



**S3C**

SMART CONSUMER  
SMART CUSTOMER  
SMART CITIZEN

**S3C PROJECT PANEL:  
EXPERIENCES WITH  
INVOLVING END USERS IN  
SMART GRIDS PROJECTS**

# Our Panelists



- **Luís Cunha**, EDP
- **Wim Cardinaels**, VITO
- **Fabio Luigi Bellifemine**, Telecom Italia
- **Saskia Muller**, Amsterdam Smart City
- **Tobias Graml**, BEN Energy
- **Elwin ter Horst**, p2p project management / TF  
Innovatie Utrecht Regio



# Guiding Questions



- Which experiences have been made in Smart Grid project with activating and engaging end-users?
- Where do they overlap and where do they differ?
- How would the present project managers see their respective involvement approach: consumer-, customer- or citizen-oriented?
- How do the projects compare in engaging people at different stages of the project (planning/design phase, recruitment, installation, trial, evaluation etc.)?

**Luís Cunha, EDP**  
**INOVCITY**

# Évora: InovCity

Évora, May 2014



**Smart Communication**

	<b>Presence in the local press</b>		<b>Client research and Social studies</b>		<b>Involvement of the Town Hall and other local public Authorities</b>
	<b>Energy Bus in Évora</b>		<b>Mailing and information to Évora</b>		<b>Monthly Newsletter to all Energy related professionals in Évora region</b>
	<b>3D Model at InovCity Store in City Centre</b>		<b>Smart meters in historic stores at the historical centre</b>		<b>Collaboration with Évora University</b>
	<b>Test of new products and services</b>		<b>InovCity website and local social networks and blogs</b>		<b>Smart Grids conferences and meetings in Évora</b>

In the last 12 months consumers have interacted with their electricity provider for 9 minutes (on average)

Source: Revealing the values of the new energy consumer – Accenture 2011 and 2013

-3,9%

# Smart Consumers

Evaluation of the 'InovCity effect'



+30.000 EDP Boxes installed



Invoices based on real consumption



Participation in sessions with small groups of Clients



Energy Bus in Évora



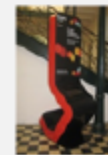
Presence in both Local and National press



Energy Efficiency tips (Mailing)



