



# The role of the demand side in delivering effective Smart Grids

*Initial results from Task 23 of the  
IEA DSM Implementing Agreement*

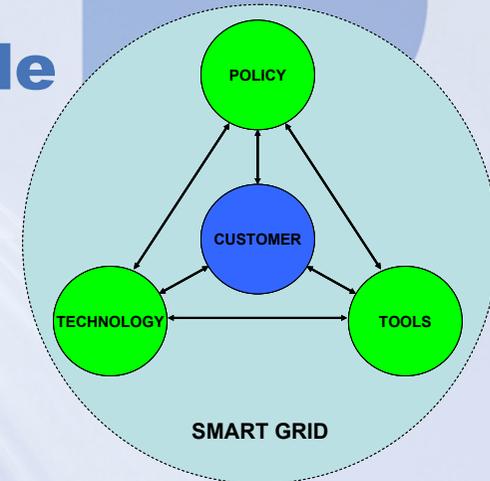


**Linda Hull, EA Technology**  
**Task 23 Operating Agent**

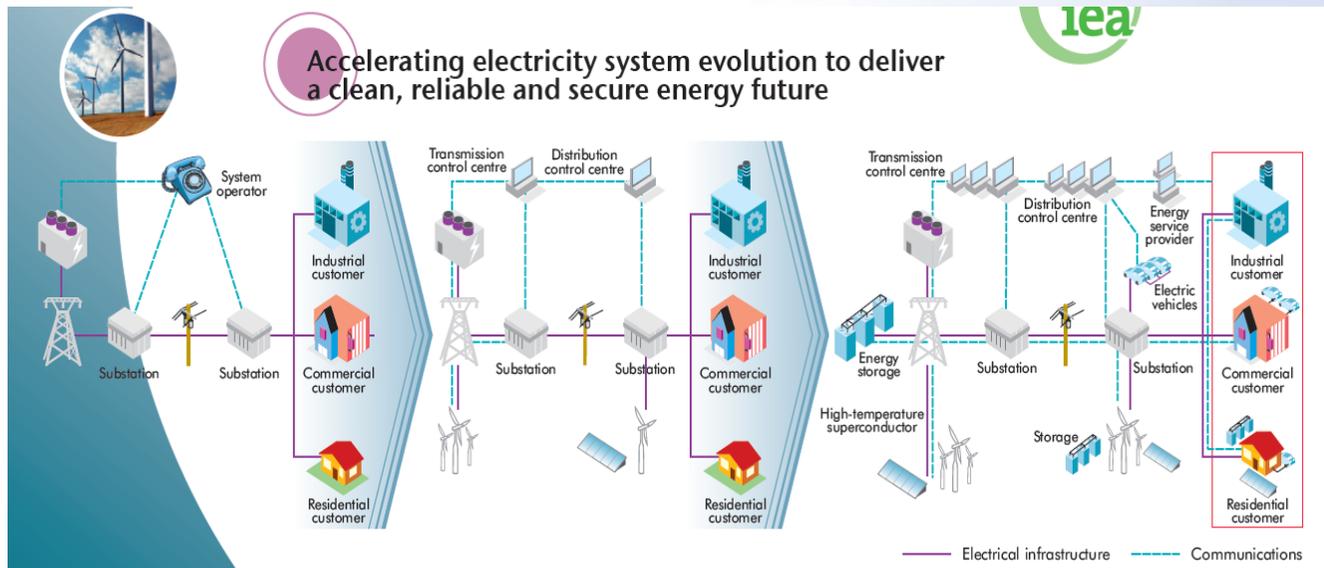
[www.eatechnology.com](http://www.eatechnology.com)

# Task 23: The role of the demand side in delivering effective Smart Grids

Exploring the interaction of policies, technologies and other tools - from the perspective of consumers



