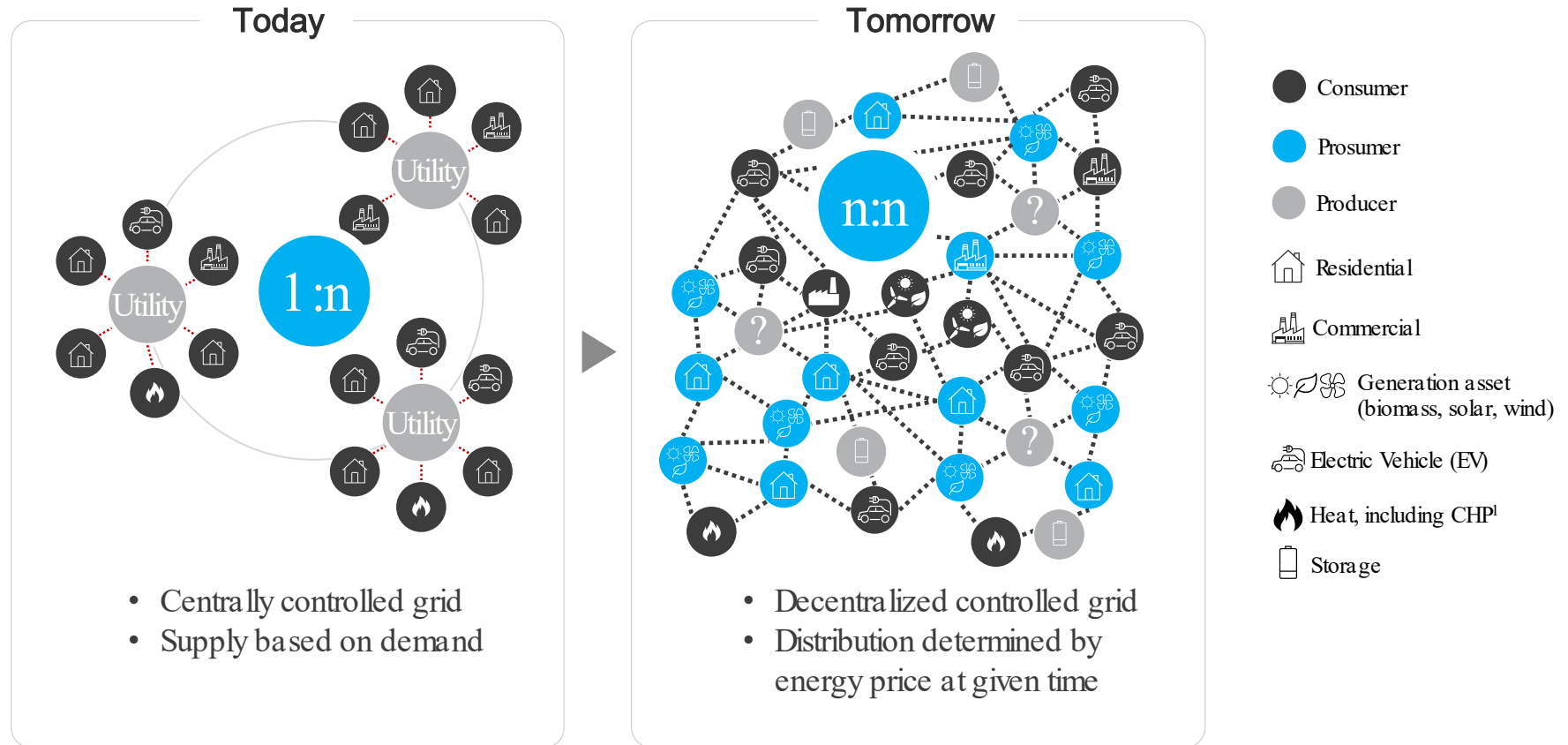
- Communities, companies etc.
- Act as one unit
- Mostly connected to the grid
- Island grid in case of blackout
- Digital grids

