NOBEL

NEIGHBOURHOOD ORIENTED BROKERAGE ELECTRICITY AND MONITORING SYSTEM

A quick look to NOBEL

Neighbourhood Oriented Brokerage Electricity and monitoring system.

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SEVENTH FRAMEWORK PROGRAMME

EUROPEAN COMMISION

Introduction

Neightborhood Energy Brokerage

What is NOBEL?

Prosumers: sources of energy and information

Strategic Goal

Develop, integrate and validate ICT enabling a reduction of the currently spent energy, by providing a more efficient distributed monitoring and control system for local network operators and prosumers.

Consortium

SAP, SICS, C.E.A, Universität Duisburg Essen, CERTH, ETRA I+D

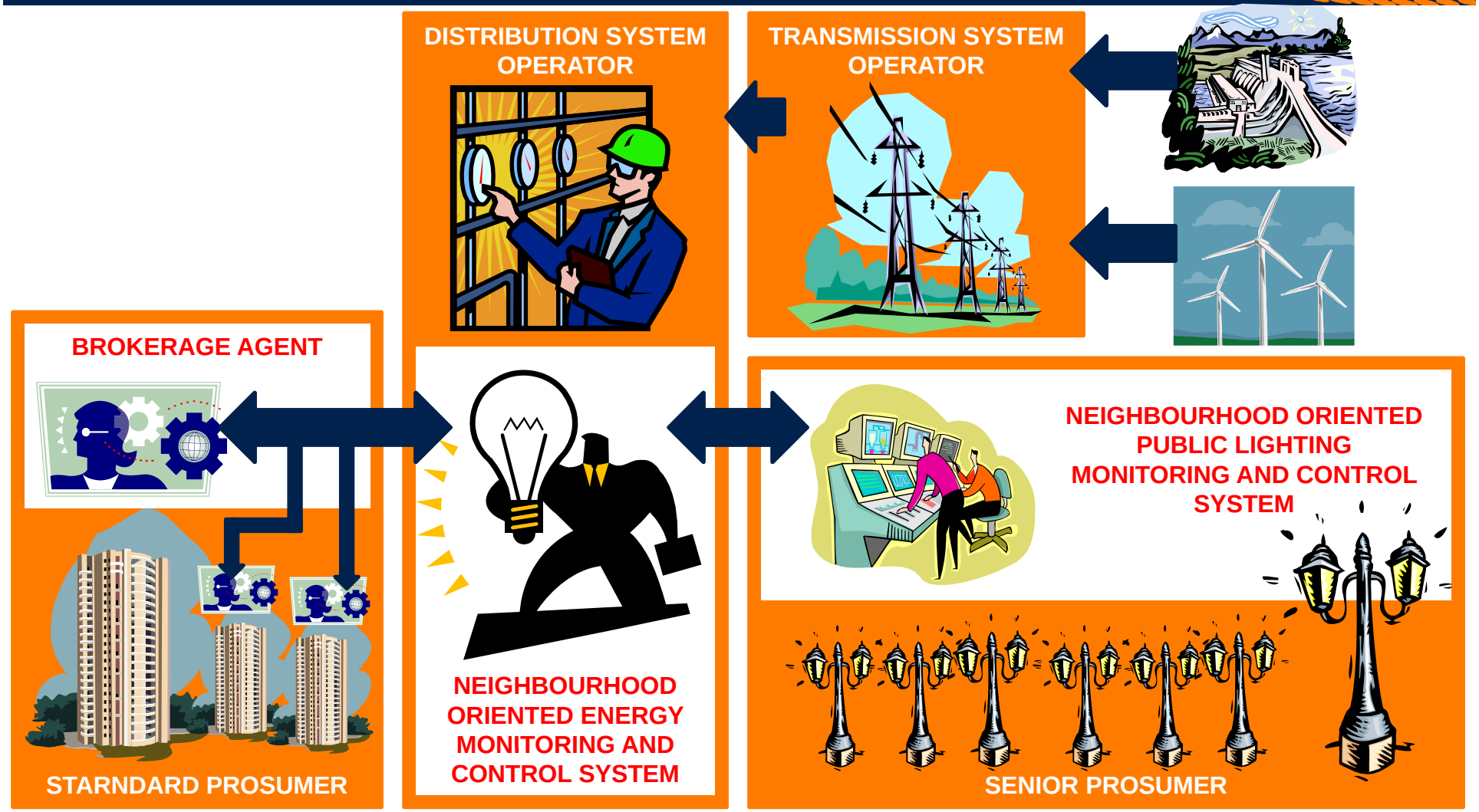
3M€ Budget

Countries

Spain, Germany, Sweden, Greece

Partners

- ETRA I+D (coordinator)
- SAP AG (Germany)
- Swedish Institute of Computer Science (Sweden)
- Cooperativa Eléctrica Alginet (Spain)
- Centre for Research and Technology Hellas (Greece)
- University of Duisburg-Essen (Germany)


DISTRIBUTION SYSTEM OPERATOR
TRANSMISSION SYSTEM OPERATOR
BROKERAGE AGENT
STARNDARD PROSUMER
NEIGHBOURHOOD ORIENTED ENERGY MONITORING AND CONTROL SYSTEM
NEIGHBOURHOOD ORIENTED PUBLIC LIGHTING MONITORING AND CONTROL SYSTEM
SENIOR PROSUMER