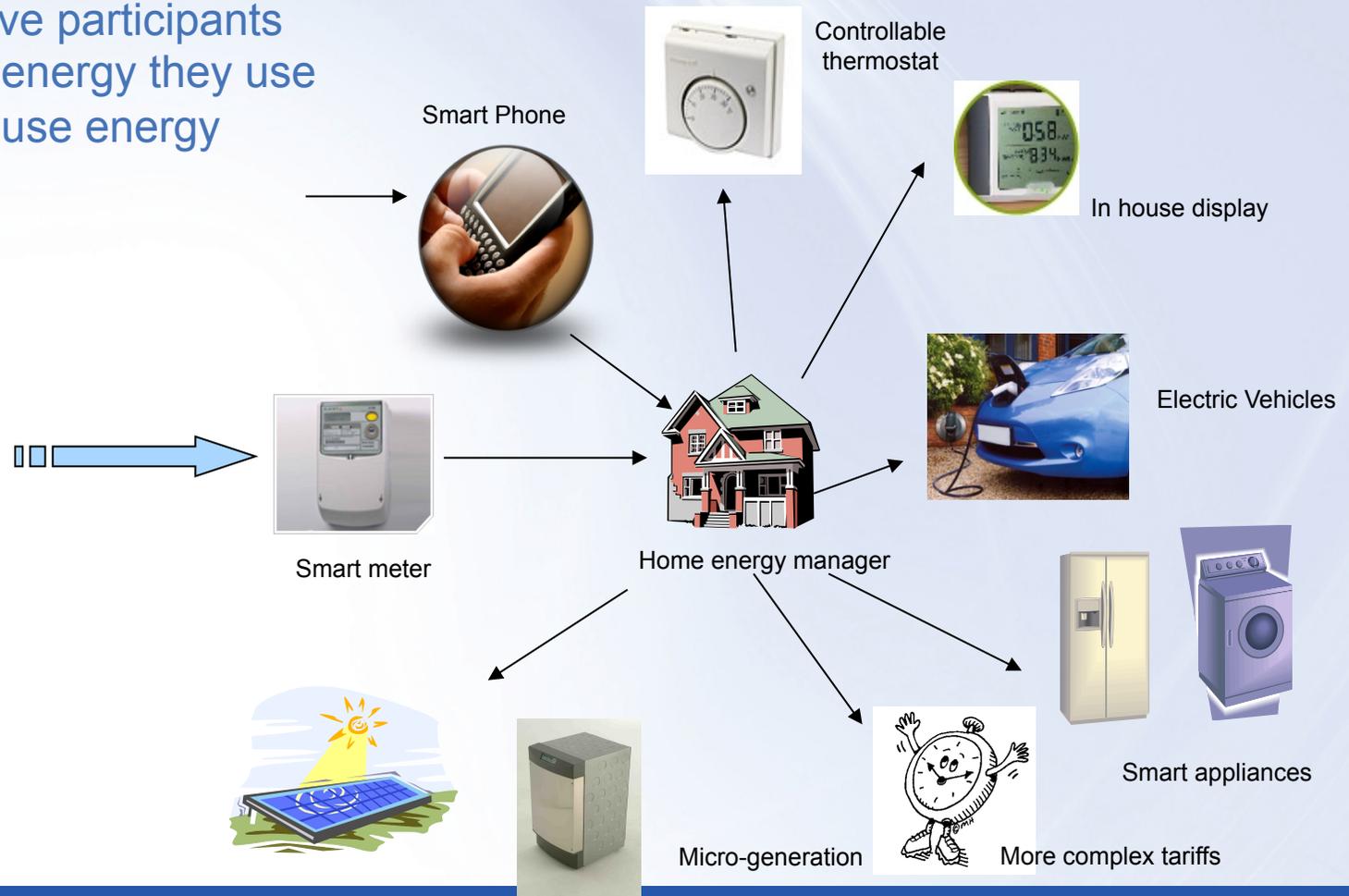
## The partners



