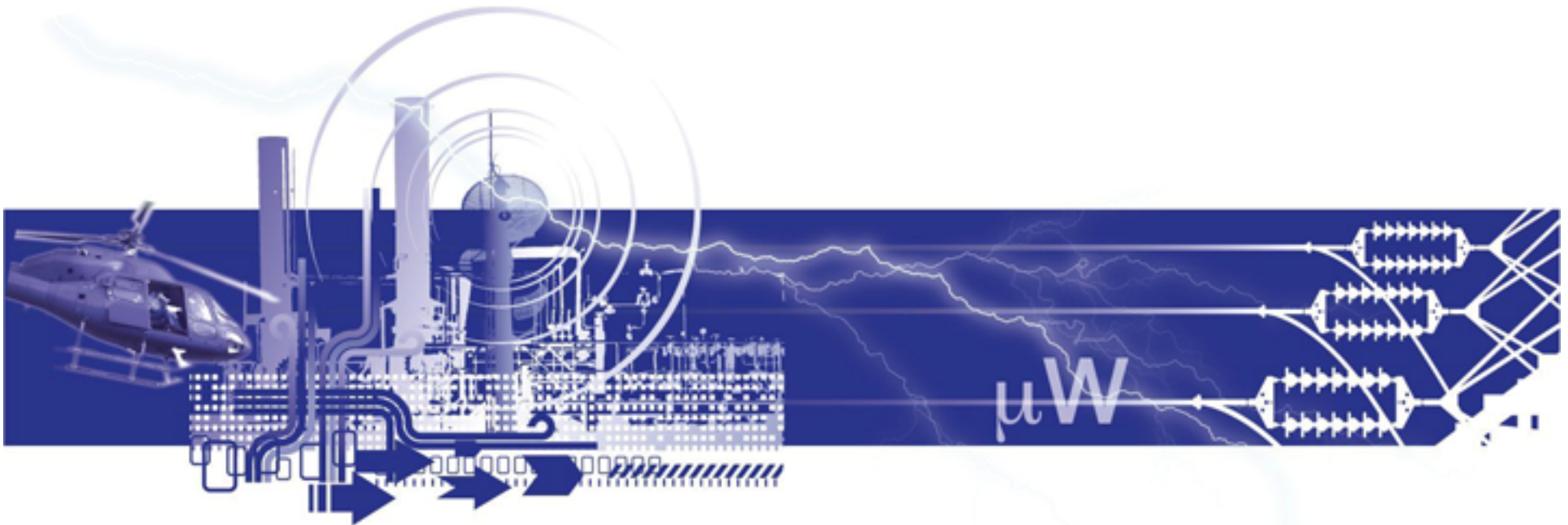


# Task XIX

## ‘Micro Demand Response & Energy Saving’

Linda Hull

September 2010



- **Task XIX – some background**
- **Scope of project**
- **What have we done?**
- **What have we learnt?**



