

Smart Energy Community Approaches



Moderation

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VITO



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energienetz GSG



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Vera Nunes
EDP

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SMART CITIZENER



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LEARNING

TRAIN ME HOW TO SUCCESSFULLY
ENGAGE WITH CUSTOMERS >>

DEVELOPING

HELP ME DEVELOP NEW SMART GRID
PROJECTS AND SERVICES >>

EXPLORING

I'M LOOKING FOR MORE INFORMATION
ON A SPECIFIC TOPIC >>

ENGAGING PEOPLE IN SMART GRIDS

Users are taking the centre stage in future energy systems. Smart grids will only succeed if we take into account the desires, motivations and concerns of people. Developing smart grid products and services represents not only a technological challenge, but equally importantly a social challenge.

People have to be engaged in an exciting journey, that allows them to discover the benefits of the

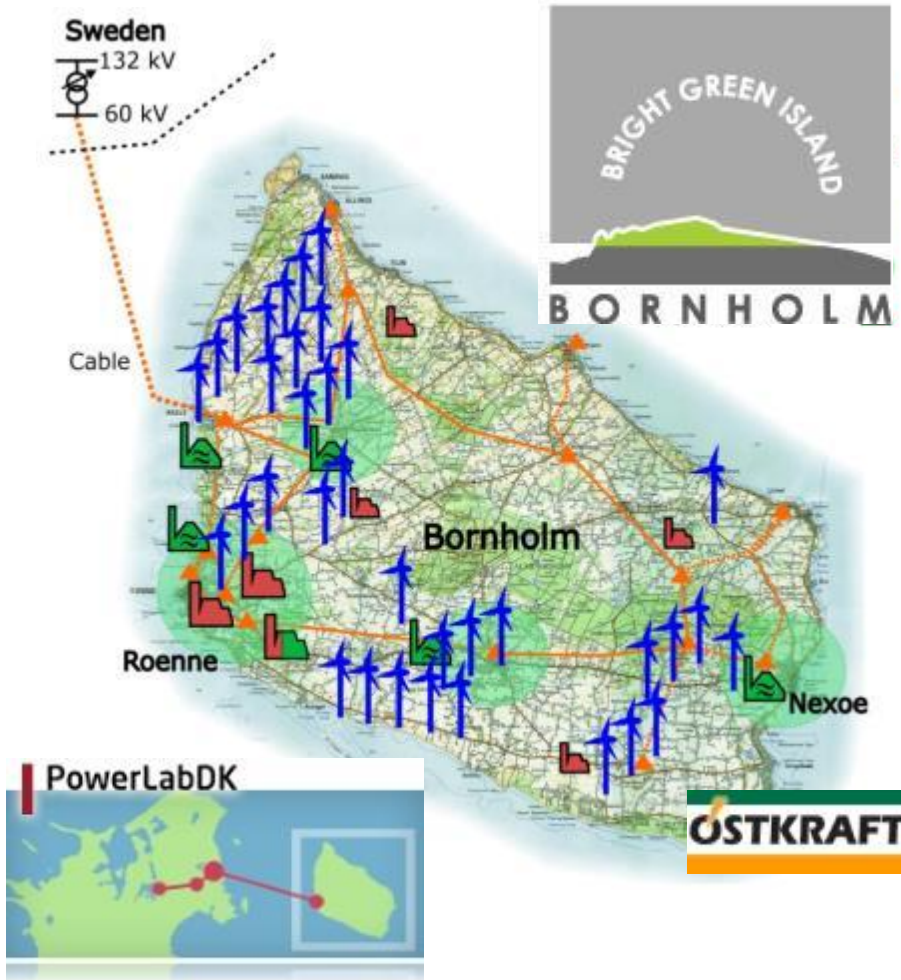
EcoGrid EU

Østkraft - a physical laboratory



Presentation at: Final conference S3C project
Presentation by: Maja Felicia Bendtsen, sep. 2015

Bornholm



Generation:

- 16 MW biomass CHP
- 2 MW biogas CHP
- 37 MW wind turbines
- 7 MW PVs
- 73 MW fossil generator (reserve)
- ~130 GWh produced/year