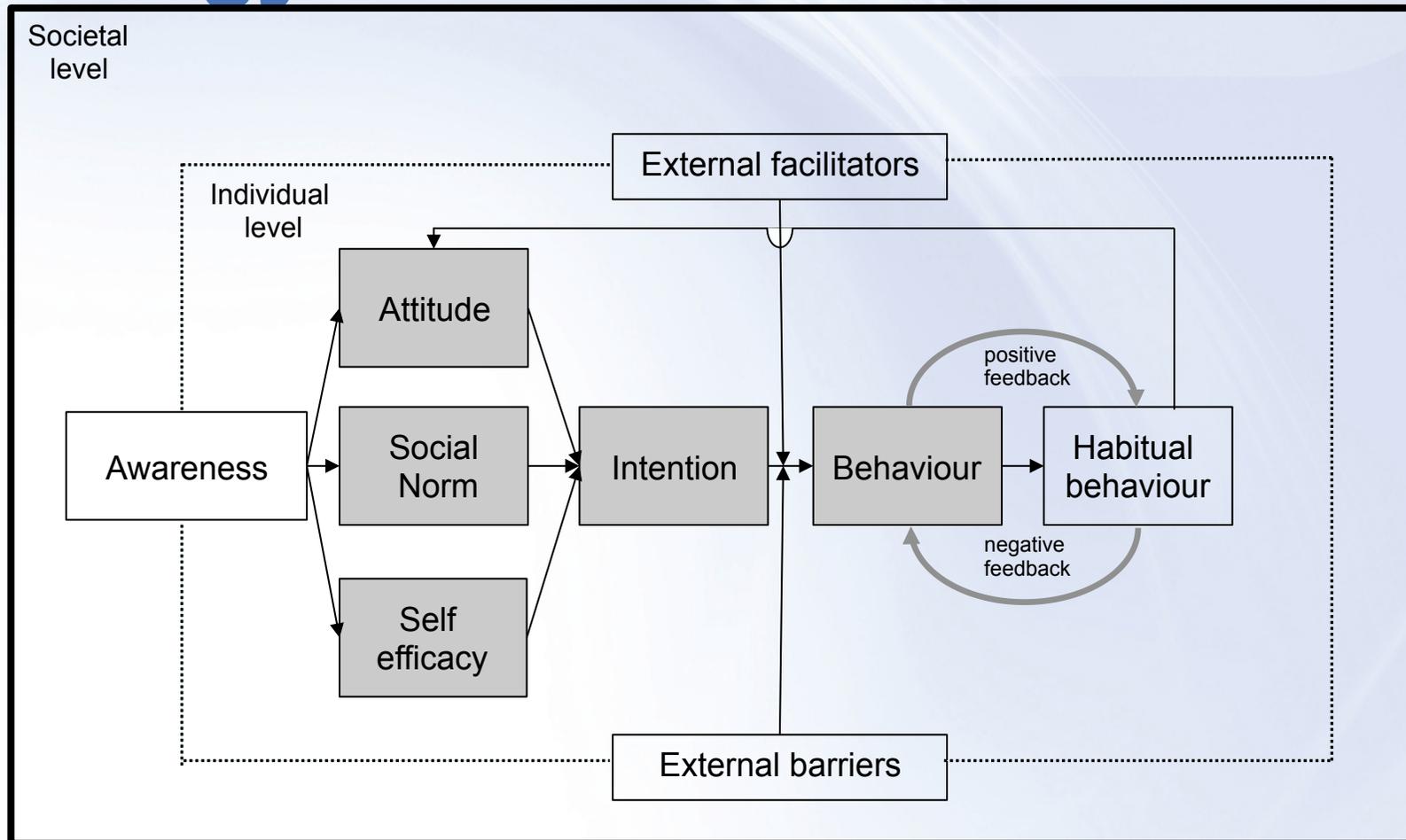
# What is expected of consumers?