Web access to EDP Online



Conferences and Events about Smart Grids

**-6,6%**



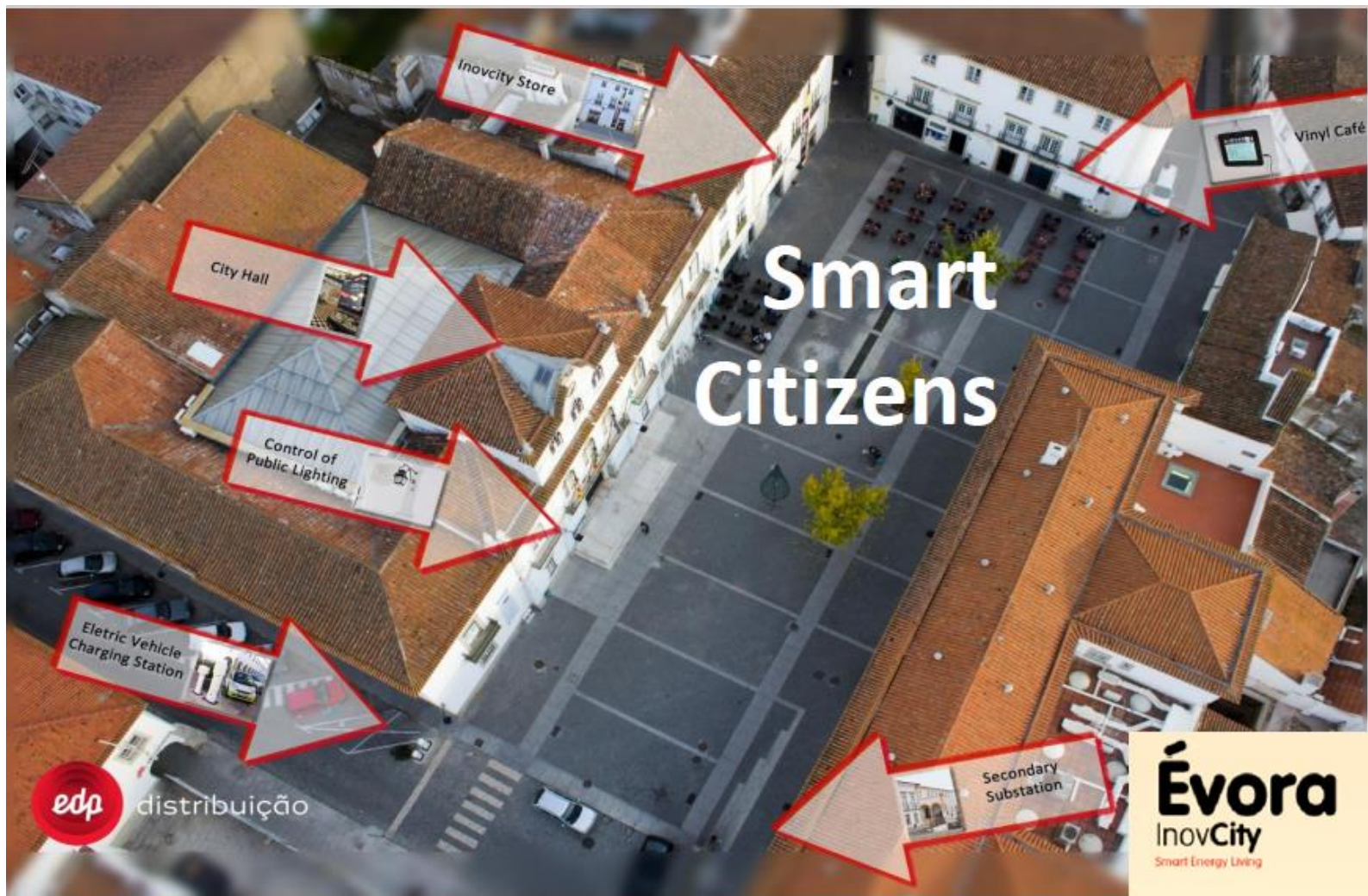
**Smart  
Customers**

**Web Portal**

**Tariff Simulation**

**Alerts  
(SMS, email and mail)**

**Direct Feedback**



-10.5%

# Smart Commercial 3Cs





# Wim Cardinaels, VITO

## LINEAR



# Linear

## Intelligent Networks

### S3C Midterm Conference

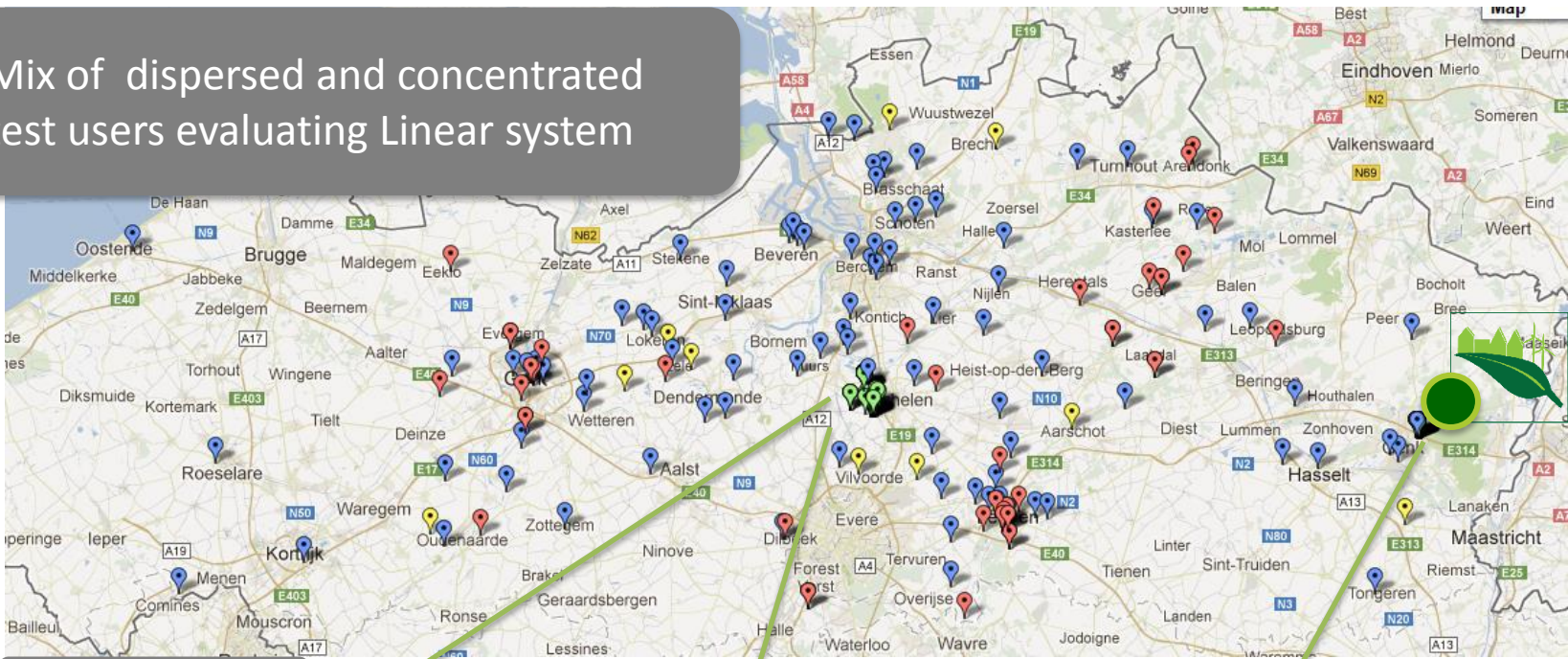
[wim.cardinaels@energyville.be](mailto:wim.cardinaels@energyville.be)



