Untapping Supermarkets’ Flexibility Reserves
- Opportunities & Challenges –
Erschließen der Flexibilitätsreserven eines Supermarktes mit Photovoltaik
- Chancen und Herausforderungen -
Solarenergietage Niedersachsen 2018, Hannover
Agenda

- Introducing coneva GmbH
- Connected = The challenge for supermarkets
- Energy = Our solution for energy management
- Value = How our customers benefit
- Lessons Learned & Conclusion
Core of our business model is to create value via energy savings, energy management and/or the sale of energy

WHO ARE WE – CONEVA GMBH

Part of the SMA Solar Technology digitalization strategy

One-Stop shop for innovative data based energy services

Market place for the development of new business models

Forerunner for a successful positioning in the digital energy world
coneva connects, optimizes and manages energies and hence creates value for its customers

CONEVA’S VALUE PROPOSITION

Innovative, digital energy services
for residential and commercial customers

CONNECTED
We connect and integrate devices, systems and sectors with sustainable technology

ENERGY
We offer data-based energy management from monitoring through local optimization to energy market integration

VALUE
We ensure energy costs are reduced and/or additional revenue is generated through market integration

Approx. 400,000 PV systems

Value-adding services

Technical platform

ennexOS
CROSS-SECTOR ENERGY MANAGEMENT

SUNNY PLACES
SUNNY PORTAL PRO

© coneva GmbH | Solartage Niedersachsen 2018
Today, cooling system assets provide most (reliable) flexibility – this will change in the future with effects unknown

ADDRESSABLE FLEXIBILITY AS CHALLENGE

Today’s Asset Landscape and Load Curve (example)

Future Asset Landscape and Load Curve (unknown)
Our platform ennexOS integrates thermal and electric worlds, thus connecting all relevant assets – enabling our comprehensive service portfolio

ENNEXOS CONNECTS ASSETS AND DOMAINS

Thermal

Example: System Manager SM800 (by Danfoss)

- Cooling
- HVAC
- Lighting

Electric

- Battery
- E-Mobility
- Renewable Energies

Data Manager M

- Remote Monitoring
- Remote Optimization

Asset Management Services

- Flexibility
- Direct Selling

Energy Market Integration

- Grid Charge Optimization
- Peak Load Shaving

Local Energy Management

Onscreen Management Cockpit

CONNECTED

ENERGY

VALUE
Energy management has to optimize between different flexibility use cases as well as on individual and pool level at the same time

WHERE’S THE MONEY FOR ENERGY MANAGEMENT (IN THE FUTURE)?

**NON-REGULATED**

**Location n**

**Challenges:**
- Price (e.g. levies) developments
- Preferential treatment of on-site generation

**REGULATED**

**Location 1**

**Challenges:**
- Price increases
- Shift to demand charges
- Changing regulation

**LOCAL**

- **Self Consumption**

**MARKET**

- **Individual Utility Rates**

**Grid Charges**

**Energy charges (Ct./ kWh)**

- **Demand charges (EUR / kW)**

**Grid Services**

**Primary**

**Challenges:**
- Price developments
- New products
- Prequalification

**CONNECTION**

**ENERGY**

**VALUE**
Our Energy Management Services will generate significant savings for our customers – while allowing them to focus on their core business: Retailing

AVERAGE COST AND SAVINGS - 10 YR PERSPECTIVE
(kEUR p.a.)

14 kEUR Savings = 11% Gross Margin Improvement

1) Depending on Availability of Battery Storage
2) Requires today Battery Storage, depends on Price Developments
3) Depending on individual contract provisions
Innovative Supermarket Pilot in Cooperation with Danfoss to demonstrate benefits entered operational phase in June 2018

DEMONSTRATOR PROJECT

Smart store in Germany: CO₂ refrigeration system incl. waste heat + PV + battery storage + EV charging infrastructure
Summary & Conclusion

KEY LEARNINGS

> **Every journey starts with a first step** – getting the basics right (sound design, professional installation according to plan, ...) provides foundation for future developments

> **In Food Safety We Trust** – energy management’s additional value is a friction of the cost of potential system failure when merchandise perishes

> **The future is … uncertain** – focus on a single niche is risky, flexibility regarding assets and markets is of high value

> **Think green!** – meet the demand of consumers that are becoming more environmentally conscious

> **Expand your boundaries** – focusing on single assets / locations may seem unattractive, but pooling offers new potentials