Customers as active participants

- how much energy they use
- when they use energy



# Energy Behaviour



# Impact of markets

## Competition

- ☺ Autonomy
- ☹ Too much choice

## Market unbundling

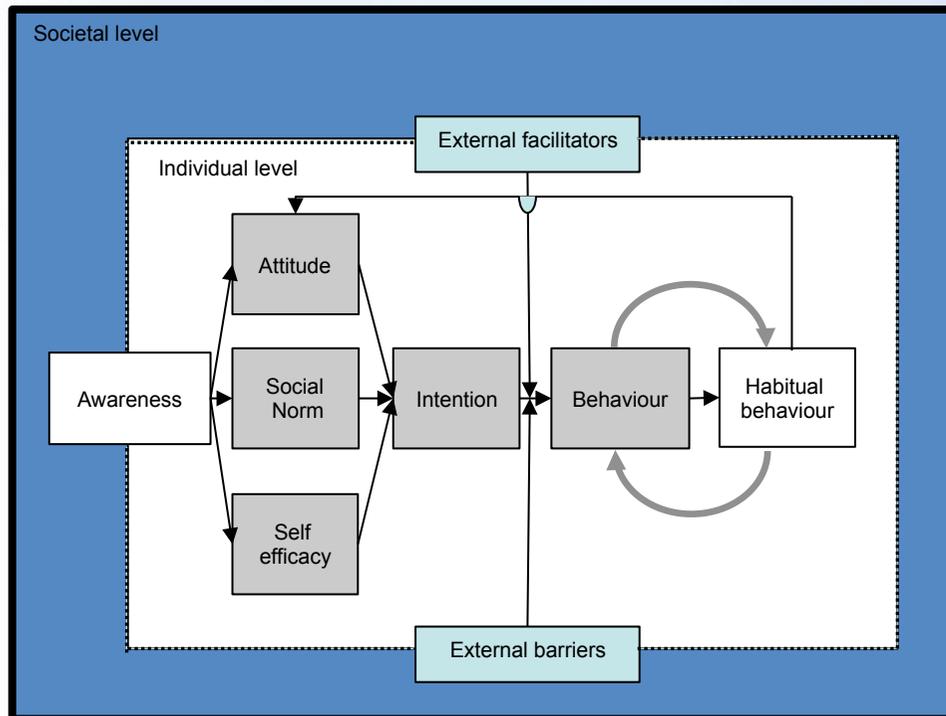
- ☺ Opportunity for new entrants to offer innovative solutions
- ☹ Broken value chain

## Mandated ToU tariffs

- ☺ Incentive to avoid demand during peak
- ☺ Loss of autonomy
- ☹ Impact on low income / vulnerable customers

## Regulation of monopoly activities

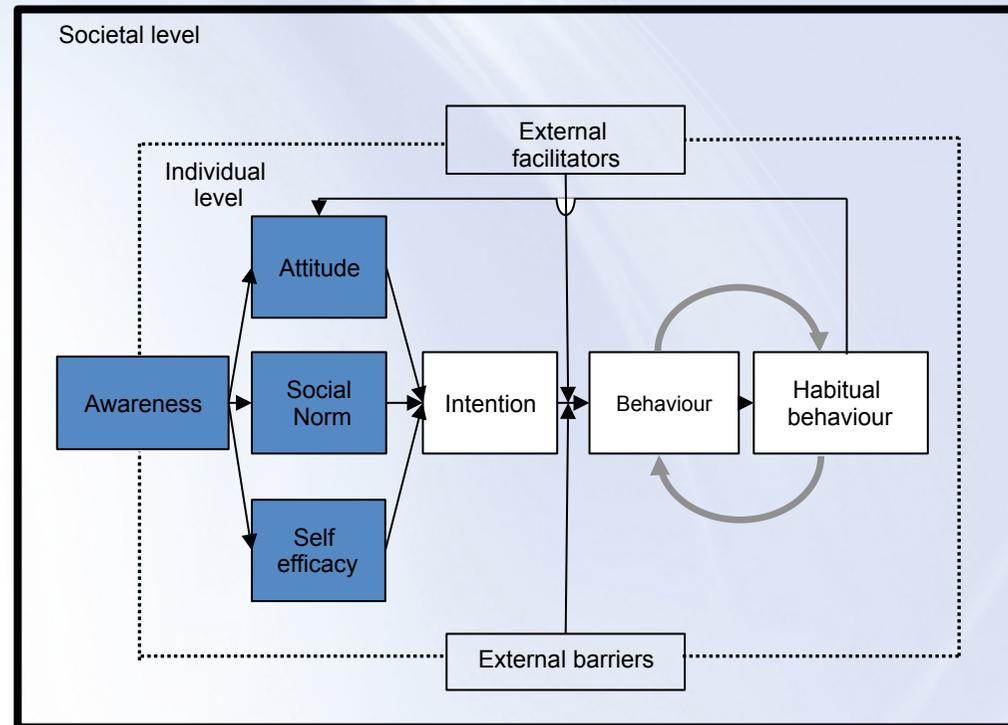
- ☺ Incentives to seek innovative solutions