Brooklyn Microgrid



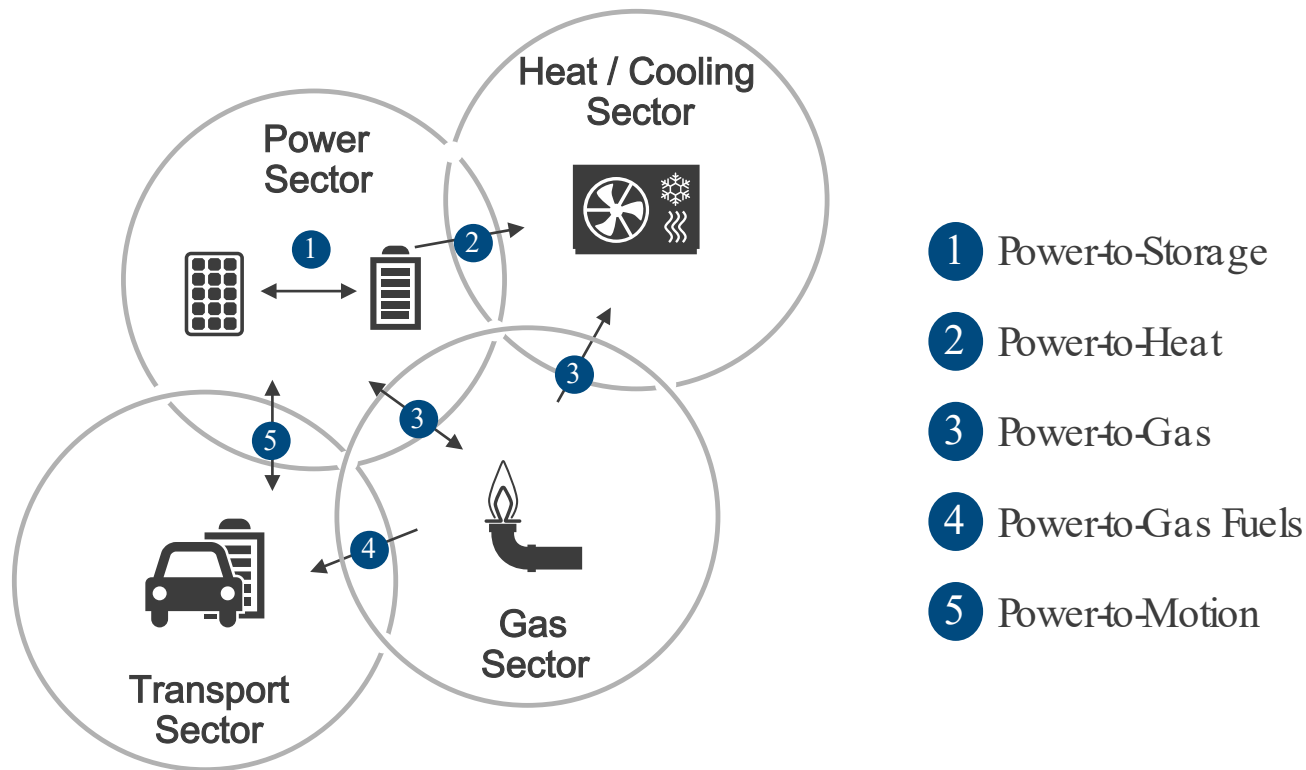
Example

TRANSFORMATION OF THE ENERGY SECTOR RE INTELLIGENT SOLUTIONS TO MANAGE DECENTRAL UNITS



> Digitalization is the key to decentral energy production and new business models.

SECTOR CONVERGENCE PROVIDES NEW ME OF FLEXIBILITY– MANAGING THE RESULTING COMPLEXITY REQUIRES INTELLIGENT CONTROL



> Variable power prices and new technologies add new options for energy transfer between sectors.

