



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

CHALLENGES FOR END USER ENGAGEMENT IN SMART GRID PROJECTS

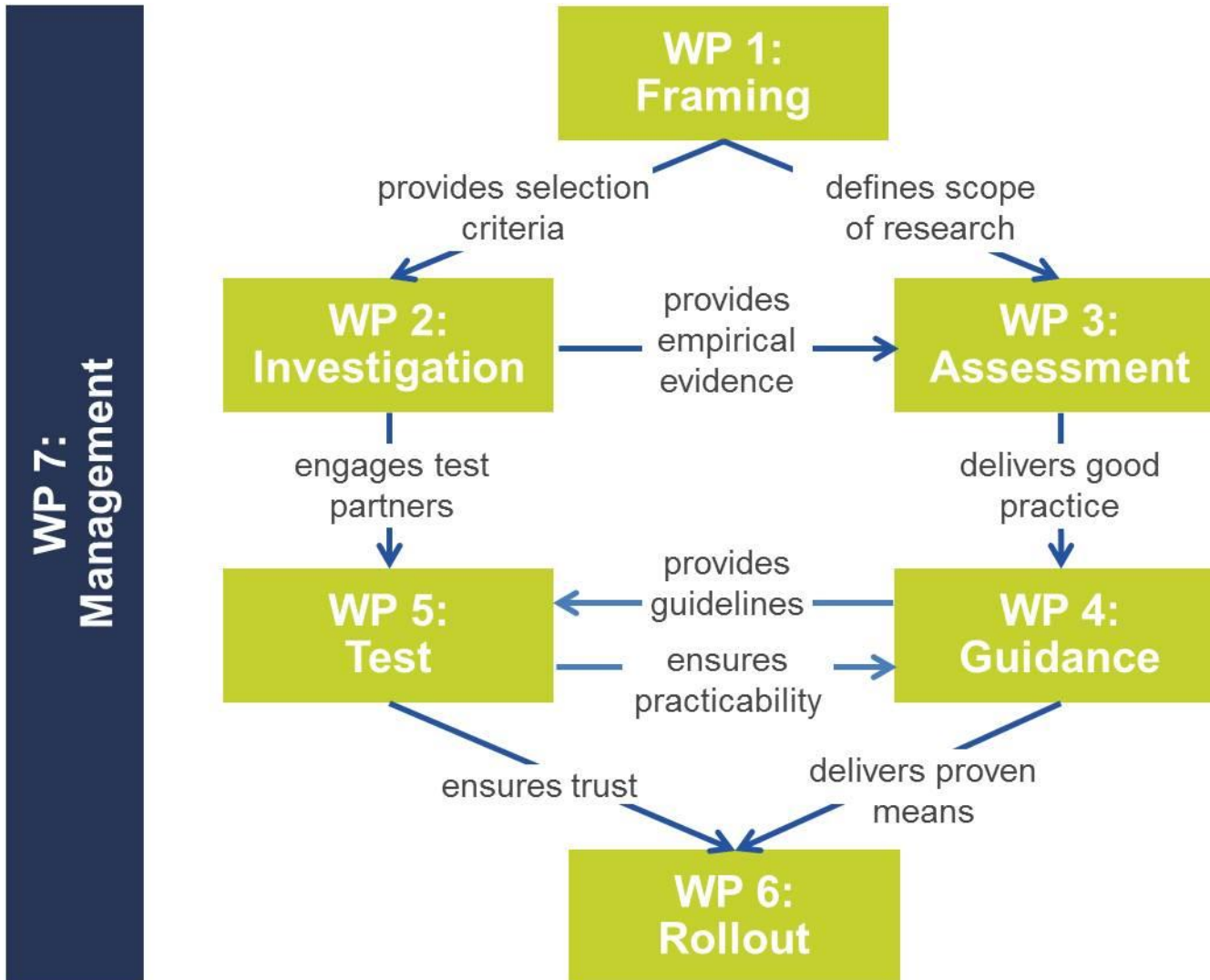
ENERGY@HOME WORKSHOP, 26 NOV 2013



- **S3C** – “Smart consumer, smart customer, smart citizen”
- **FP7 – Energy.2012.7.1.3** “Empowering smart customers to participate in active demand and energy system efficiency”
- **Duration**: 1 November 2012 – 31 October 2015 (3 years)

<http://www.s3c-project.eu/>

Work packages



9 challenges for 'transitioning' smart grid projects



1. Understanding the needs and expectations of the target group - **SEGMENTATION**
2. New products and services - **MARKETING**
3. Incentives & pricing schemes – **(BEHAVIOURAL) ECONOMICS**
4. End-user feedback (system communication) - **(COGNITIVE) PSYCHOLOGY**
5. Project communication – **COMMUNICATION THEORY**
6. Cooperation between stakeholders – **STAKEHOLDER ENGAGEMENT**
7. Bottom-up support – **COMMUNITY INITIATIVES**
8. New market structures – **(BUSINESS) ECONOMICS**
9. Scalability / replicability – **SOCIOLOGY OF TECHNOLOGY**

CASE STUDY EXAMPLE: THE LINEAR PROJECT

www.linear-smartgrid.be

The Linear project – A bird's eye view



3 different project phases:

Phase 1a: involving 'friendly users' (30 families), this group is mainly used for validation the Linear system and procedures prior to installation in phase 2 and 3; reference measurements started in Sept. 2010, DR test (business cases 'portfolio management' and 'wind balancing') between July 2013 – July 2014

Phase 1b: reference measurements (global and submetering on appliance level) performed at a representative sample of 70 EDF-Luminus customers between February 2011 and March 2012

Phase 2: participants recruited all over Flanders (100 families), no smart meter installed, reference measurements started in Feb. 2012, DR test (business cases 'portfolio management' and 'wind balancing') between April 2013 – April 2014

Phase 3: participants recruited in Hombeek-Leest (Eandis area) and Bret-Gelieren (Infrac area) (110 families), reference measurements via smart meter, Linear installation started in February 2013, DR test (business cases 'Wind Balancing', 'Transformer load/aging' and 'Line voltage profile') between July 2013 – July 2014

The 9 challenges: how does Linear contribute?



1. Understanding the needs and expectations of the target groups

Main concern was to get enough end users engaged in the project. Financial security proved to be key.

2. New products and services

Innovative solution: end users offer 'hours of flexibility'; operator has automated control over appliances within limits sets by end user.

3. Incentives & pricing schemes

'In-kind' rewards offered (price reduction for smart appliances, free tablet, ...)
ToU tariffs (25%) and 'bonus' for hours of flexibility (75%) offered, with different impacts on rethinking existing practices.

4. End-user feedback (system communication)

On tablet and PC, different formats possible (different units, different timeframes).

5. Project communication

Good practices include drawing up detailed contracts, setting up help desk, installation of a ticketing system, three-monthly newsletters, info-events for experience-sharing.

The 9 challenges: how does Linear contribute?



6. Cooperation between stakeholders

Limited involvement of non-energy players, predominance of regime players.

7. Bottom-up support (community initiatives)

Limited: Linear is a top-down project, developed in the interest of DSOs and retailers.

8. New market structures

Traditional consumer-provider relationship (now in terms of flexibility), learning about new market structures offering highest 'added value' for end-user flexibility and fair distribution of 'added value' over market participants.

9. Scalability / replicability

Depends on overcoming regulatory barriers and sufficient interest in business cases.
Limited information on useful marketing approach.

Conclusion – Success factors



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*

Conclusion – Remaining challenges

- 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