

# ælectra® - simple efficient and CO<sub>2</sub>-free heating



# Unclever heating = high costs

## High costs for environment

Main Sources of global heat production

- ▶ coal, gas, fuel

Production of heat is one main source of CO<sub>2</sub>

- ▶ 25 % of global output

## High costs for consumers

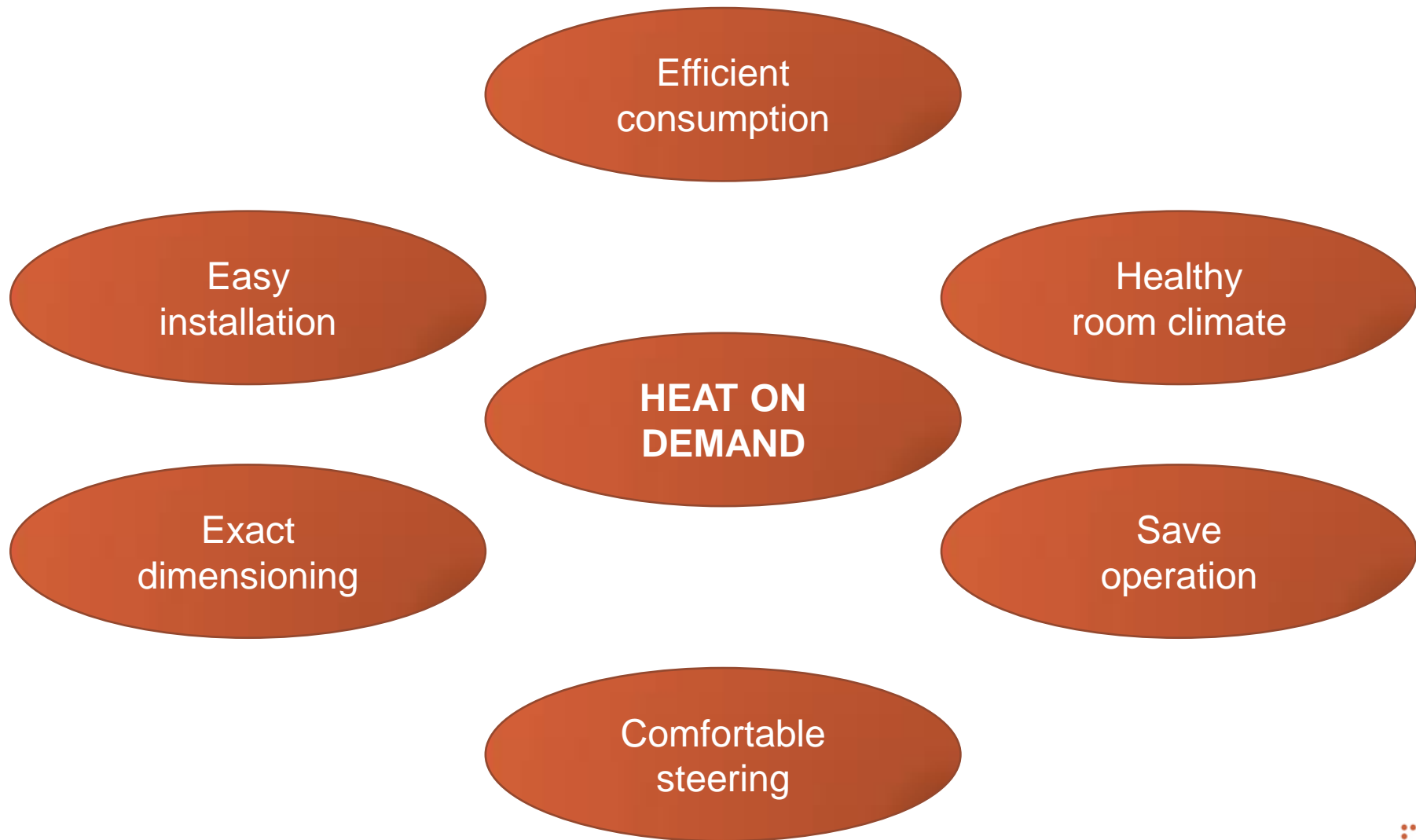
Heat consumption is big factor of expense