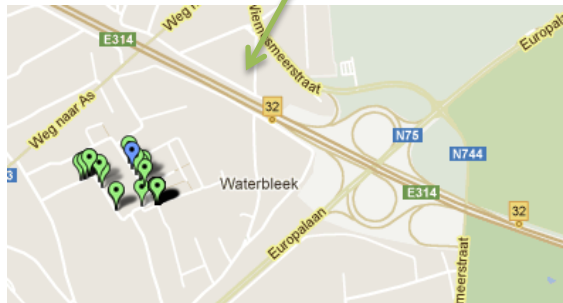
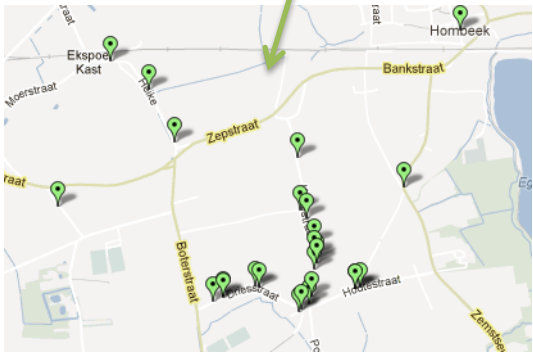
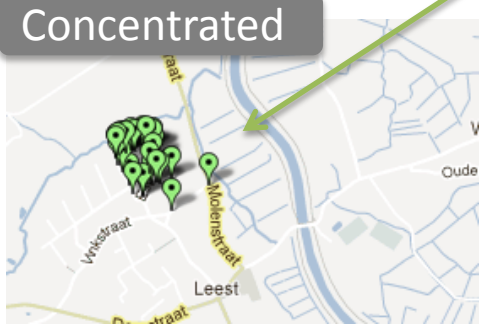
SMART CONSUMER  
SMART CUSTOMER  
SMART CITIZEN



Mix of dispersed and concentrated test users evaluating Linear system



Concentrated





94 inst  
400kWp

Sub metering  
2000 App

15  
boilers

6 EVs  
10wks/fam

130

GRID or

110

> 460 slim



Research Partners  
9,5 M€ funded by IWT

Linear acknowledges the  
Flemish Government for its support



User group

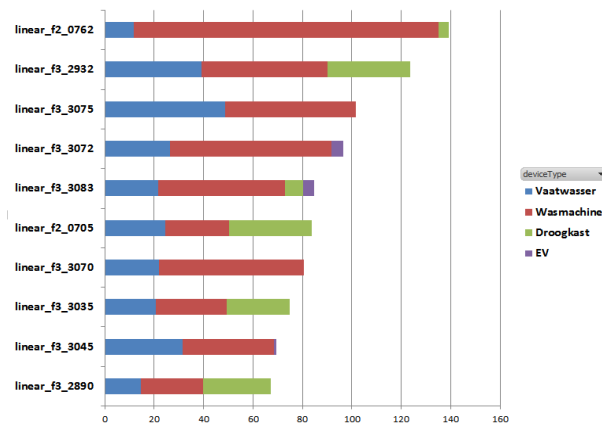
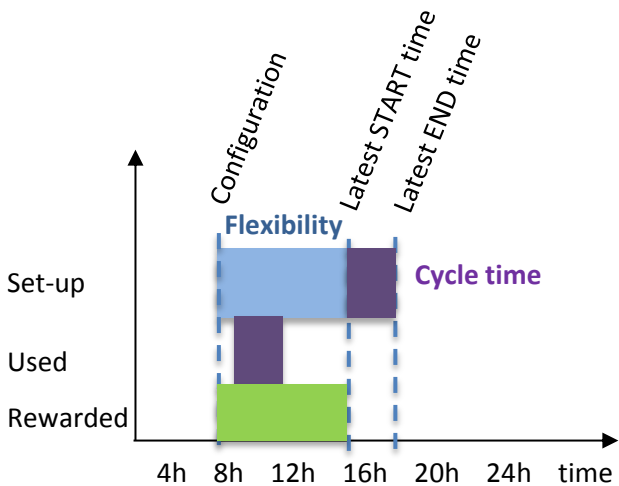
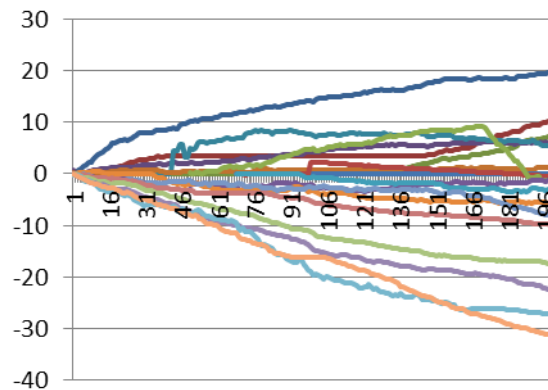
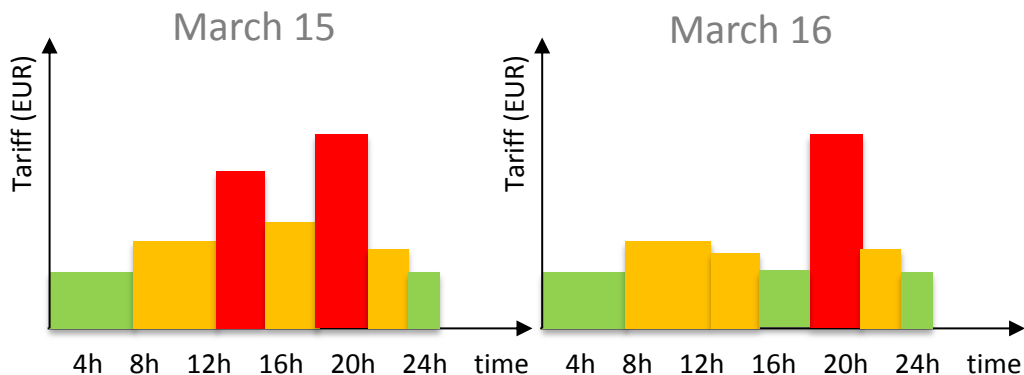


Industrial Partners  
30 M€ in kind (staff + systems)



Additional Members  
Steering Committee



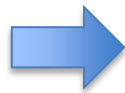


## 1. Create Awareness

## 2. Small Effort & Explain Impact

- comfort > final decision
- financial > can we really sell it as a saving?
- time > effort, complex or habit?