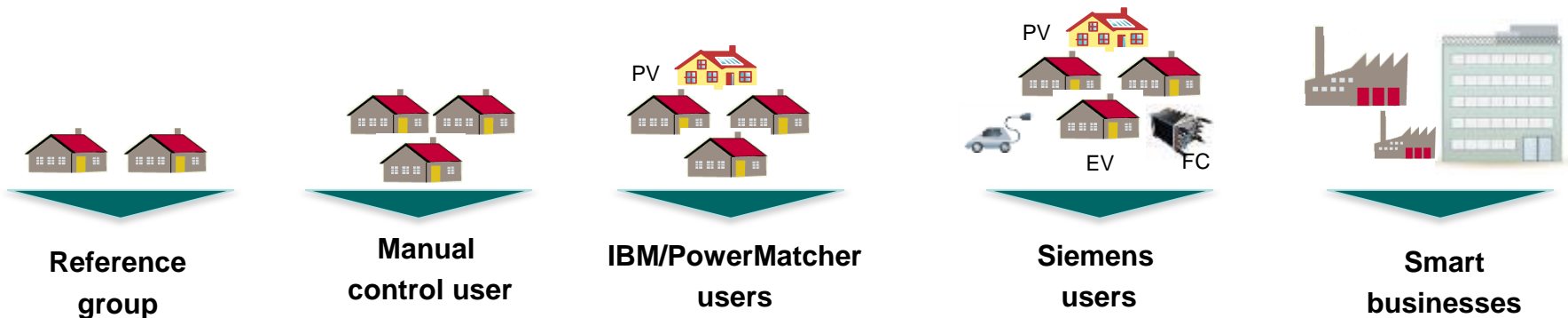
Consumption:

- 28.000 customers
- 17.500 houses without electric heating
- 2500 houses with electric heating
- 2500 holiday houses
- ~ 260 GWh consumed/year

