



Making it easy to be flexible energy consumers through intelligent assistants

01

Challenge

In the transition to an energy system dominated by renewable resources, energy consumers assume a more active role in matching production with consumption. As key providers of energy flexibility, they can and will need to adjust consumption so it fits a more fluctuating energy generation.

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Aim

The aim of the iFLEX project is to make it easy and attractive for energy consumers to engage in flexibility services in which they adjust their energy consumption in response to price signals, flexibility requests or other incentives coming from the energy system. As a result, they are empowered to take ownership of the green energy transition.

03

Approach

To assist the consumer in managing the flexibility, iFLEX is developing an intelligent personal assistant which handles all the complexity of system interactions on behalf of the consumer. The assistant is developed from a common software framework, making it customisable to other European settings and their specific needs, incentives and market structures.

To show the versatility of the iFLEX solution, the framework and assistant applications are demonstrated in three European countries, involving more than 600 consumers.

The consumers are mainly private households and apartment buildings in areas with a high penetration of renewable energy.



Kozjansko & Savinjska in Slovenia

Utilising household flexibility for peak reduction and efficient operation of the power grid



Athens, Thessaloniki & Volos in Greece

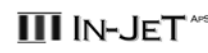
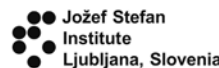
Integration of smart homes into the grid and aggregation of their flexibility for energy market operation



Helsinki & Oulu in Finland

Holistic flexibility management of apartment buildings for energy market participation

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Meet the iFLEX Assistant

– your energy and flexibility manager

- **Digital twin:** The iFLEX Assistant learns and adapts to the consumption behaviour, control policies and dynamics of the home and reacts to price signals or flexibility requests according to consumer wishes
- **Personal preferences:** The Assistant takes into account the user's personal preferences in terms of optimisation goal, comfort, control and communication
- **Advice:** The Assistant can advise on how to optimise consumption and help make the right choices
- **Convenience:** The activation of flexibility can be fully automated
- **Transparency:** The user can access information about flexibility events and results and be in control of the operation at all times
- **Security:** User protection is achieved by secure and private data exchange

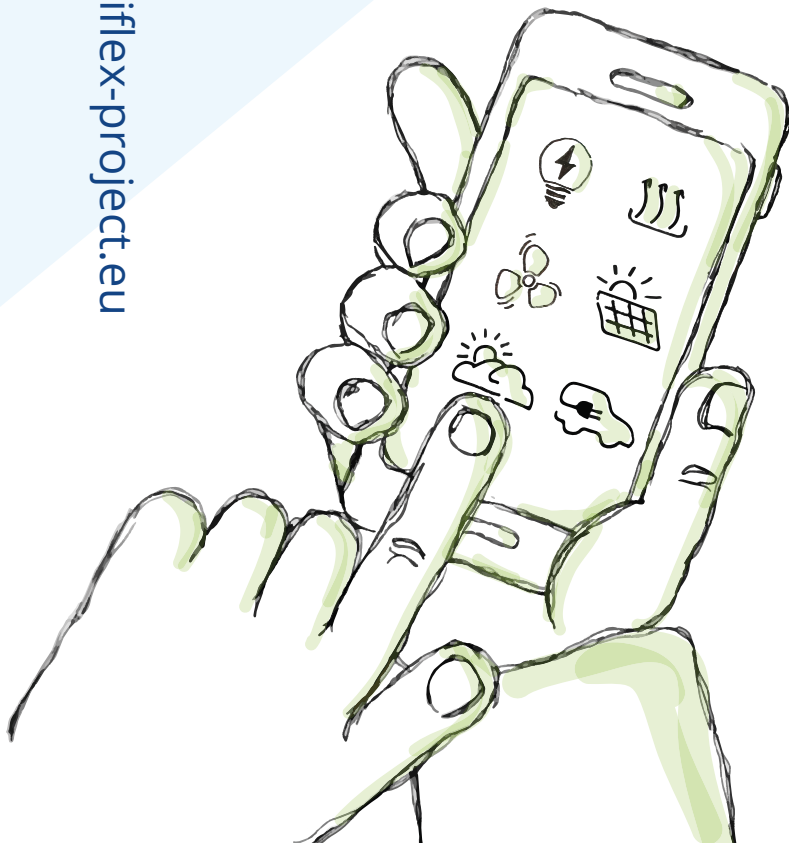
Consumer benefits

The iFLEX flexibility management solution enables the consumer to benefit economically through cost savings or rewards for being flexible, personally through smarter energy management & empowerment and environmentally by contributing to a more sustainable living.

System & market benefits

The energy actors can procure and leverage more consumption flexibility in the balancing of demand with supply and for optimal power grid operation, with the iFLEX solution providing the predictability, reliability and accessibility needed for flexibility modelling and management.

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iFLEX
Intelligent Assistants for Flexibility Management