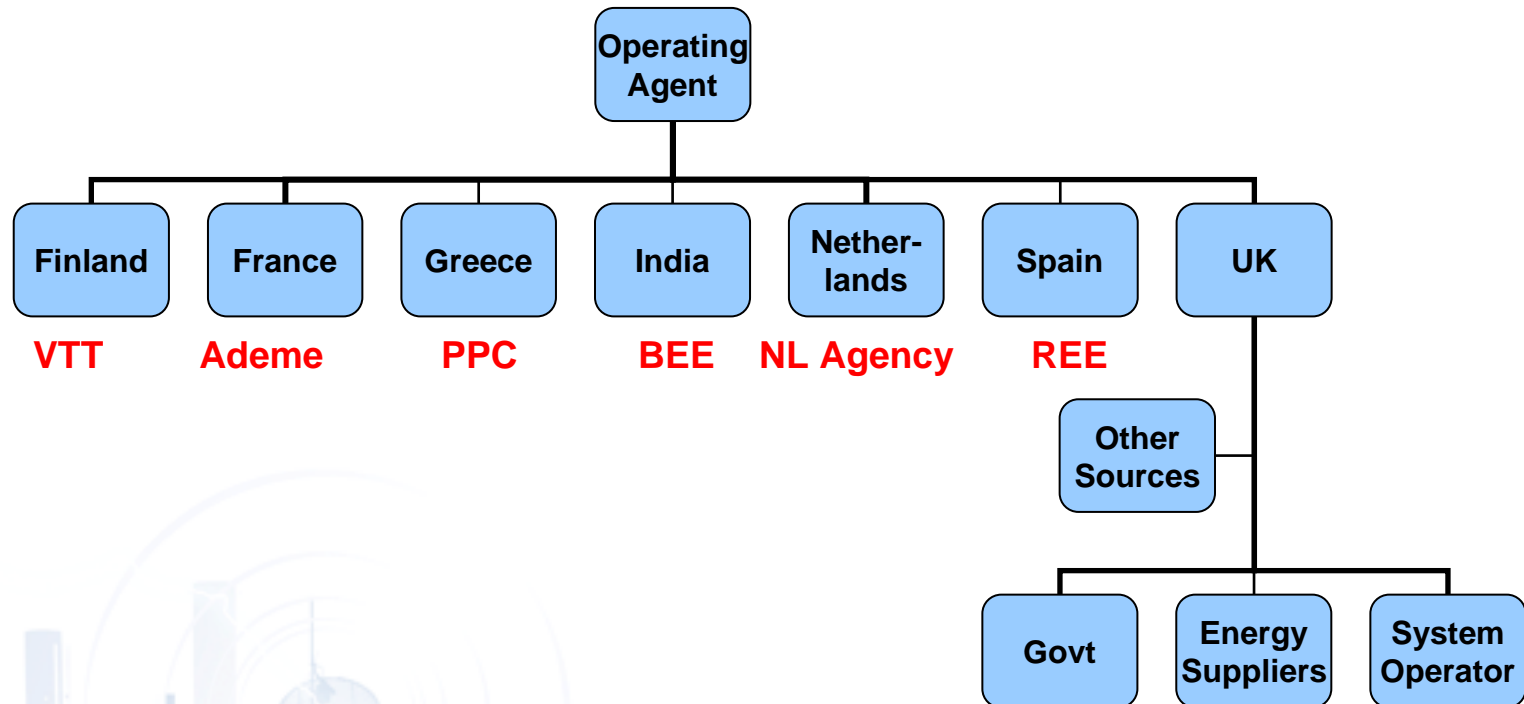
## Background

- Task XIX was established as part of the International Energy Agency Implementing Agreement on Demand Side Management
- IEA DSM Implementing Agreement was established in 1993
- Its aim is '*Promoting Energy Efficiency and Demand-Side Management for global sustainable development and for business opportunities*'



More information available on its activities is available at [www.ieadsm.org](http://www.ieadsm.org)

# Project Structure



DECC      Centrica      National Grid  
EDF Energy  
E.ON  
SSE

## Scope

- **Demand response and energy saving products**
  - via provision of information & remote / automatic switching
    - End-use monitoring and feedback
    - Time of use pricing
    - Remote/automatic switching
- **Customer types**
  - Residential
  - Small and medium enterprises
    - Commercial and / or industrial sites
    - Sites with a maximum demand < 100kW
      - generally without interval metering
- **Fuel type**
  - Electricity only



# Demand Side Management

## Load level

(amount of energy consumed)

Appliance  
measures

Insulation

**Behaviour**  
(information to influence  
energy use)

## Load shape

(pattern of energy consumption)

Sustained  
(long term)

Flexible  
(short term)