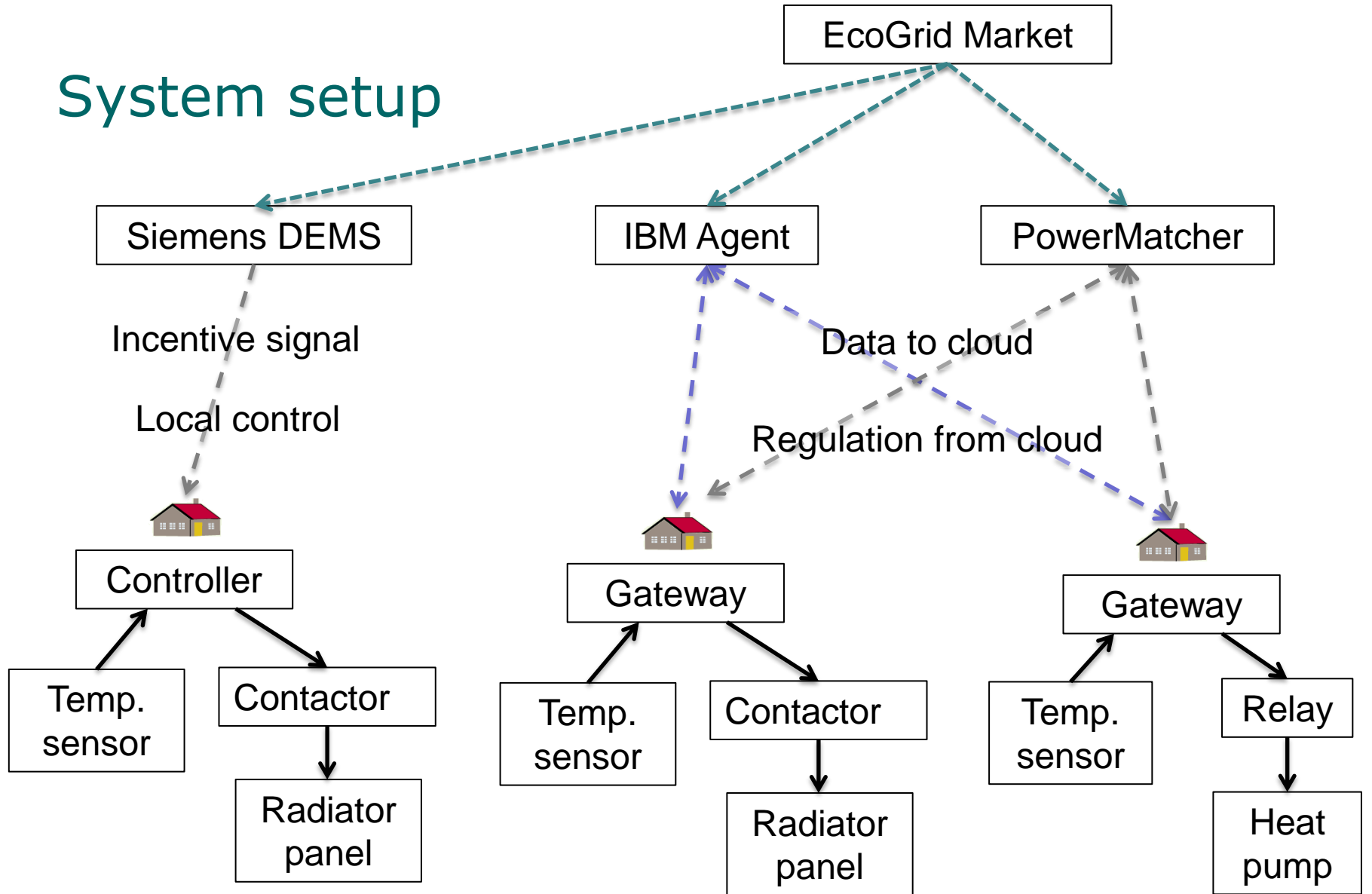
The EcoGrid participants

~25 % of available houses

- 350 customers in the reference group
- 500 in manual control group. Ordinary households. Smart meters and price signals
- 650 IBM/PowerMatcher households. Get smart meter and home automation system. Primarily electric heated or heat pump households
- 450 Siemens households. Get smart meter and home automation system. Primarily electric heated or heat pump households
- 20 businesses with smart meter and energy management system



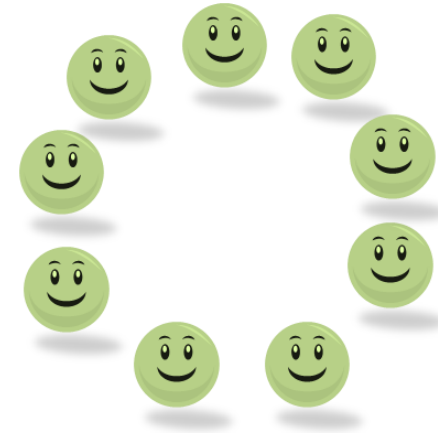
System setup



Thank You
for Your Attention



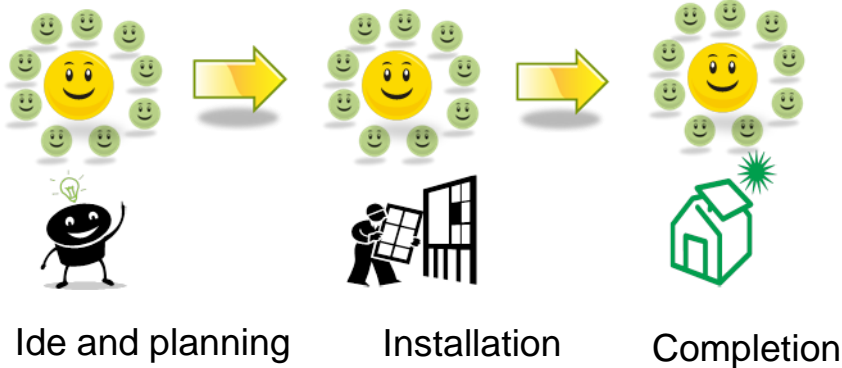
Early adopters and followers



UppSol
2020

Experience from working with S3C

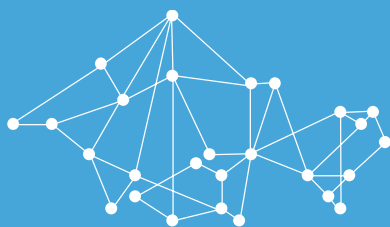
- Are we reaching our targets?
 - S3C provided us with an evaluation as a basis for further discussion
- What is important for the prosumer?
 - S3C helped us with a method for structured reflection and check ups
 - The market for PV-installations is developing fast in Sweden
 - Customers knowledge is growing fast