COMMERCIAL ENERGY MANAGEMENT SAMPLE SUPERMARKET

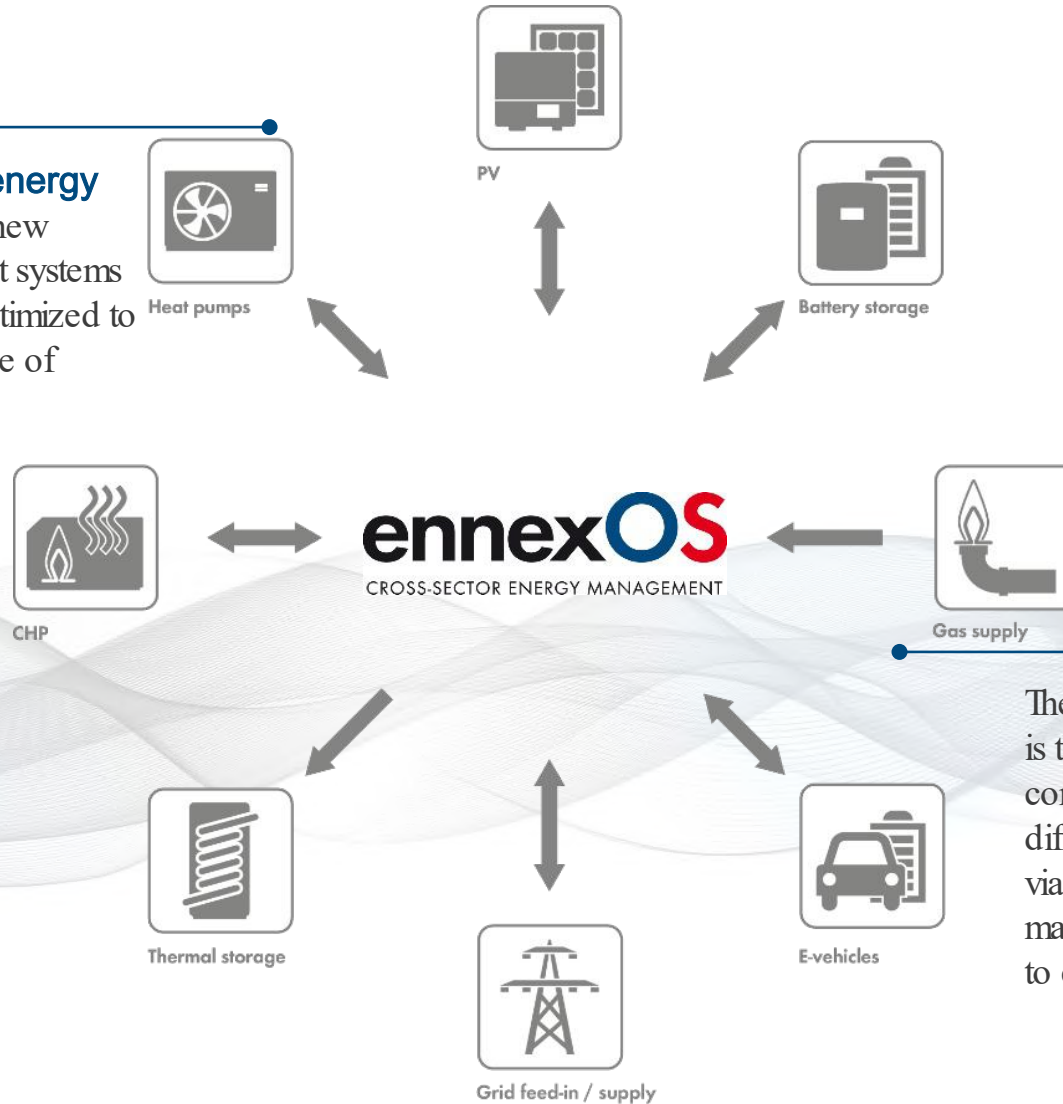


- ① Data Manager powered by ennexOS
- ② Battery inverter
- ③ Battery storage
- ④ PV inverter
- ⑤ Electric vehicle Charging stations
- ⑥ Refrigeration/ air conditioning
- ⑦ Monitoring

MANAGE ALL ENERGY SECTORS ON A SINGLE PLATFORM



The **connectivity of all energy sectors** is crucial for the new energy world. All different systems need to be continually optimized to make the most efficient use of energy.