- Connectivity
- Comfort
- Security



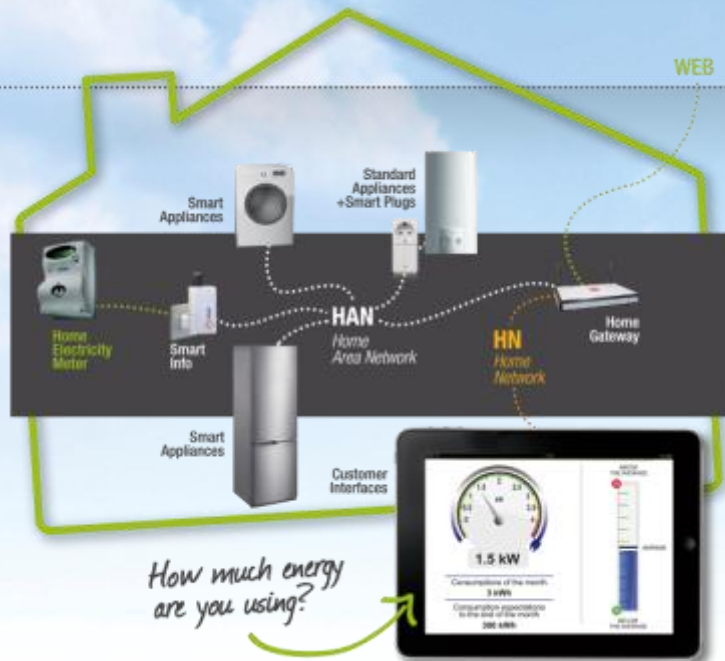
Smart Home



Smart Grid



**Fabio Luigi Bellifemine, Telecom Italia**  
**ENERGY@HOME**



Fabio Luigi Bellifemine, Telecom Italia

***ENERGY@HOME ASSOCIATION  
VALUING THE DEMAND SIDE FLEXIBILITY THROUGH  
A SMART HOME ECO-SYSTEM***

# Energy@home Association

**Non-profit Association founded on July '12**

**22 members from very different industrial sectors**

**Scope: demand side management & home energy efficiency, not limited to the Italian market**

**Goal: create a market for new Value Added Services based upon device-to-device communication and demand side management**

**Approach: Open and International Standards**



<http://www.energy-home.it>

We work  
**TOGETHER  
TO IMPROVE**  
*Energy efficiency*  
in our  
**HOMES**

## Founding Members:



## Ordinary Members:



## Aggregate Members:



# Main achievements so far



## Standard ZigBee Home Automation 1.2

- acknowledges Energy@home in standard, press release & public webinar
- Integrates Energy@home use cases and technical specifications



## Prototype system

- Integrates 11 different devices and systems from E@h partners/off-the shelf products
- Presented at EU Utility Week in Amsterdam
- Permanent demo at ISMB and Telecom Italia premises



## Trials

- 5 trials in Europe, one is in Italy



## Open Source

- ZigBee Gateway
- Sw of the client side
- Java for OSGi



## Cost Benefit Analysis

- Submitted to Confindustria
- Available as public document
- Main Contributors Enel, TI, CECED
- For some classes of users PP in 3 years is possible under some conditions

# Energy@home Italian trial

56 users in Italy (20 have PV plant)