Keys to success and ways to improve



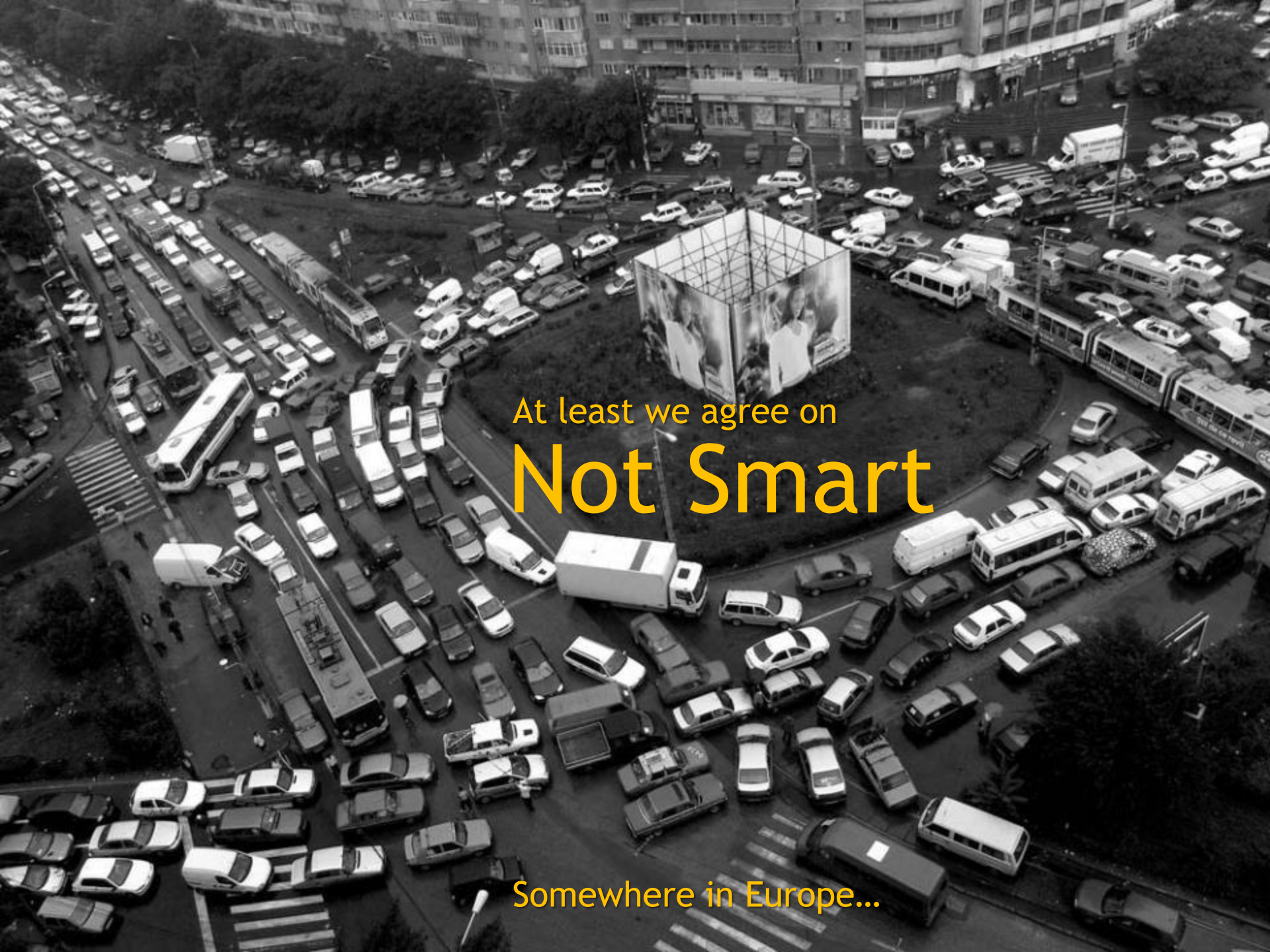
- Spending time with your target group -
- Avoid preaching (as the expert)
- Let others tell your story (peer to peer learning)
- Workshops isn't enough, more time with individuals. – There's always an “expert” in a group!
- Difficulty giving advise (with public funding)
– Witch PV- installers are the best and which are the worse?