- ▶ on average 30 % of total energy costs
- ▶ additional costs for maintenance & service

## Reduction of costs

- ▶ Cleaner production of heat
- ▶ Smarter consumption of heat

# Intelligent heating = heat on demand



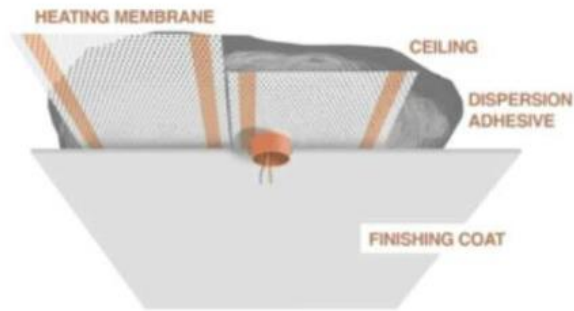
# ælectra®



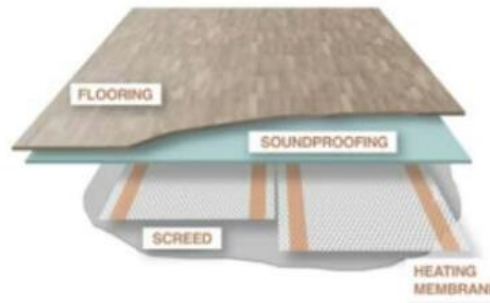
- a unique, patented carbon fiber membrane made out of recycled PET
- low voltage electricity (24/36V) to produce save and healthy infrared heat
- low temperature
  
