Pitch deck speech

# Introduction

The increasing share of renewable energy sources reduces the possibility of accurate forecasting of the generation profile and increases the requirements for the flexibility of energy systems.

# Problem

The general problem is that the energy produces by DER such as PV, wind, etc. is not efficiently used because of the lack of flexibility.

That lead to the following problems:

The energy prices are often extremely low for the producers. For example, during the sunny day at noon when PV plants run at high capacity.

But the consumers are consuming more energy during the time when the prices are much higher, for example at the evenings, so the both sides are facing significant loses.

Also, it’s not easy to balance the network, so a huge amount of energy reserves have to be available, which additionally increases the costs.

# Solution - Concept

The idea is to enable smart grid by providing interfaces between the IoT devices related to energy consumers and producers in order to allow reliable operation and savings based on demand side management and energy storage.

The graph shows actual prices that sometimes are close to zero, because the supply is high when the demand is low.

Thanks to the storage nature of the water storage heaters, the time for running the appliances could be shifted to the periods when DER produce energy at lower prices without compromising the user experience. For example, the heater could be turned on when the prices are low, usually few hours before the evening, but not same every time, so communication and real time data processing is required.

That shift in the consumtion profile lead to increasing the power demand and therefore the prices for the energy produces, so both sides are interested.

# Solution – Technical

Graph here

**Potential to produce an application with interoperable services**

The IoT devices use public data from DSOs to reduce the electrical energy cost for the customer, but also to reduce the peaks in the generation profile.

# Impact

Degree of grid stakeholder engagement in providing relevant data

# Impact

Consumer engagement/participation agreement (quantified and accompanied by geographic distribution)

Alternative solutions

Using other type of batteries is much more expensive.

It’s very expensive and definitely to have chemical battery for powering the storage water heater.

For example, to heat 200 liters of water requires ??? energy. The boiler cost 400 euro, while the battery with such capacity cost around ???, because the expensive components.

Gravitational are also expensive.

# Assumptions

The price for the customers is set to be 20% higher than the energy exchange.

The calculations are based on the real prices, but its expected that that the prices will increase with the demand, so we made other

# Team

I’m fully confident about the ability of the team to implement the project

# Conclusion

Some factors are on under our control, so there some risks, but the trends shows that we are on the right way for enabling smart grid.

The proposed solution was designed for end consumers to reduce their energy costs, but also engages Distributed Energy Resources (DER) such as photovoltaic, wind, cogeneration, water, geothermal, etc. and could be scaled up to EU level introducing the possibility of smart GRID for supporting the balance of the EU energy market.

# Notes

you'll have 10 min to present and defend your application considering:

Potential to produce an application with interoperable services

Degree of grid stakeholder engagement in providing relevant data

Consumer engagement/participation agreement (quantified and accompanied by geographic distribution)

Then the selection committee will have 5 min to introduce questions. Please be mindful of the time and be objective.