S3C FINAL CONFERENCE

SMARTLY SUSTAINABLE CITIES: CITY-ZEN

HAN VANDEVYVERE 24.09.2015



At least we agree on

Not Smart

Somewhere in Europe...

3 SIMULTANEOUS DEVELOPMENT TRACKS / 2 PILOT CITIES

Urban renovation / housing retrofit on the district scale

Both in Amsterdam & Grenoble > 1.000 homes

Average energy savings should be of order of 80%

District heating & cooling

In particular low temp. heating/high temp. cooling; smart buffering & exchanging

Smart grids

Amsterdam > 10.000 homes

... taking 'the next big step': integrated flexible open infrastructures / multi-energy systems

MOVING BEYOND THE STATE OF THE ART?

Collaborative processes:

- » **Strong involvement of citizens** ‘Serious gaming’, on site measuring & interactive communication, expert consultancy for citizens
- » **Improvement of existing value models** and development of new ones through an integrated intersectoral approach Redistributing new responsibilities and financial flows
- » **Interaction between citizens and industry** Citizens and industry interact through multiple ways (e.g. online platform, co creation) order to come to accepted methodologies, products and services

Retrofitting to zero energy buildings:

- » **Co-maker strategy** (A’dam)
- » **Living labs** (A’dam) Technological test cases on a smaller scale
- » **Mainstreaming retrofit** in privately owned buildings (Grenoble)

Innovative solutions for medium and low voltage grid:

- » **Expanding on large scale i-net** (Alliander, A’dam) 40.000 households to be connected, electrical storage, exchange heat-electricity, V2G,...
- » **Smart, integrated energy systems (electricity +)** (Grenoble)

INOVGRID

SMART ENERGY THINKING

Vera Nunes, EDP DISTRIBUIÇÃO

24th September 2015,
Berlin



EDP... FROM A PORTUGUESE ELECTRICITY COMPANY TO A GLOBAL ENERGY PLAYER

EDP DISTRIBUIÇÃO 6 MILLION CUSTOMERS



1 TOP WORLD
Dow Jones Sustainability
Index Utilities Sector 2014

#2 EUROPE
Weight of hydro &
Wind (68% @ 23 GW)

EBITDA
Portugal 45%
Other 55%

#1 PORTUGAL
Industrial Group





PATRIMONIO MUNDIAL

S3C

FOSTER 'SMART' ENERGY BEHAVIOR
VIA ACTIVE USER PARTICIPATION

EUROPEAN FP7 PROJECT



PORTUGAL
EDP Distribuição

BELGIUM
VITO (Coordinator)

GERMANY
BAUM

ITALY
RSE

NETHERLAND
ECN

SLOVENIA
INEA

SWEDEN
SP

SMART METERS ARE ONLY AS SMART
AS THE CONSUMERS USING THEM.

Robert F. Powelson, Chairman, Pennsylvania Public Utility Commission

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Guimarães
Urban and Cultural Centre

Lamego
Rural Network

Évora
InovCity

Faro (islands)
Operation
challenge

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provide a better understanding of the relationship between the design and implementation and use of particular end user interaction schemes and the promotion of "smart" energy user behaviour



TESTING TOOLS & GUIDELINES

SEVERAL LESSONS LEARNED



OBJECTIVES

RESULTS

Gamification

- Top 3 players consumption reduction: 33%; 27% and 22%
- Top 10 players: 28% average consumption reduction
- 82% would recommend to install the smart meters at a national level

Stakeholders Engagement

- Different stakeholders degrees of involvement
- Highest level of involvement: most frequently & systematic contacted customers
- How to inform: Be clear, light, frequent and pragmatic