- for residential apartments, offices, hotels, chalets

# How to install ælectra®

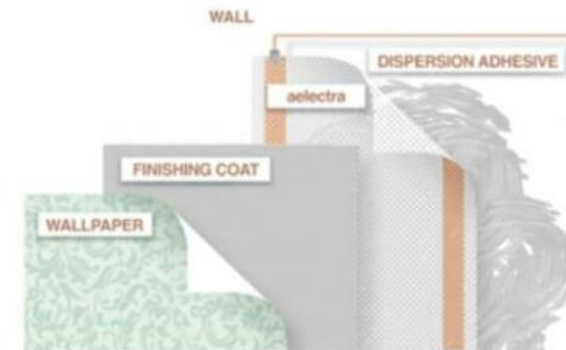
Easy, Fast, Flexible & Safe



On the ceiling



Under the floor



On the wall

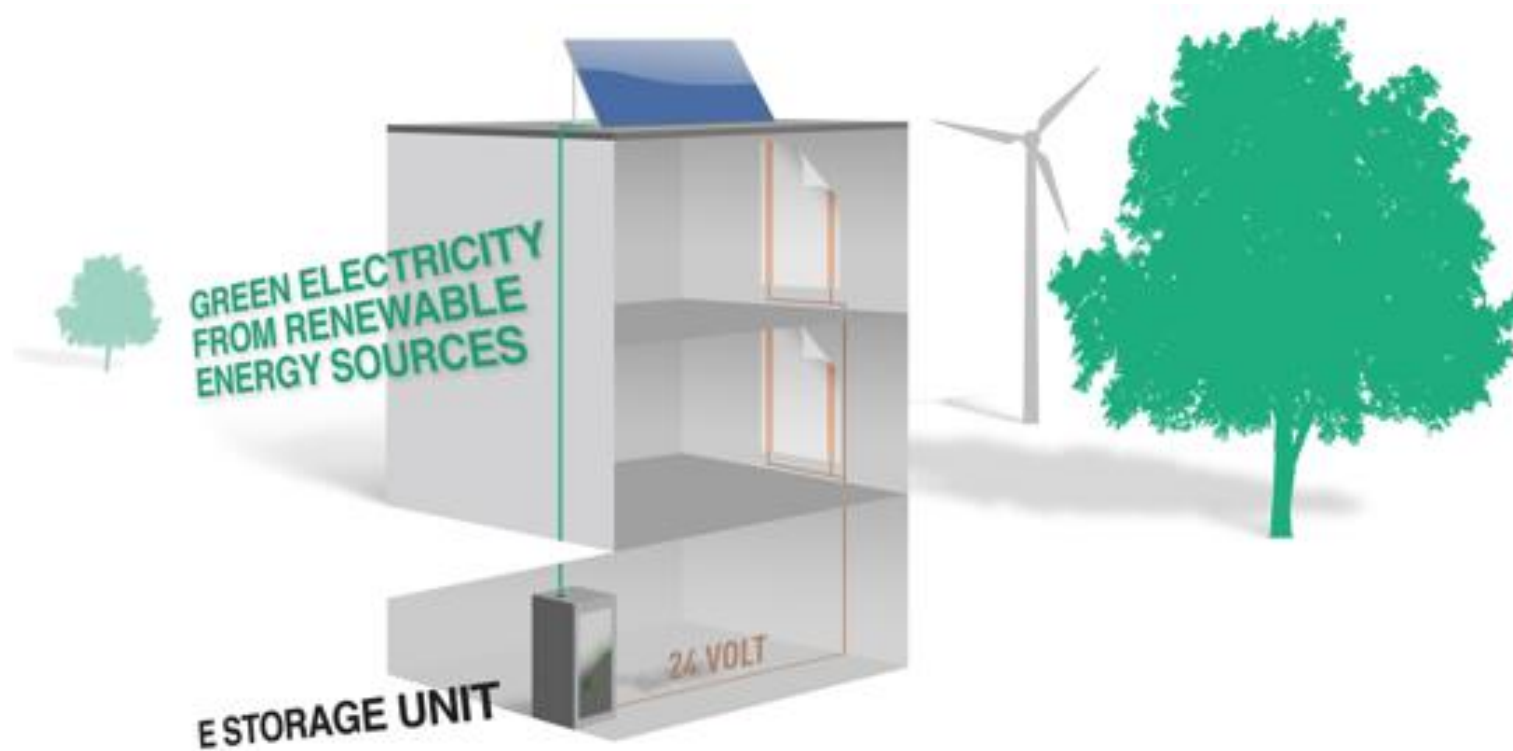
## Smart heating without installation limits

- Full flexibility of placement (floor, wall, ceiling)
- Full flexibility in timing of installation (room by room, apartment by apartment)

# ælectra® heating membrane

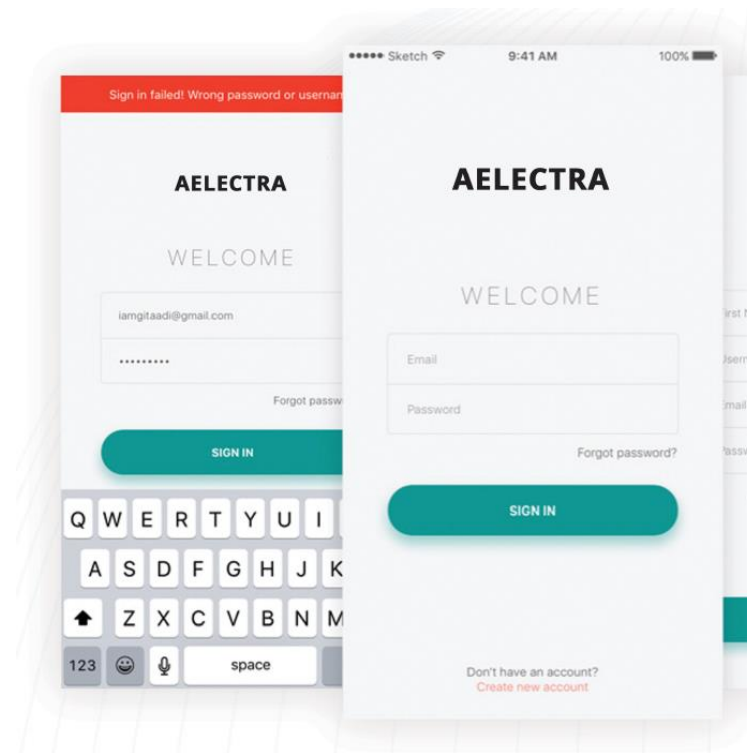
- Maintenance free
- No dry air, convection of dust
- Anti-mould and anti-humidity effect
- Thermal core activation of walls or ceiling
- No hot spots, radiators, pipes, pumps, boilers
- Scalable system (membrane + battery + photovoltaic)
- In combination with battery useful for grid stability
- Up to 100 % green energy useable
- Very fast reaction time (1 minute)
- Easy link with smart & digital home solutions

# ælectra® integrated heating system



No energy medium can be used as smart and flexible as electricity.

