



*Co-funded by the European Community Horizon 2020 Program*

Project Title:

# **ORganizational Behaviour improvement for Energy Efficient administrative public offices**



**OrbEEt**

**Grant Agreement No: 649753**

**Collaborative Project**

**OrbEEt Pilot Site in Austria: Final Results**

## 1.1 OrbEEt pilot site in Austria

Demonstration of OrbEEt framework performed from **01/04/2017 (M26) – 28/02/2018 (M36)**, considering the different periods for trials:

- **1<sup>st</sup> Trial: M23 - M28 (baseline: M21-M25 with OrbEEt trials starting in M26)**
- **2<sup>nd</sup> Trial: M29 - M34**

### Total energy savings (Annual)

Load Type	Actual (KWh)	Baseline (KWh)	Savings
Heating	<b>9472</b>	<b>11440</b>	17.20%
Lighting	<b>5198.11</b>	<b>6417</b>	19.00%
Other	<b>1430</b>	<b>1543</b>	7.32%
<b>Total</b>	<b>16099</b>	<b>19400</b>	<b>17.02%</b>

*Table 1 Total Energy Savings - BHOE*

**Peak Demand Reduction:** For peak demand analysis, we take into account the week-days hour-period: 09:00 -13:00; following the analysis of a typical load curve in Austria. The impact of OrbEEt framework during peak hours is depicted in the following table (analysis during peak hours):

Load Type	Actual (KWh)	Baseline (KWh)	Savings
Heating	3589.56	4576	21.56%
Lighting	2314	2887.63	19.87%
Other	717.6	769.6	6.76%
<b>Total</b>	<b>6621.1</b>	<b>8233.23</b>	<b>19.58%</b>

*Table 2 Peak Demand Savings - BHOE*

**CO2 Emissions Reduction:** For CO2 emission analysis, we take into account the typical generation mix of each country (source: ENTSOE). In Austria, by taking also into account the CO2 ratio for gas consumption (heating load), we estimate the total impact in CO2 emission:

Load Type	Actual (Kg)	Baseline (Kg)	Savings
<b>Total</b>	<b>3814.73</b>	<b>4571.33</b>	<b>16.55 %</b>

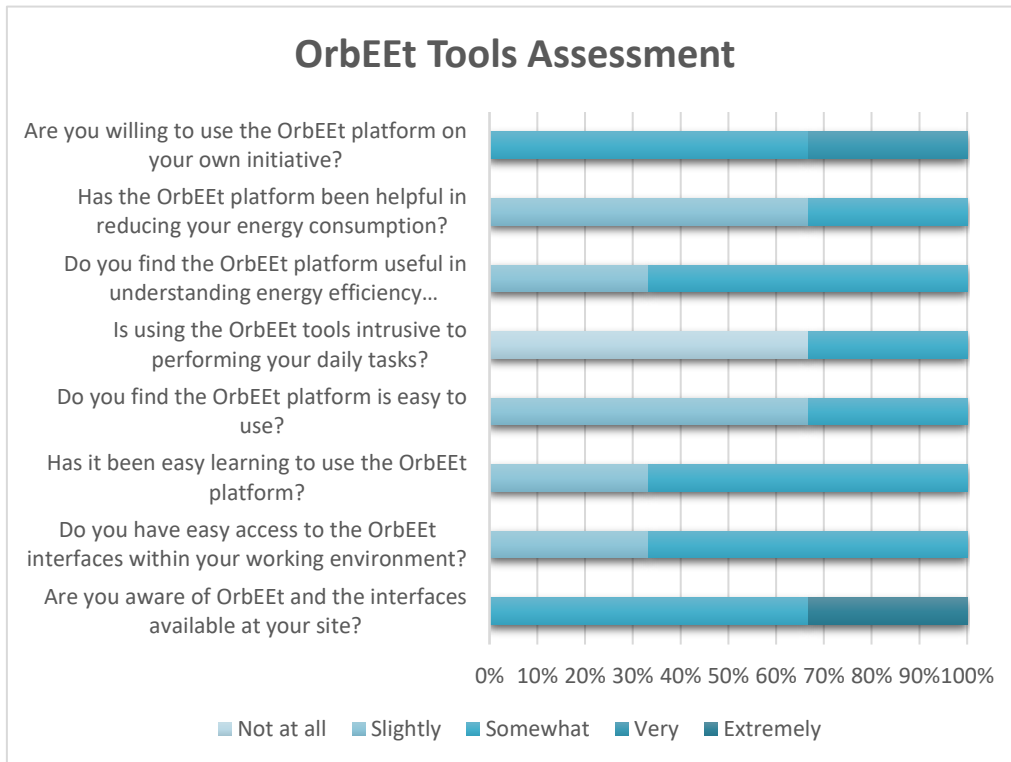
*Table 3 Total CO2 Emissions Savings - BHOE*

Some remarks about the demonstration of OrbEEt in Asparrena pilot site:

- In BHOE, significant savings at heat consumption occurred on the 1<sup>st</sup> floor; with end users engagement level and the site location affecting the impact of OrbEEt framework
- The level of controllability (depicted also in the triggering/notification messages) was a main factor affecting the final impact; (technology enabled energy savings) the impact on heat consumption was higher than lighting or office/plug devices;

- With regard to technology-enabled energy savings, the availability of bi-switches was a main factor in achieving significant light consumption savings
- The level of knowledge/interest for the domain affects the final results; technicians vs. administrative personnel and the level of engagement and commitment in project activities
- End users level of commitment is rather low; end users prefer to receive summary notifications about their performance.

The level of end users engagement is further evaluated as a main objective of the project.



The level of commitment of end users in BHOE premises is high; the knowledge of the domain and the interest for the provision of personalized services were the main factors towards the commitment of the end users in project activities.