Home Energy Management

- The HEM service is perceived to be reliable and convenient service
- Allows to monitor, control and optimize the household energy consumption

Meter Installation

- Meter Installation process should be continuously supported by communication
- Continuous improvement will impact customers satisfaction

INOVGRID

WELCOME TO SMART ENERGY



www.inovgrid.pt

THANK YOU

Shutterstock/f9photos

inovgrid
smart energy grid

edp distribuição

***energienetz* GSG**

energienetz GSG

A new co-operation model

24.09.2015

Andreas Schläpfer, Coordination

Co-Initiators

3 Cities & State of St.Gallen

Energierstadt Gossau SG
Innovativ in Energie

Energierstadt St.Gallen
Innovativ in Energie

Energierstadt Gaiserwald
Innovativ in Energie

Kanton St.Gallen
Amt für Umwelt und Energie

2 Industry associations

HIG
HANDELS- UND
INDUSTRIEVEREINIGUNG
GOSSAU SG

**INDUSTRIE - VEREINIGUNG
ST.GALLEN - WINKELN
GENOSSENSCHAFT**

Stadt Gossau
Stadtwerke

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Sankt Galler Stadtwerke

2 Power suppliers

Goals

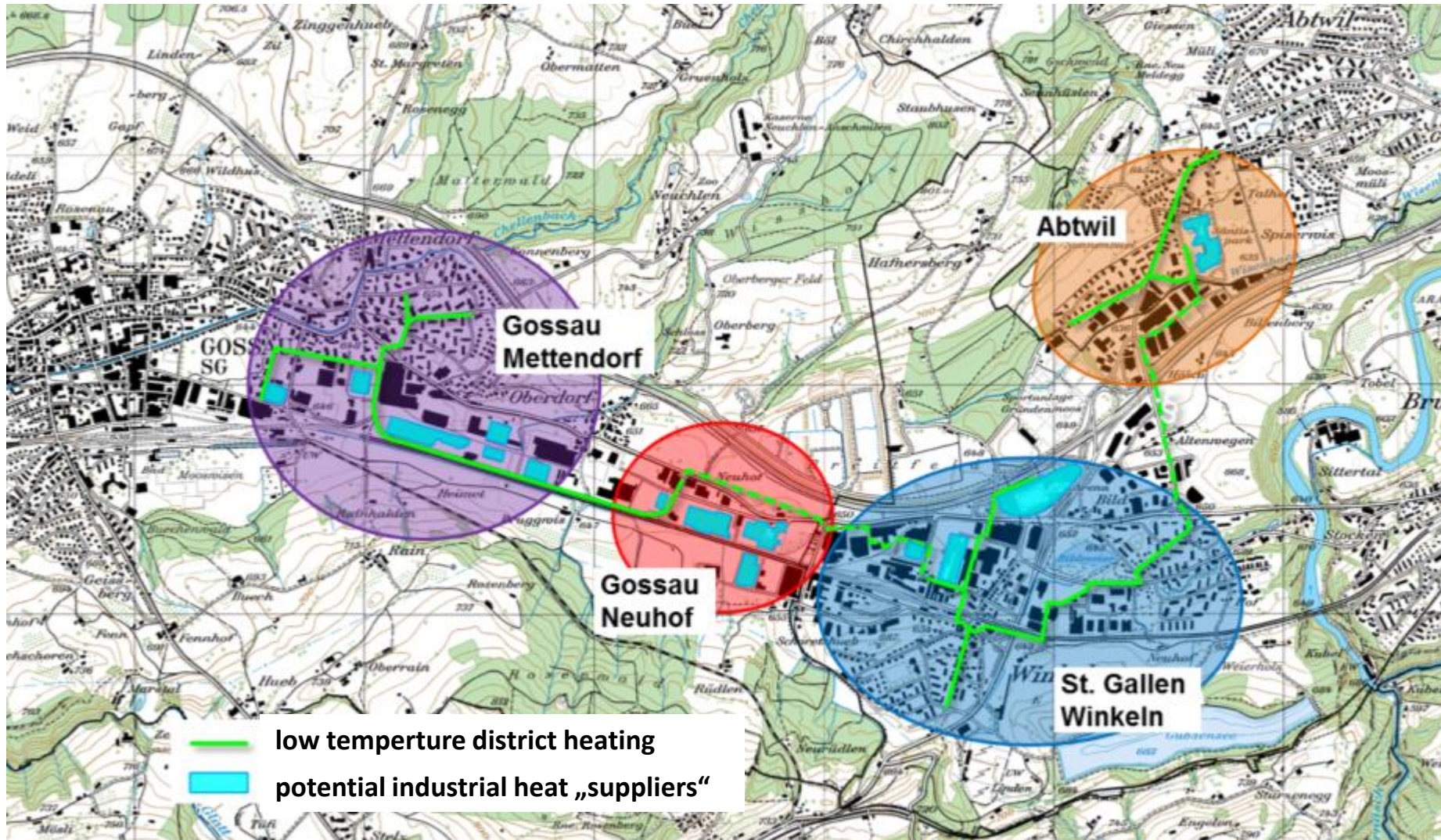
1. Company level: to increase energy efficiency