## User functionalities:

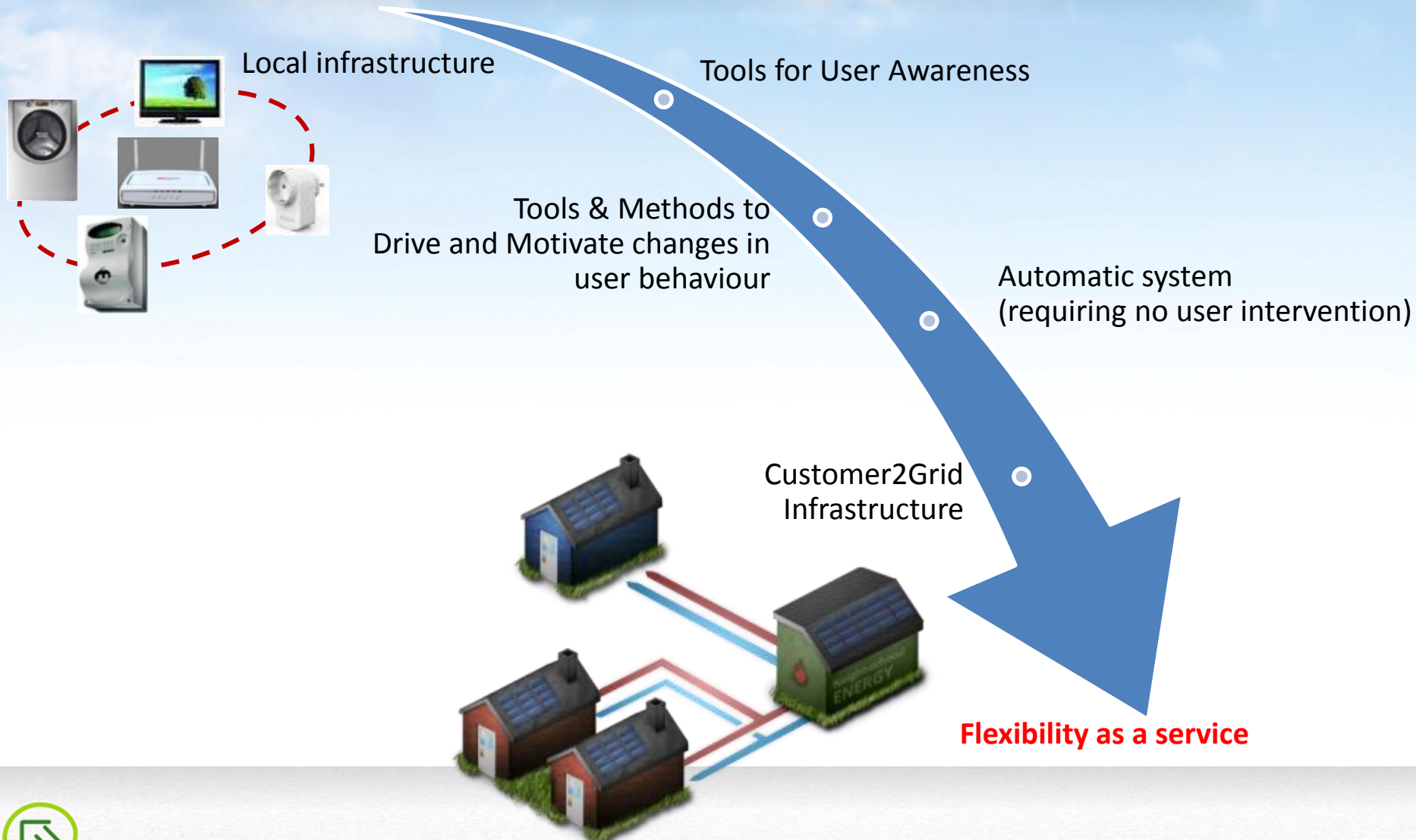
- Awareness:
  - monitoring (kWh, stand-by, €)
  - aggregated reports
  - social comparison
- Automatic scheduling
- Overload warning



## Highlights:

- Automatic decisions are required
  - reaction & interest diminishes as the newness wears off
- Occupant Behaviour matters!
  - behaviour change is a very cheap energy efficiency measure!
- Education & Social comparison motivate changes
- Avg Energy saving: 9%
- 5% energy shifted to off-peak hours
- Stand-by consumption reduced by 15%
- Contractual Power can be reduced
- Users like Smart Info, Smart Appliance, Smart Gateway
- Users do not like Smart Plugs
- Scope Economy between Home Energy Management Services and Smart Home Services