Approach  
- market mapping

# The individual ..

- **Case studies**
  - 38 pilots / trials / schemes
- **Existing consumer surveys**
  - 22 surveys
- **UK market research**
  - 1,000 households

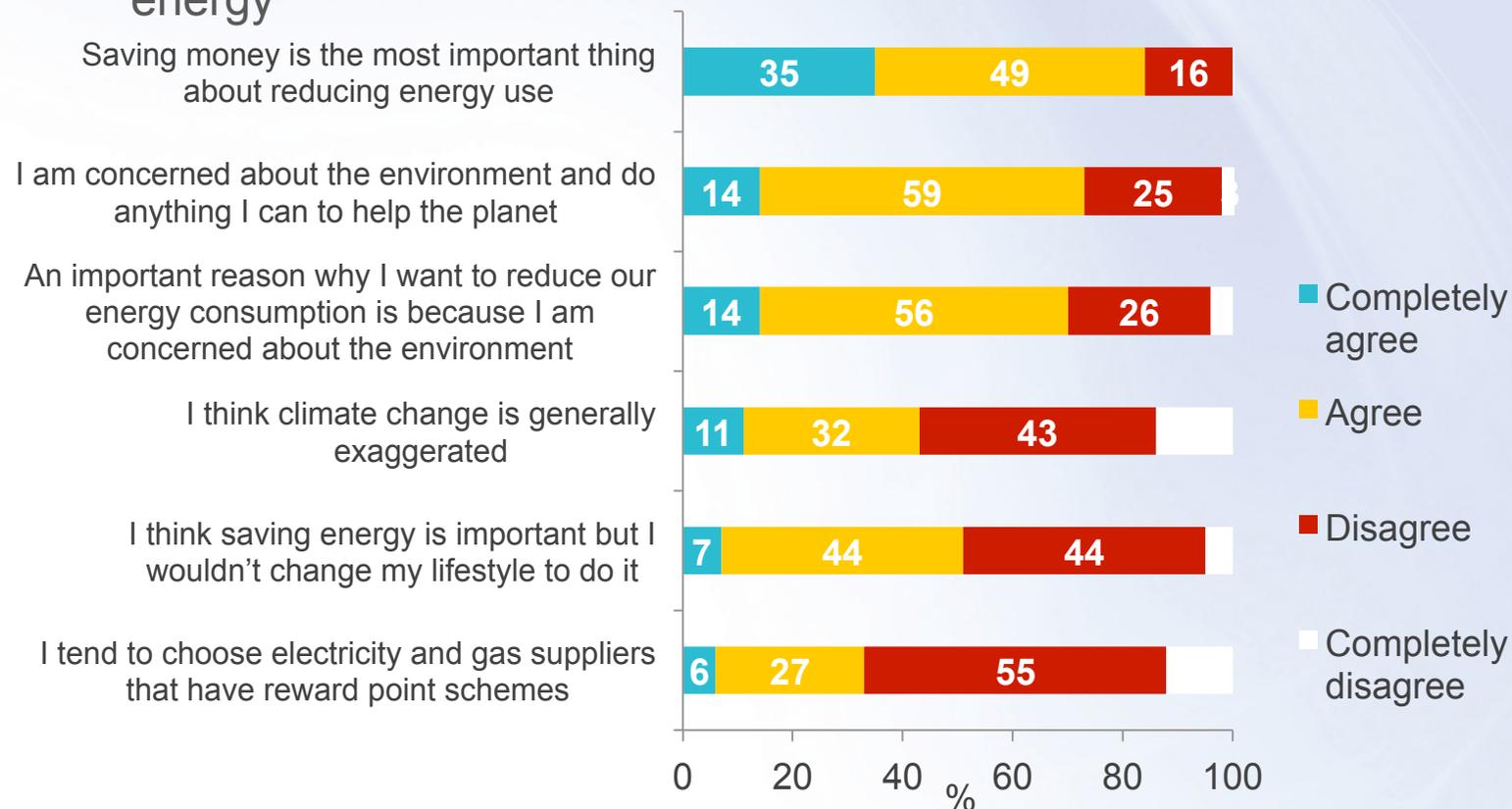


# Attitudes towards energy efficiency

## UK market research for Task 23

Q: How far would you agree or disagree with each of these statements...?

- Saving money is the key aspect of energy efficiency...
- Around half (49%) would accept some change in their lifestyle in order to save energy

