



SMART **CONSUMER** SMART **CUSTOMER** SMART **CITIZEN**

# HOW TO ENGAGE END-USERS IN SMART ENERGY BEHAVIOR?

Pieter Valkering, VITO

Partners: B.A.U.M., ECN, RSE, INEA, SP, EDP



# Why S3C?



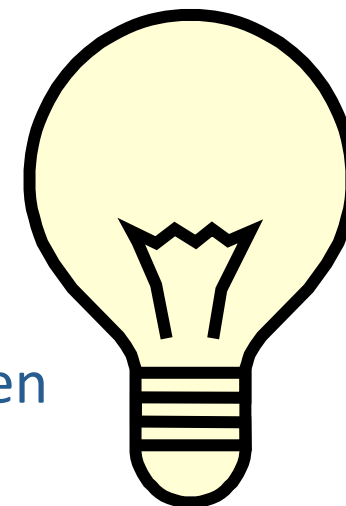
*“We thought we were undertaking an infrastructure project but it turned out to be a customer project.”*

PG&E president Christopher Johns

- Better understanding of end-user engagement in smart grid projects to promote ‘smart energy behavior’
  - ➔ Saving, flexibility, production, market participation
- Comparing approaches in a ‘family’ of EU smart grid projects
- Toolbox & guidelines for practitioners
- Work in progress!

## This talk

- Enablers, barriers and success factors from the literature
- Differentiate by end-user role: Consumer, Customer, Citizen



# Enablers & Barriers



Category	Enablers	Barriers
Comfort	<ul style="list-style-type: none"> <li>• Comfort (gain)</li> </ul>	<ul style="list-style-type: none"> <li>• Comfort (loss)</li> </ul>
Control	<ul style="list-style-type: none"> <li>• Additional control options (participation electricity market, advanced control of appliances, 'energy autarky')</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of control over appliances</li> </ul>
Environment	<ul style="list-style-type: none"> <li>• Environmental benefits</li> </ul>	
Finances	<ul style="list-style-type: none"> <li>• Financial or in kind incentives,</li> <li>• Lower energy bill</li> </ul>	<ul style="list-style-type: none"> <li>• Investment costs</li> <li>• Increased energy bill</li> </ul>
Knowledge & Information	<ul style="list-style-type: none"> <li>• More transparent and frequent billing</li> <li>• Detailed knowledge about electricity use</li> </ul>	<ul style="list-style-type: none"> <li>• In adequate information provision</li> <li>• Lack of end-user competences</li> <li>• Lack of awareness</li> </ul>
Security	<ul style="list-style-type: none"> <li>• Improved reliability of energy supply</li> </ul>	<ul style="list-style-type: none"> <li>• Privacy and security concerns</li> </ul>
Social process	<ul style="list-style-type: none"> <li>• Role models</li> <li>• Customer testimonials</li> <li>• Competition</li> <li>• Fun</li> <li>• Community feelings</li> </ul>	<ul style="list-style-type: none"> <li>• Free rider effects</li> <li>• Job losses</li> </ul>

## Activation phase

- *Provide added value*
- *Understand end-users*
- *Educate end-users*
- *Create commitment & appeal*

## Continuation phase

- *Effective feed-back, pricing & communication*
- *Variety of intervention methods*
- *Ease of use*
- *Social comparison*
- *Reflection & learning*

- ***smart consumers***
  - reduce energy consumption and costs
  - minimum effort
- ***smart customers***
  - new energy products and services (flexible tariffs, smart appliances)
  - becoming prosumer and active market partner
- ***smart citizens***
  - become part of a ‘smart energy community’
  - take responsibility to ensure local energy supply and preserve the environment

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- Much is known about enablers, barriers & success factors
- No blueprint, rather 'checklists'
- Further differentiation needed:
  - Which enablers & barriers are end-users particularly susceptible to?
  - What does that imply for engagement or facilitation strategies?
- Explicit consideration of the different roles end-users can take may be a step forward.

Pieter Valkering  
[pieter.valkering@vito.be](mailto:pieter.valkering@vito.be)

Erik Laes (coordinator)  
[erik.laes@vito.be](mailto:erik.laes@vito.be)

S3C deliverable 1.1  
<http://www.s3c-project.eu/>

S3C LinkedIn group

# Approach literature review

## Theory

- Social-psychology, economics, sociology, practice theory, innovation
- Segmentation
- Communication & (social) marketing

## Empirical research

- Feedback, pricing, communication
- Privacy & security
- New market structures & aggregation
- Experiences from mobile phone / ICT

## Synthesis

- Enablers and barriers
- Success factors
- Challenges for further research

- Understanding the target group(s) and matching their specific needs and situations
- Products & services with real added value
- Pricing schemes, feedback, communication and synergies
- Involvement of ‘non-energy’ stakeholders
- Bottom-up support: ‘citizen projects’
- New market structures and the role of end-users
- Scalability and replicability