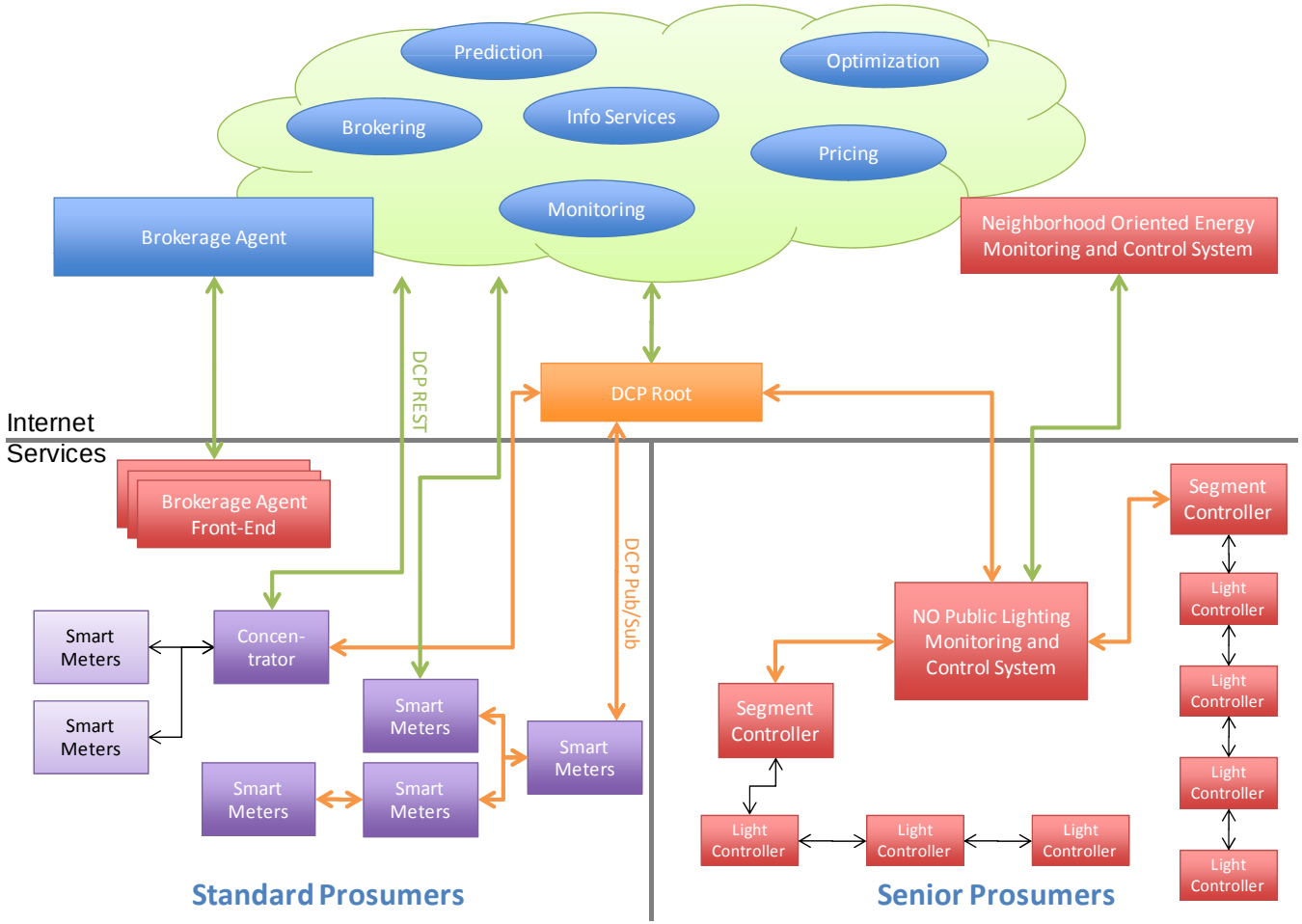
Goal

- Our **MISSION** is to develop, integrate and validate ICT enabling a reduction of the currently spent energy, by providing a