# Incremental steps towards FlexibilityAsAService

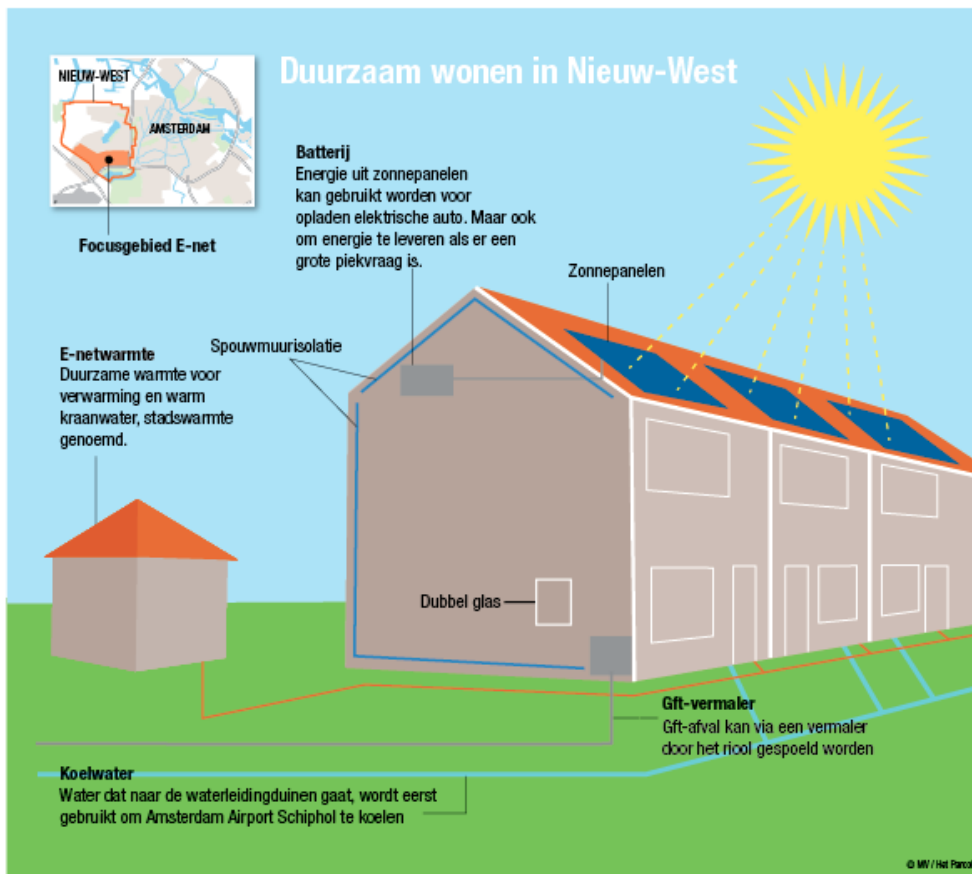


Saskia Muller

**AMSTERDAM SMART CITY**

# am smart erdam city

S3C Midterm Conference - Évora,  
Portugal, 27th May 2014



- Started April
- 23 partners, 30 million investment
- Citizen empowerment
- Project includes:
  - Smart grids
  - Solar energy & storage
  - Renovation. 52.000 m<sup>2</sup>
  - Grinder
  - Serious Gaming
  - Watercooling Schiphol

**CITY-ZEN**  
**TOGETHER WE MAKE  
THE WORLD SMARTER**

# Look at the city in a different way



*Cities will become smarter, but in different ways than many people expected. Whereas these top-down projects are struggling, some existing cities are getting smarter from the bottom up. Amsterdam is considered to be a leader of the pack.*

*The Economist*

## the beach

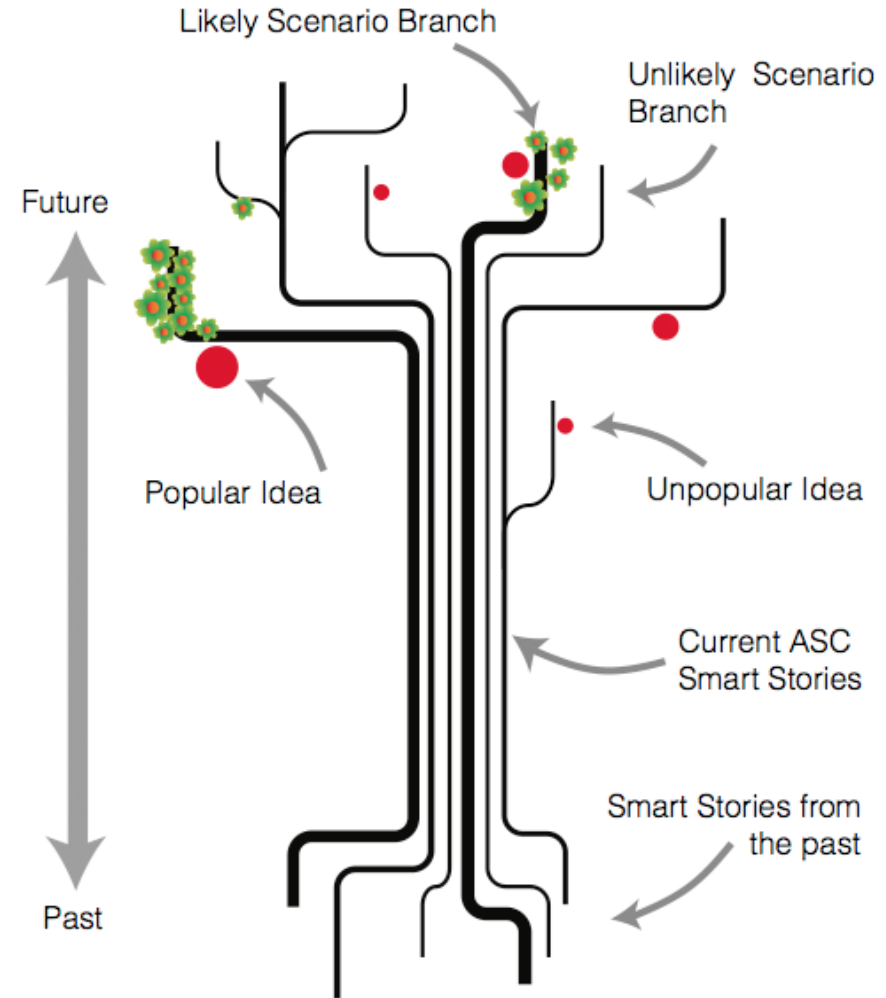


- **Goal:**
  - Make area smarter, more sustainable and more beautiful together with the inhabitants.
- **Analysis :**
  - 130 enquiries, 4 meetings, 50 conversations with inhabitants: 4 themes:
  - Lack of social cohesion, of safety, unemployment, waste.
  - Also many local initiatives, Potential!
- **Cooperation:**

the Beach, experienced in social innovation.. Design new visions and situations, organise active participation. Stress social and creative processes.

## How does it work?

- **Elements:** Roots, Trunk, Branches & idea apples.
- **Interaction:** Voting, discussing & pledging commitment, reduced anonymity.
- **User levels:** Anonymous, Contributing & Committing.
- **Outcomes:** Autonomous resident projects & more valuable proposition towards partners.



# Local fund New-West

**Board:**  
• Expert  
• Initiative  
• Entrepreneurf

Local experts

Local initiatives

Local gov

ASC



**Local fund New-West**

Housing corporations

**Contract fund & parties**  
- Money  
- Knowledge  
- People

## Local gems

Liveable

Makeable

Edible

Identity & relations

Creating room for initiative !