**Demand response**

**Remote / Automatic  
Switching**

**TOU  
Pricing**



## Two International Reports Produced

- **Micro Demand Response and Energy Saving Products:  
Definition of the Requirements and the Options for Effective  
Delivery**
- **Evaluating the Business Case for Micro Demand Response and  
Energy Saving**



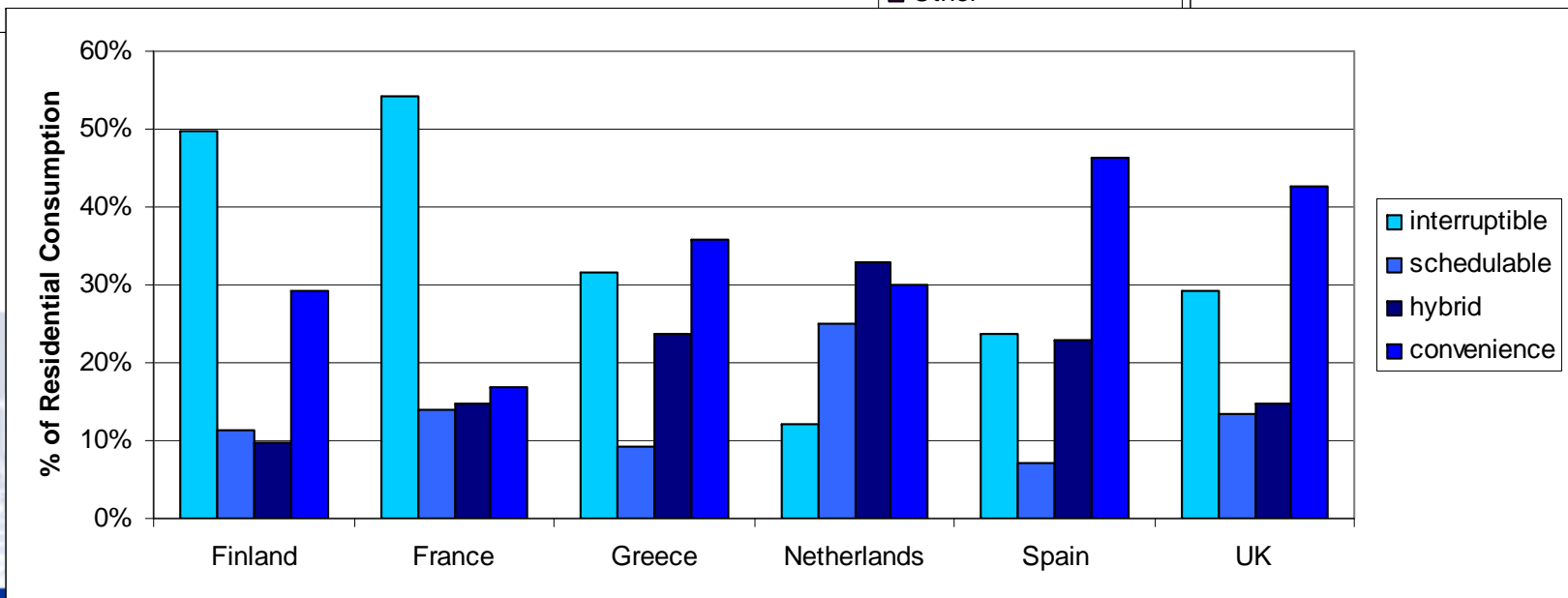
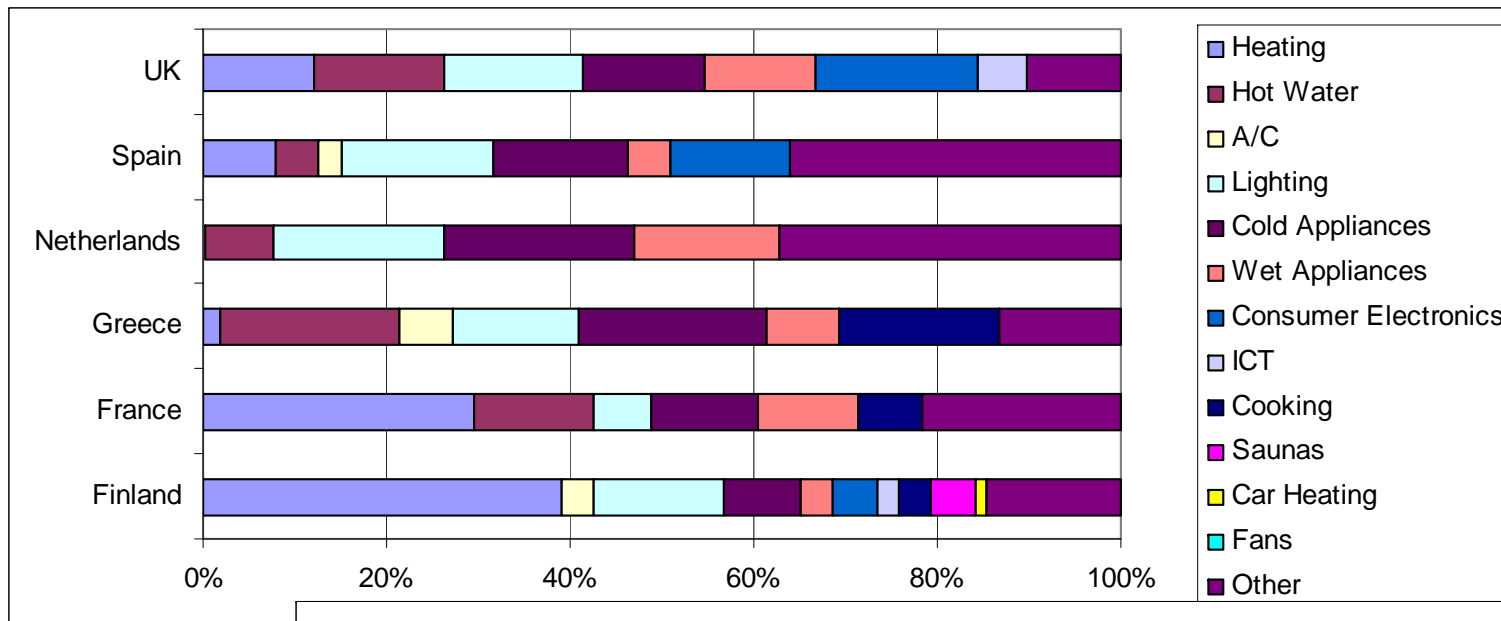
## **Micro Demand Response and Energy Saving Products: Requirements & Options for Effective Delivery**