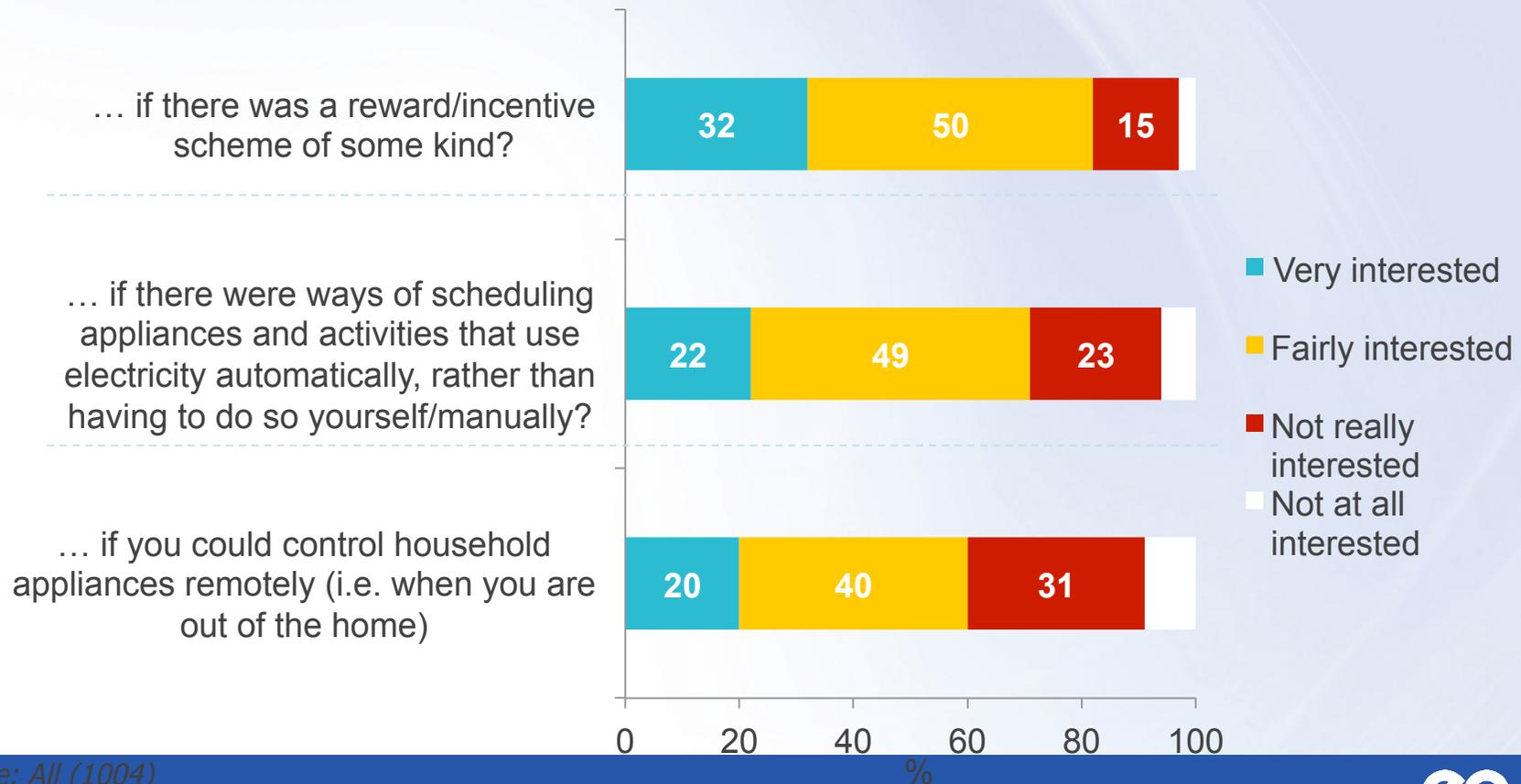


Base: All (1004)

# Overall Interest in the DSR Concept

## UK market research for Task 23

- The general interest in DSR is relatively **high**, esp. if there is an incentive/reward scheme (although at this point no level of reward was specified)



Base: All (1004)

**ÉcoWatt Breizh**  
An emzalc'h mat evit an energiezh

Rte  
Réseau de transport d'Electricité

► Mon compte

**POURQUOI ECOWATT ?**

**ILS SONT ECOW'ACTEURS**

**JE M'INSCRIS AUX ALERTES**

**J'AGIS**

**MERCI à tous !**

Merci à tous nos EcoW'acteurs ! 10-04-2013

Vous êtes désormais plus 48 300 EcoW'acteurs !  
Merci pour l'intérêt que vous portez à la démarche malgré un hiver sans alerte !  
Gardez l'EcoW'attitude jusqu'à l'hiver prochain !

**AUJOURD'HUI**  
30 Septembre 2013  
**Tendance verte**

**TENDANCE DE DEMAIN**

Retrouvez nous sur les RÉSEAUX SOCIAUX

@EcoWattBretagne

#EcoWatt et l'Académie de #Rennes s'associent pour sensibiliser les plus jeunes à la démarche #EcoWatt.  
[@acrennes](http://t.co/5GOHmp7Gjv)  
Il y a 26 jours Reply - Retweet - Favorite

En partenariat avec :

ERDF

Ecowatt launched in 2009

- 18,500 Internet users have signed up to EcoWatt alerts
- consumption has fallen between 1% and 1.5% at peak periods

# Thinking Energy

- **Trial in Milton Keynes**
  - Partners E.ON, Milton Keynes Council, National Energy Foundation
  - 75 homes
- **Householders use the system to**
  - Educate themselves about their energy use
  - Gain greater heating comfort
  - Gain extra control over appliances