## Goal

- Develop appealing and smart concepts in/around the house
- Cooperation between suppliers of
  - Optic fibre, smart meters, smart waste collection, solar panels etc.
- Engaging residents by
  - increasing comfort
  - faster internet
  - lower energy bills
  - We get chicken

**Modernise 'nd keep expenses low**

## Six types

- **Idealistic saver**
- **Non-selfish inconsistent saver**
- **Economising saver**
- **Materialistic energy consumer**
- **Comfort oriented indifferent consumer**
- **Conscious sceptical consumer**

## **Sell**

- **Social media**
- **Kids**
- **Neighbours**
- **Challenges**
- **Benefits**
- **Language**

Tobias Graml, BEN Energy

**OSCAR, VELIX AND MANY OTHERS**



# BEN Energy

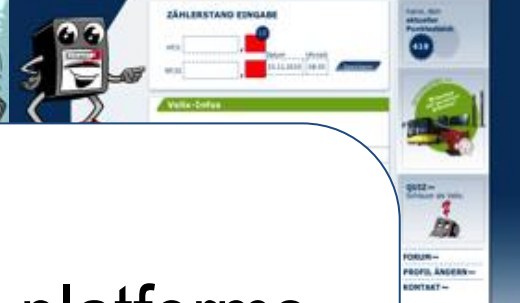
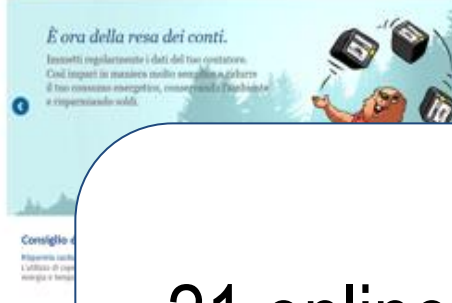
Changing the way  
people experience energy

Évora, Portugal, 27th May 2014

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21 online platforms with Swiss, Austrian and German utilities



RWE

SIND SIE EIN ENERGIESPARMEISTER?

Trainieren Sie mit RWE für die Energiewende. Erfahren Sie mehr über Ihren Stromverbrauch, stellen Sie sich spannenden Herausforderungen und sammeln Sie wertvolle Bonuspunkte.

In der Testphase können Sie sich auch ohne Code hier registrieren.