# ælectra® smart steering



**Smart phone app**

**Steering – Monitoring – Control**

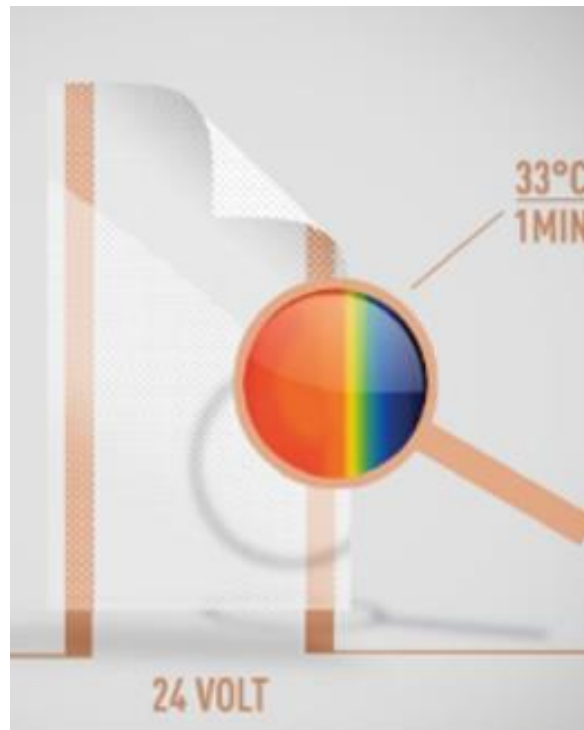


# Heat on demand with ælectra®

Take advantage of fast reaction time

Window sensors

Motion detector



Remote control

Individual room control

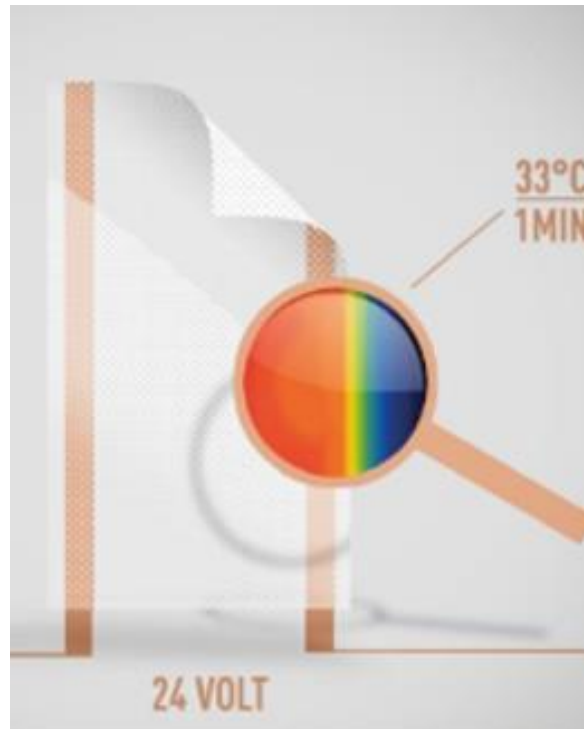
Production of heat only when it is needed