The **Internet of Things (IoT)** is the technical basis for connecting and managing different devices and systems via internet. In the energy market, IoT is a driving force to create the future of energy.

A NEW DIMENSION OF INTELLIGENT ENERGY MANAGEMENT



Get the most out of energy

All energy sectors on a single platform for the first time

Significant cost savings

Simply analyze and intelligently manage energy flows

Ready for the future today

Modular extension and expandability, even with partner solutions



Secure energy supply

Identify and implement optimization potentials at any time

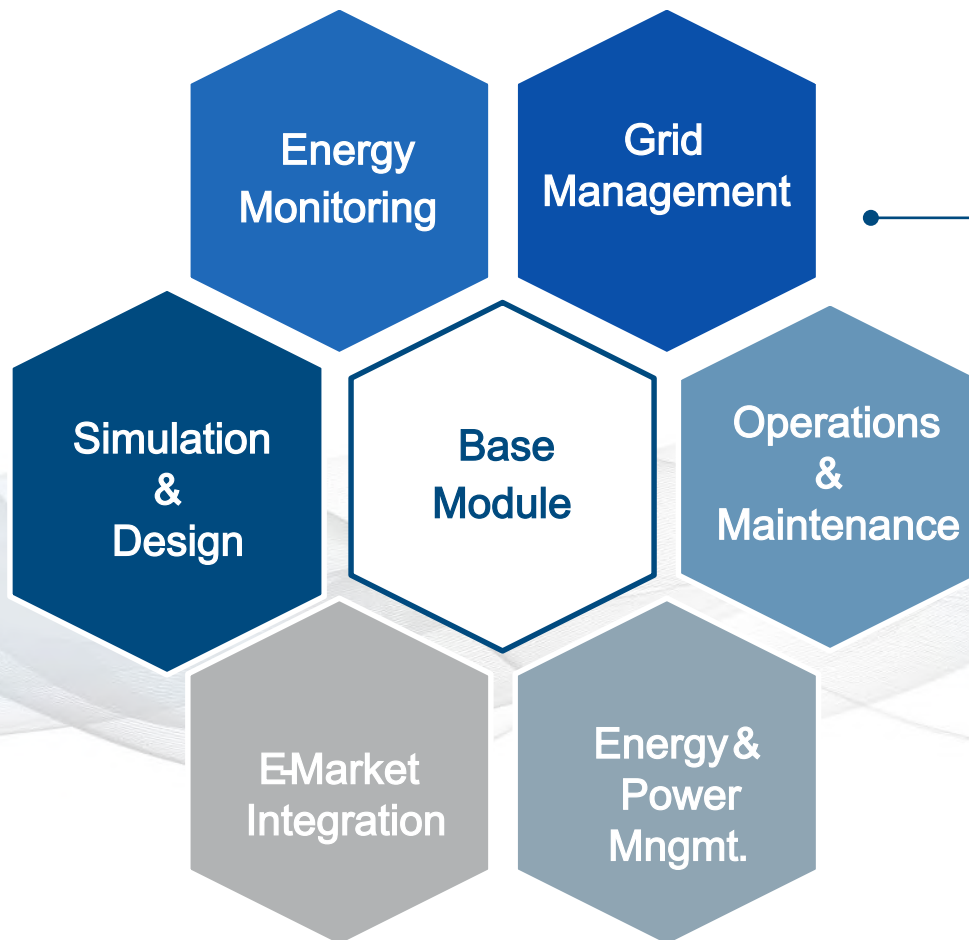
Efficient and easy to use in every aspect

Web-based, automated processes, easy to use

Manage the complex world of energy easily

Access to the quickly changing energy market of the future

BE READY FOR THE FUTURE TODAY



One common platform for all segments and applications, **extendable and scalable due to its modular system design.** Developed to support all future digital business models.