Ihr Energiecode

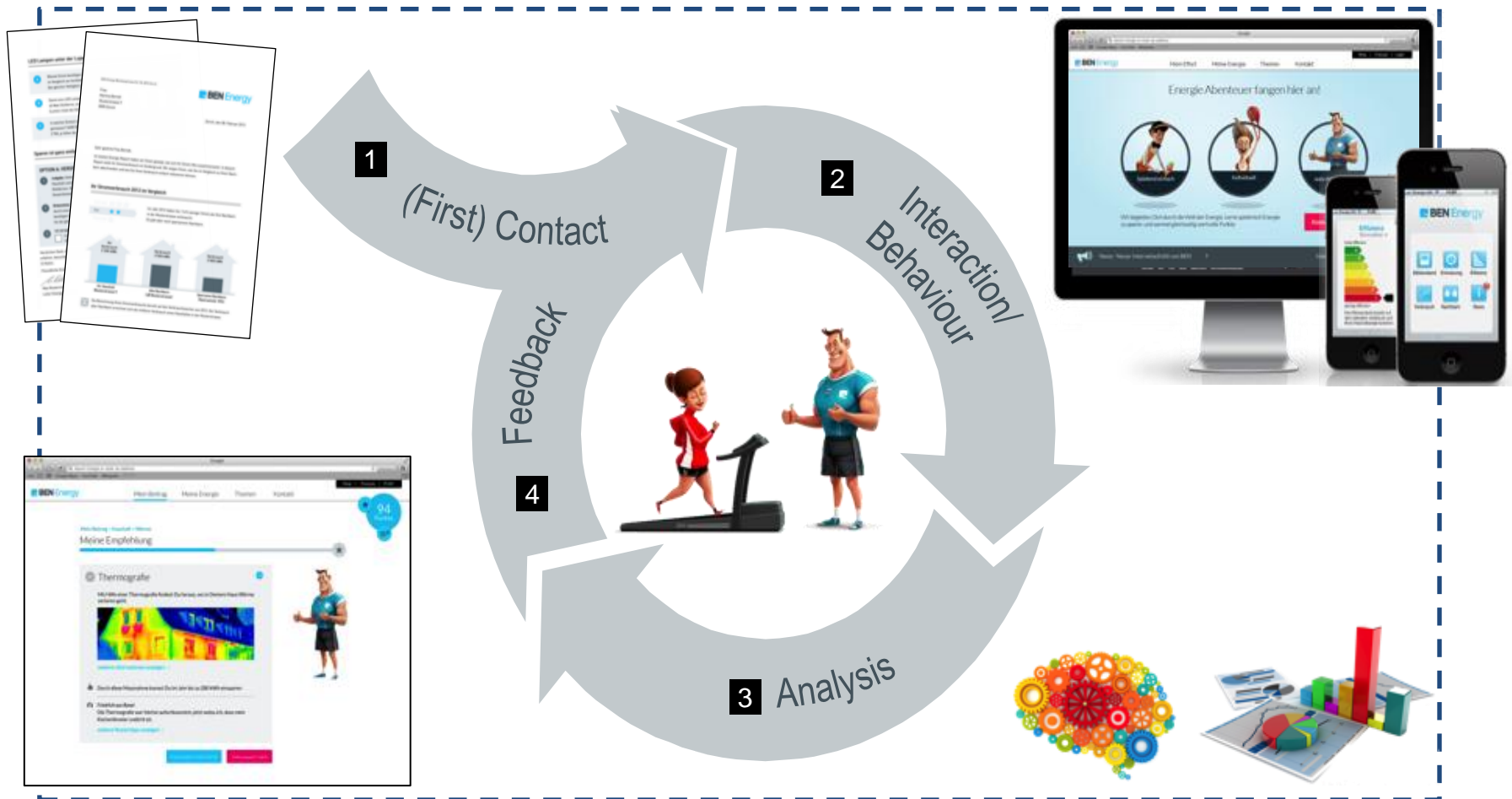


# Rational arguments and technology is not enough to engage customers

- We are «satisficers» not «optimizers»
- We are guided by routines
- We look at what others do
- Technology is an enabler



# Engagement is a process that must fit the customers' and the utility companies' needs



Elwin ter Horst, p2p project managent /  
TF Innovatie Utrecht Regio

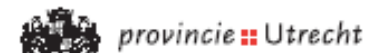
**SMART GRIDS VALUE4ALL**

# Rendement smartgrid voor iedereen!

## Projectpartners



## Co-financiers



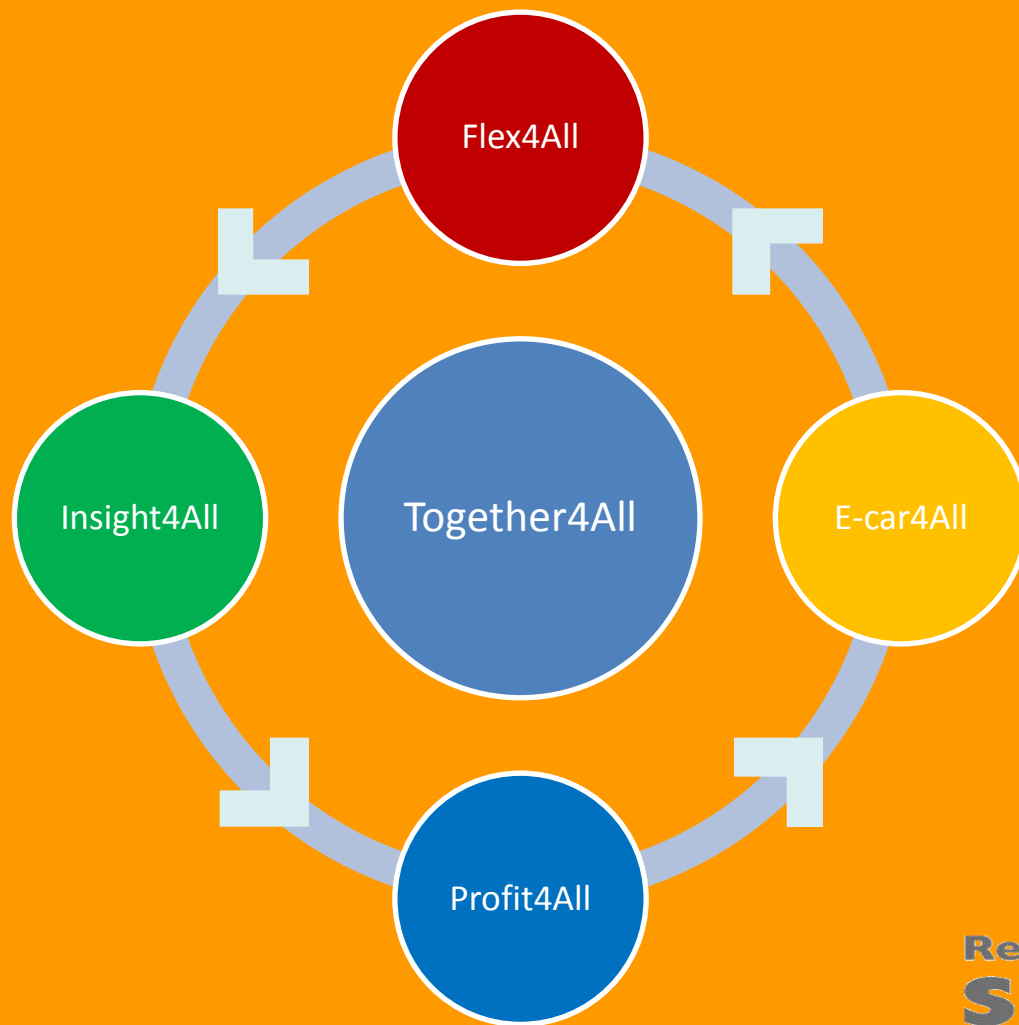


Rendement  
**smartgrid**  
voor  
iedereen!

**We create business  
by developing smart energy services**

Project duration 2012 - 2015

# Innovative services



# Engagement model



# Results

**200 smart households**

**100% participation,  
100% commitment**

**10 new project  
partners**

**The European  
test facility for  
smart charging**

**innovative  
smart services  
incl recipe for  
upscaling**