more efficient distributed monitoring and control system for local network operators and prosumers.

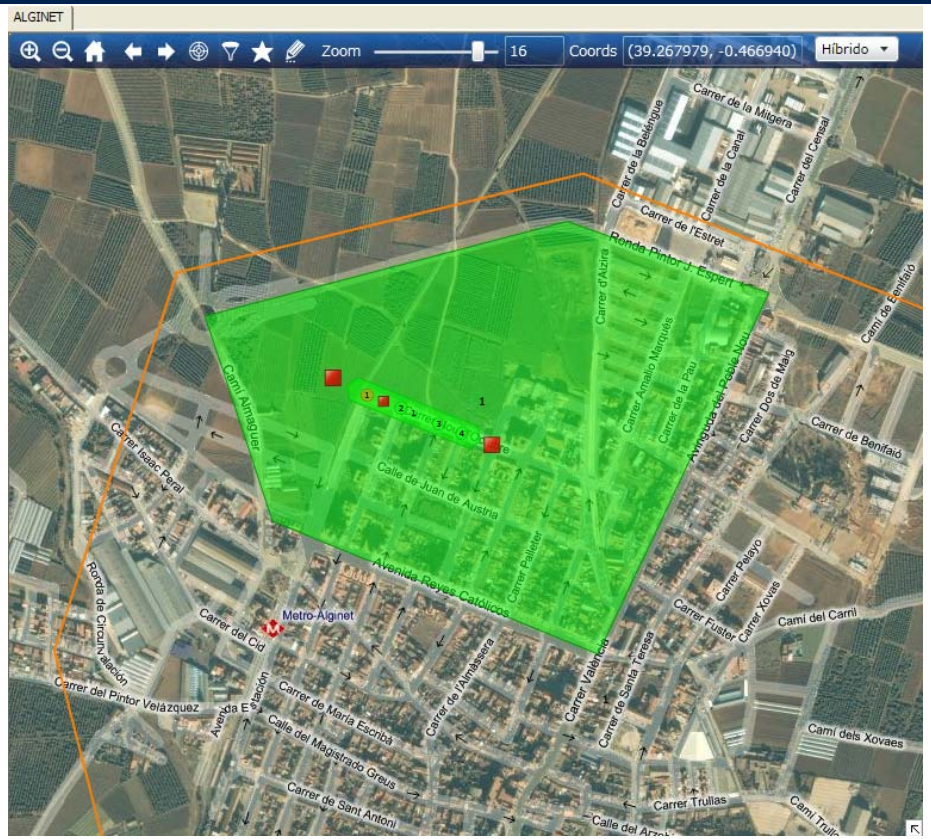
NOBEL final results in short:

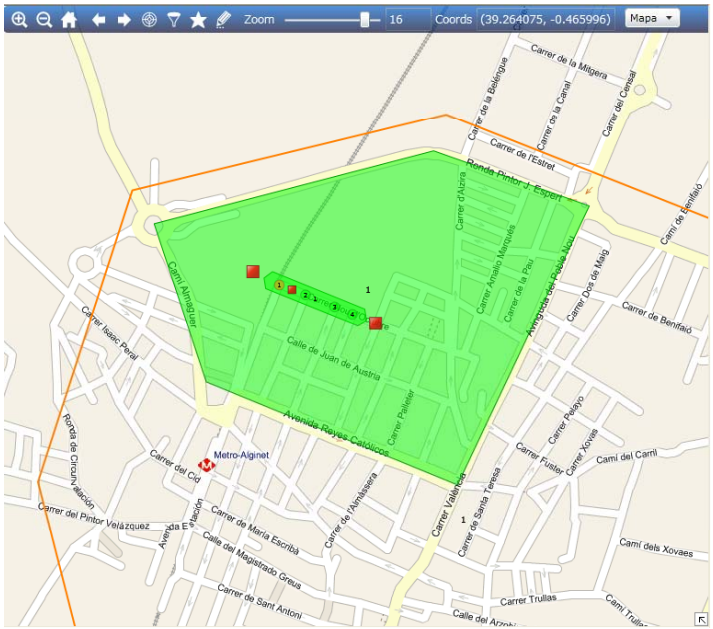
- IPv6 software layer for future smart meters and embedded devices in a smart grid
- Middleware for data capturing and processing energy data on a smart grid.
- Service Oriented framework to support the monitoring of the grid, and the brokerage of electricity in neighborhoods.
- A Neighborhood Oriented Energy Monitoring and Control platform.
- A Neighborhood Oriented Public Lighting Monitoring and Control platform.
- A citizen platform to obtain real-time information and participate in the brokerage of electricity.

Neighborhood Oriented Energy Monitoring and Control System



Main components in the system


ALGINET
Zoom
16
Coords (39.267979, -0.466940)
Híbrido
Carrer de la Milgera
Carrer de la Belénque
Carrer de la Canal
Carrer del Censal
Carrer de l'Estret
Ronda Pintor J. Espert
Camí de Benifaió
Carrer d'Alzira
Camí Almaguer
Carrer Isaac Peral
Carrer Amalio Marqués
Carrer de la Pau
Avinguda del Poble Nou
Carrer Dos de Maig
Carrer de Benifaió
Calle de Juan de Austria
Avenida Reyes Católicos
Carrer Palleter
Carrer Pelayo
Carrer Fuster
Carrer Xovas
Camí del Carmi
Metro-Alginet
Carrer del Cid
Ronda de Circunvalación
Carrer del Pintor Velázquez
Avenida Estación
Carrer de María Escribá
Calle del Magistrado Greus
Carrer de Sant Antoni
Carrer de l'Almassera
Carrer Valencia
Carrer de Santa Teresa
Camí dels Xovaes
Carrer Trullas