SUNNY DESIGN PRO



A new dimension of integrated system design

Cross-sector view on residential and commercial energy systems, their energetic, environmental and economic benefits

Advanced features

- Cross-sector simulation of energy systems
- Integrated energy management for PV, battery storage and thermal components
- Battery storage simulation for peak load shaving
- Tariff management
- Detailed energy and load analysis
- Extended project documentation



MONITORING AND CONTROL



Data recording and monitoring as well as control of decentralized PV systems is even simpler, faster and more efficient than before with this solution.

Specifically **tailored to the needs of PV system operators, PV system managers and service technicians**, featuring fundamental innovations.

- Two powerful components perfectly match each other
- Cutting-edge, uniform UI design
- Future-oriented functions for an automated grid management service
- Access to the quickly changing energy market of the future via ennexOS



**SMA Data Manager M and
Sunny Portal powered by
ennexOS**

DATA MANAGER M AND SUNNY PORTAL POWERED BY ennexOS



The newly refurbished SunnyPortal

(world's largest PV monitoring portal)

Hierarchical navigation and administration

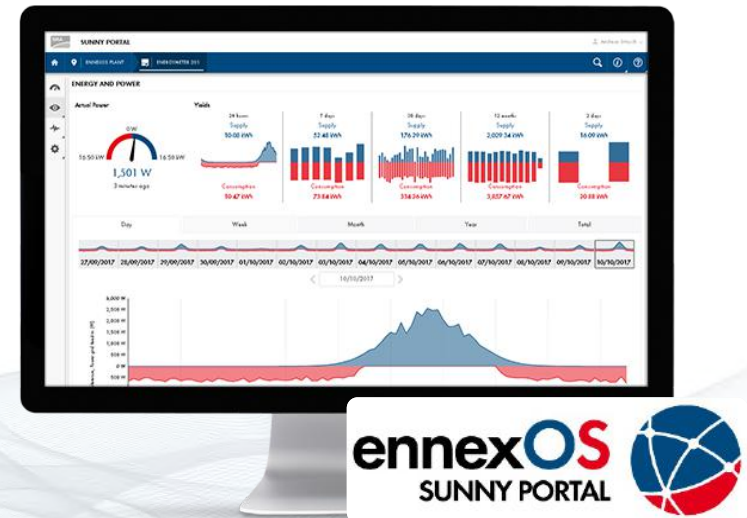
- Designed for comprehensive and complex system portfolios
- Clear dashboards for the entire portfolio
- Easy configuration and monitoring of the entire portfolio

Insight view

- Portfolio and system analysis, incl. energy balance and storage system display

Configuration and commissioning

- Convenient and secure remote configuration of the Data Manager and inverter
- Less configuration effort



LEARN MORE?



SMA in General

- Established in 1981 in Germany
- Global market leader
- Installed base of 70 GW worldwide
- Highest quality and innovative products
- Manufactured in Germany

SMA in Israel

- Strong and reliable local representative:
BOSCHLedicoGreen Energy, Rishon Le Zion
- Active in Israel since 2008
- Approx. 750 MW installed base year to date
- Local Spare Parts Warehouse
- Local Service Technicians

www.ennexos.com www.smaisrael.com www.ledico.com



„My dear, here we must run as fast as we can, just to stay in place.
And if you wish to go anywhere you must run twice as fast as that.“

Alice in Wonderland

ENERGY IS CHANGING BE THE CHANGE



**The Future of Solar.
Digital. Connected Intelligent.
Be part of it.**



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