- **Overview of electricity system and trading arrangements**
- **Demand Response Requirements**
- **Review of Case Studies and Pilots**
- **End Use Demand Changes**
- **Delivery Mechanisms**
- **Technical Architecture Components**





# Residential Loads in Participating Countries

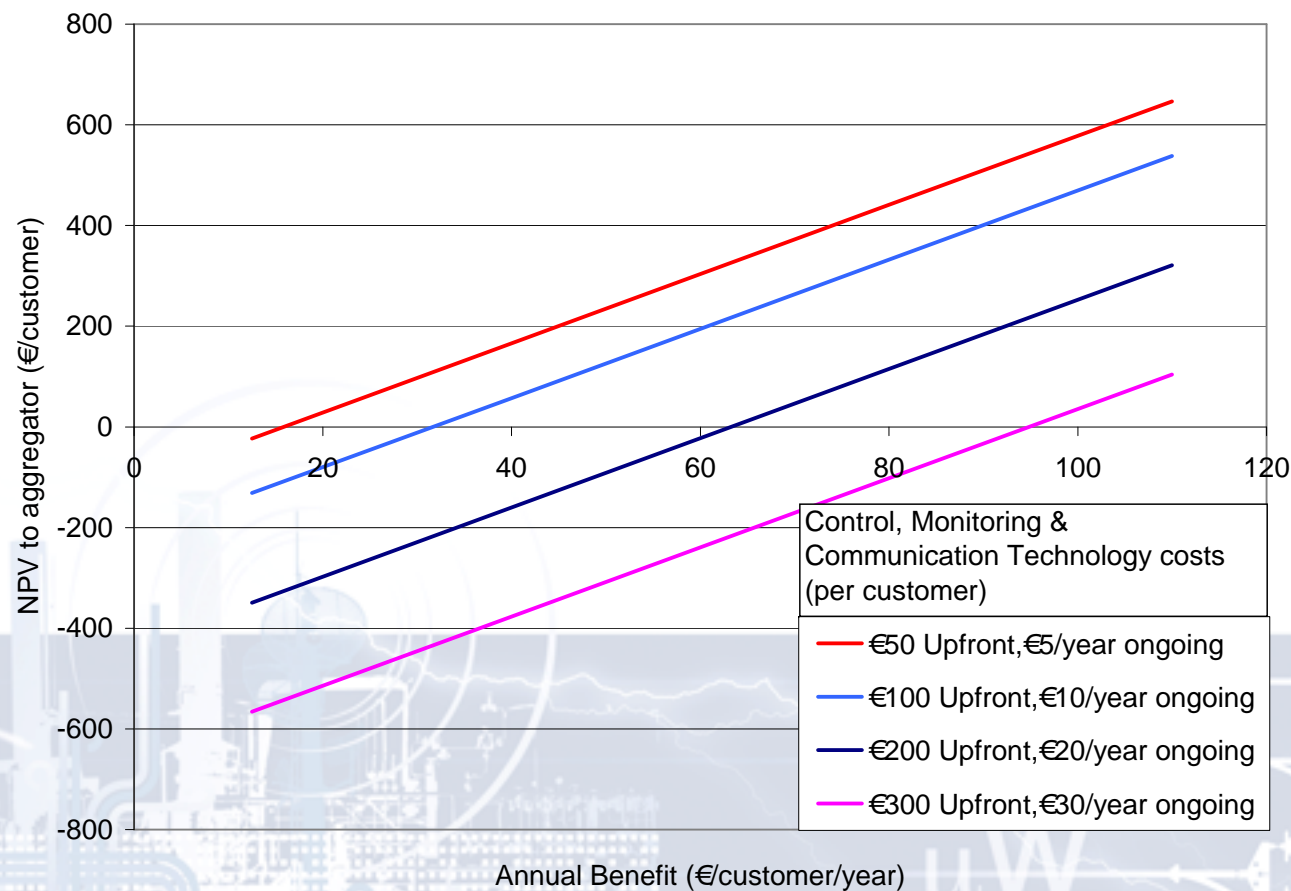


## Evaluating the Business Case for Micro Demand Response and Energy Saving

- **Five Country Specific Case Studies**
  - Dynamic control of electric heater loads, Finland
  - Dynamic response of residential heating loads, France
  - Energy efficient air-conditioning equipment, Greece
  - Mass installation of energy efficient lighting, India
  - Direct load control of commercial air conditioning, UK



# Direct load control of commercial a/c, UK



# What have we learnt?

- **GB electricity market is complex, with a diverse range of stakeholders that is likely to increase**
- **There are information gaps**
  - **Lack of information on the consumption habits of commercial, particularly SME, consumers**
  - **Lack of information on when different end uses occur, for both domestic and SME consumers**
- **Technologies are rapidly evolving in this area but few are mass market**



## What have we learnt? (2)

- **Tariff-based interventions are likely to be the easiest to implement in current market arrangements, particularly for domestic consumers**
- **New and evolving loads, especially Air Conditioning, Electric Vehicles and Heat Pumps, present interesting opportunities for load shifting**
- **The degree to which consumers will be willing to engage with programmes is currently unknown**