Zoom
16
Coords (39.264075, -0.465996)
Mapa
Carrer de la Milgera
Carrer de la Belénque
Carrer de l'Estret
Ronda Pintor J. Espert
Camí de Benifaió
Carrer d'Alzira
Camí Almaguer
Carrer Isaac Peral
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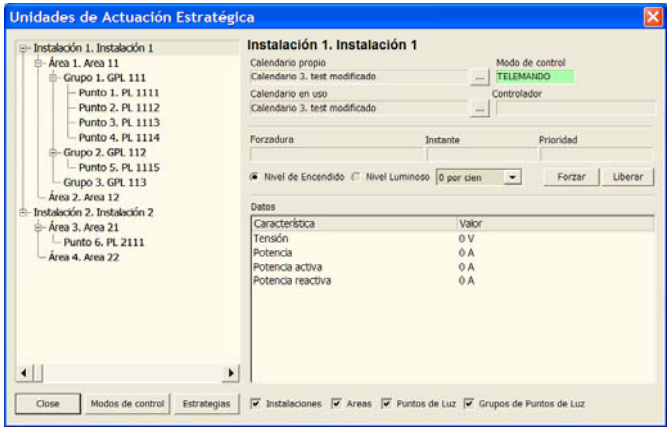
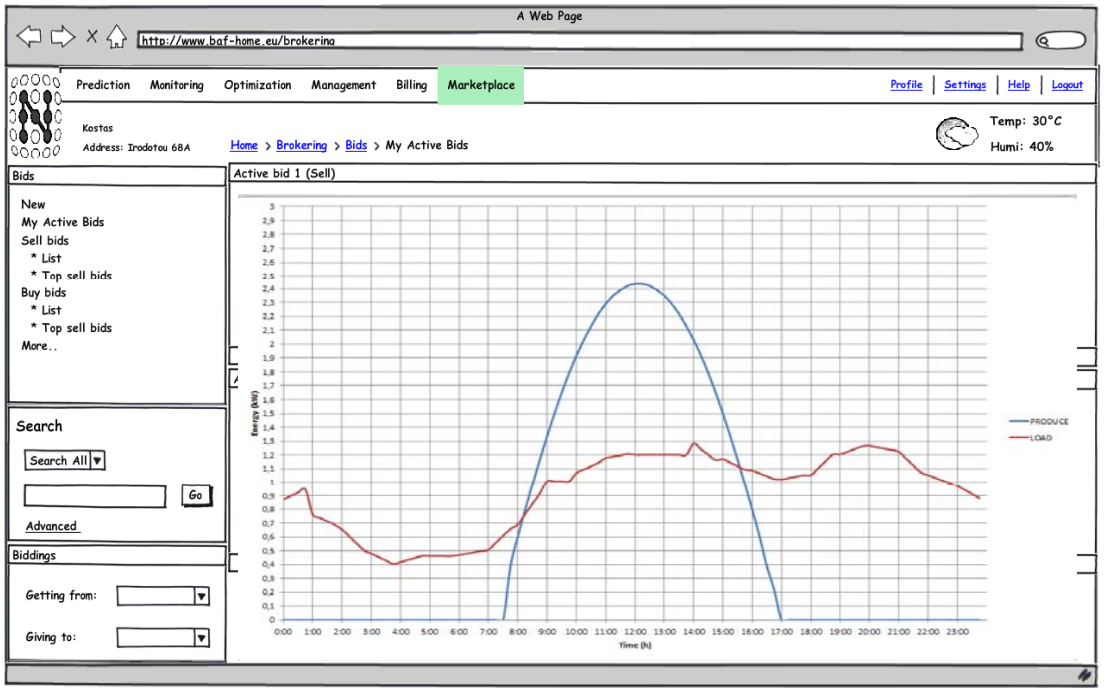

Unidades de Actuación Estratégica
Instalación 1. Instalación 1
Área 1. Area 11
Grupo 1. GPL 111
Punto 1. PL 1111
Punto 2. PL 1112
Punto 3. PL 1113
Punto 4. PL 1114
Grupo 2. GPL 112
Punto 5. PL 1115
Grupo 3. GPL 113
Área 2. Area 12
Instalación 2. Instalación 2
Área 3. Area 21
Punto 6. PL 2111
Área 4. Area 22
Instalación 1. Instalación 1
Calendario propio
Calendario 3. test modificado
Calendario en uso
Calendario 3. test modificado
Modo de control
TELEMANDO
Controlador
Forzadura
Instante
Prioridad
Nivel de Encendido
Nivel Luminoso
0 por cien
Forzar
Liberar
Datos
Característica
Valor
Tensión
0 V
Potencia
0 A
Potencia activa
0 A
Potencia reactiva
0 A
Close
Modos de control
Estrategias
Instalaciones
Areas
Puntos de Luz
Grupos de Puntos de Luz