- Each member is obliged to increase its energy efficiency based on a contracted goal

2. Perimeter level: to develop sustainable energy supply

- Power suppliers and local communities develop an overall „energy strategy“
- and approach companies to share their heat energy and produce electric power (low temperature district heating & heat energy coupling)

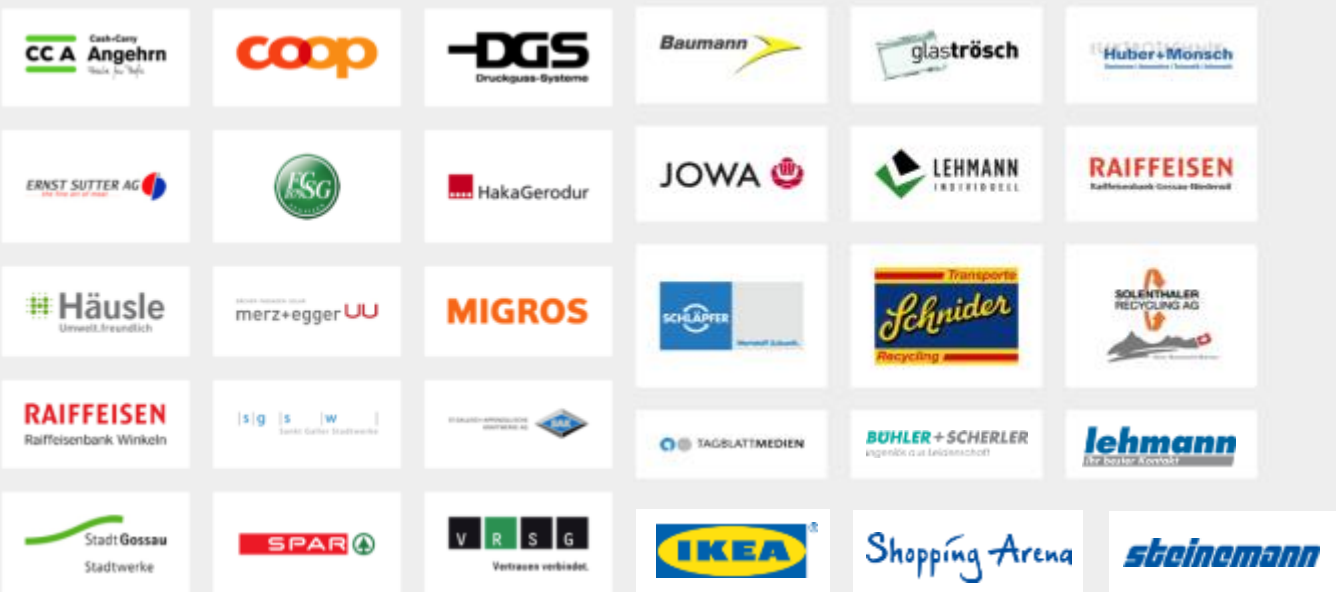
Project „low temperature district heating“: overview of potential energy clusters





Members

by 31.08.2015



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