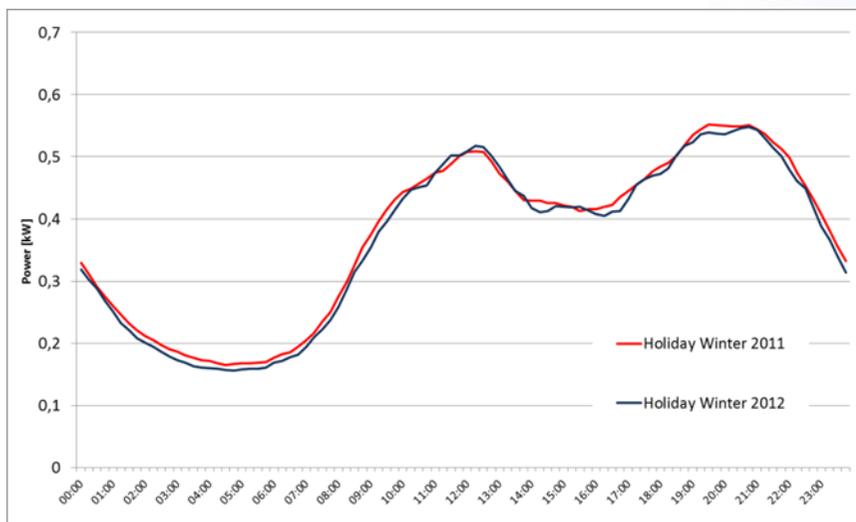


Source: GreenWave



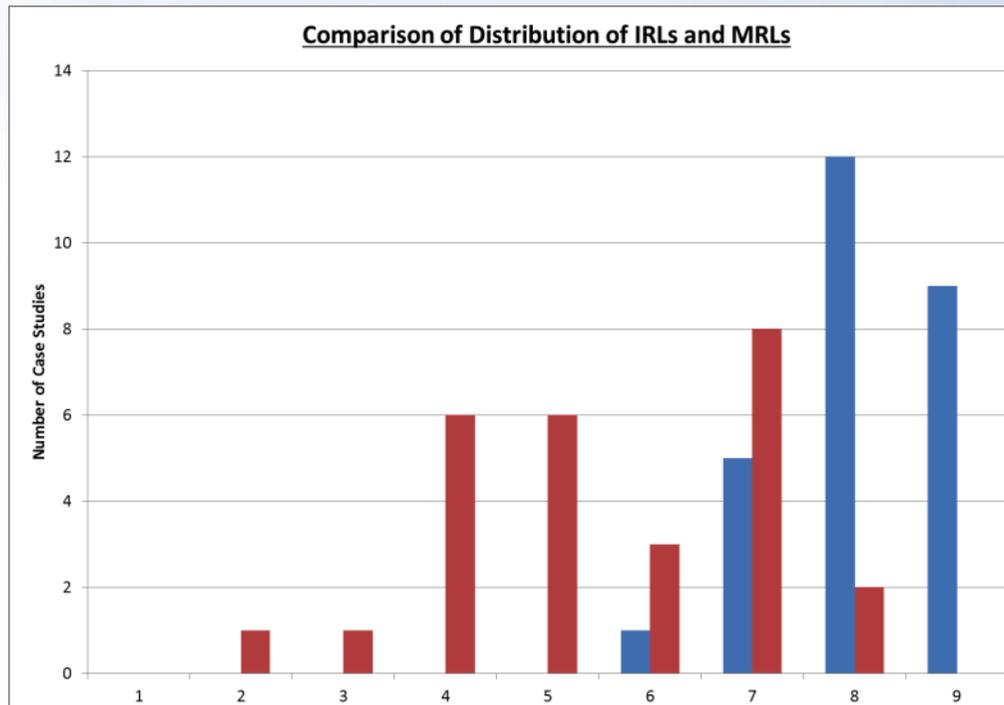
# Time of Use Tariffs In Italy

- **Since January 2012**
  - **Customers subject to a ToU tariff**
    - Unless they switch to a supplier acting in competitive market
  - **Peak prices between 08:00 – 19:00 (working days)**



- **Results**
  - **Minimal impact on load curve**
  - **To get a benefit < €1/year**
    - Consumer would need to shift more than 20% of their energy

# Results – market status



- Market readiness level - MRL
- Initiative readiness level - IRL

MRL is generally lower than IRL

- confirms that Smart Grid initiatives still at early market stage

# What Next?

- Helping to ensure that **Smart Grids** move from early market to mainstream users
  - crossing the chasm



Diffusion of innovation

- By ensuring that **Smart Grid** propositions designed to meet the needs of consumers

# What do Smart Grids offer?

## Support move to low carbon economy

- Reduced carbon emissions
- Facilitates connection of renewables / new electric loads
- Optimising use of existing network assets
- Optimise use of renewable generation



# What do Smart Grids offer consumers?

Want / need	Examples	
Tangible benefits	Cost savings or other incentives Time savings Improved comfort	  
Autonomy	Information on usage / learning Choice (products / tariffs / service offering) Control over home environment	
"Feel good" factor	Reduced emissions / impact on climate	



[linda.hull@eatechnology.com](mailto:linda.hull@eatechnology.com)



[www.ieadsm.org](http://www.ieadsm.org)



[www.eatechnology.com](http://www.eatechnology.com)

Delivering Innovation in **Power Engineering**