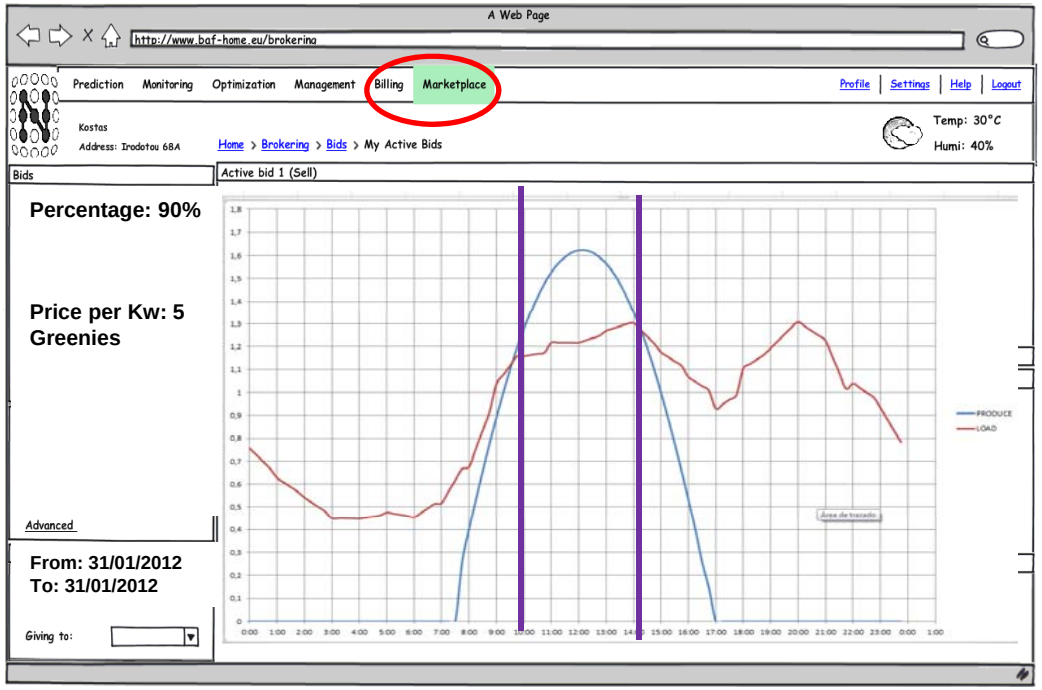
NOBEL ENERGY SERVICES

- User energy services developed for NOBEL
  - Energy Monitoring
  - Energy Prediction
  - Energy Optimization
  - Management
  - Billing
  - Energy Brokering
  - Energy Service Repository
  - Informational Services



NOBEL Energy Brokering service

- **Biddings and offers and matching algorithm**
  - **The user selects the time interval where he wants to sell/buy energy, the percentage, and the price.**
  - **The system algorithm will match the price offer, with the bid with closest price.**



Any Question?

- **Thanks**
- **www.ict-nobel.eu**
- **info@ict-nobel.eu**
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NOBEL

NEIGHBOURHOOD ORIENTED BROKERAGE ELECTRICITY AND MONITORING SYSTEM

The decentralized model for energy generation will bring with it many challenges to maintain grid robustness. The NOBEL Project takes a radical approach towards addressing these issues. We design and realize an IT infrastructure where consumers also become producers of electricity, as well as information, termed "prosumers" within the NOBEL project.

- ❑ **End User (Prosumer)**
- ❑ **Distribution and Transmission Network Operator**
- ❑ **Industrial, Commercial and Public infrastructure**
- ❑ **Retailer**

Thank you in advance!

https://nobel-iem.dyndns.org/survey/