# Data evaluation with ælectra®

## Data based energy management

Consumption  
evaluation

Wrongdoing  
correction

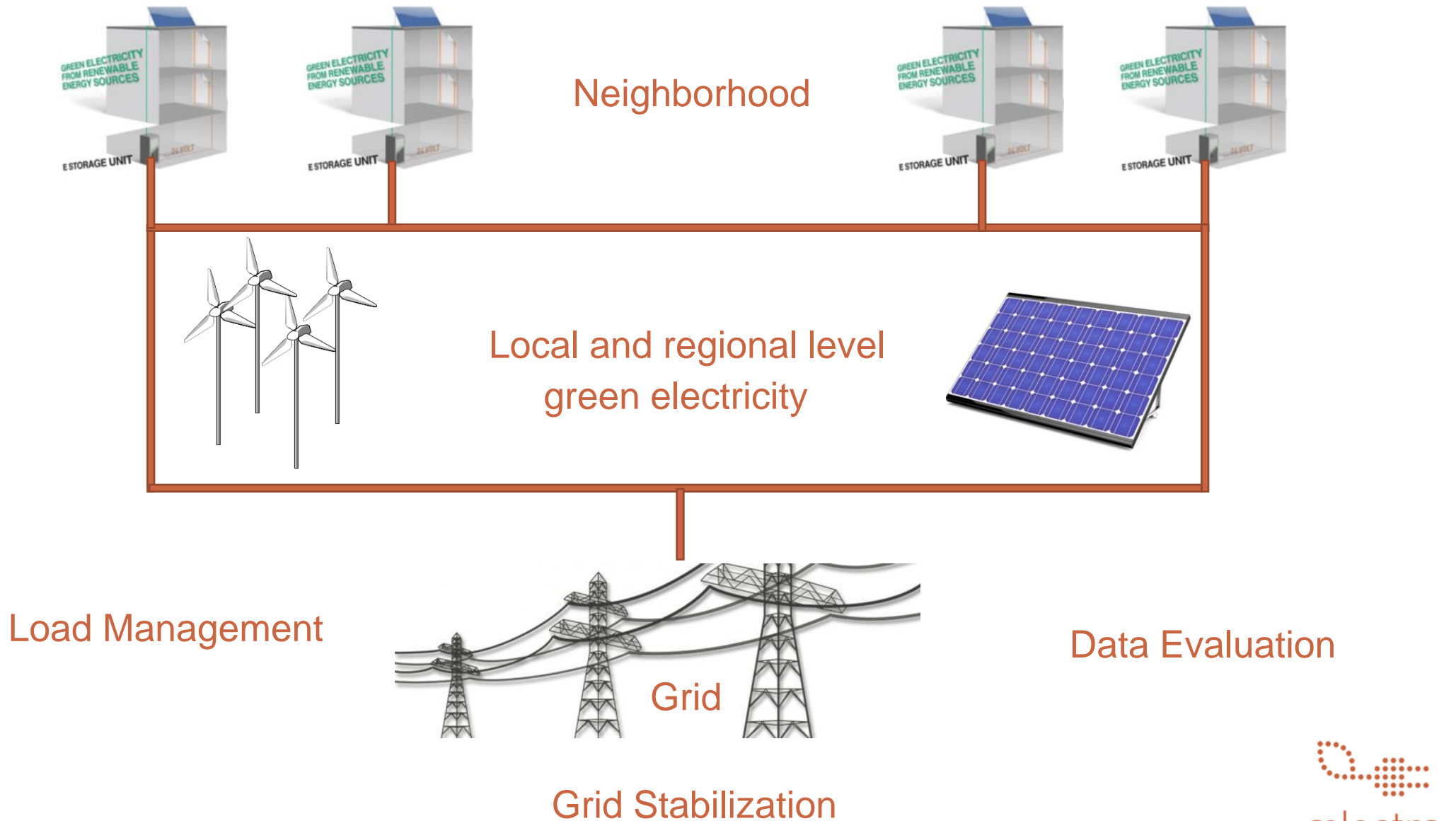


Behaviour  
adaption

Load  
management

Optimization of energy usage for heat production

# Connected smart heating



# Renovation

- 2015: Installation of ælectra® heating system in apartments of 80 sqm
- Customer: Stadtwerke Düsseldorf, Dusseldorf, Germany
- Replacement of inefficient electric night-storage heaters
- 2018: monitoring shows 55 % less energy consumption per year



- 55 %



# New Construction

- 2016: Installation of ælectra® heating system in office building of DB International
- Customer: Deutsche Bahn International GmbH, Berlin, Germany
- Installation of ælectra® as additional heating system for additional comfort



# ælectra® in Austria

## What are we looking for?

- ▶ **property companies and real estate investors**
- ▶ **partner for resale, distribution and installation**



ælectra® Work Lab / Deutsche Energiesysteme GmbH  
EUREF Campus | Haus 4  
Torgauer Straße 12-15, D-10829 Berlin/Germany  
Tel.: +49 (0) 30 34 64 924 60  
[info@aelectra.de](mailto:info@aelectra.de) / [www.aelectra.de](http://www.aelectra.de)

