



**Energy Communities Track** Technologies, Services and Regulations

### DE-RISK: Technologies for residential Demand Response

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#### **DE-RISK in a nutshell**

DE-RISK aims to support the market uptake of RES by fostering the adoption of demand response & LFMs and unlock up to 100GW of flexibility by 2030.

Core project elements include:

- Flex platform based on Digital Twins
- Customer Behaviour Journey
- Multi-sided Business Models
- > LFM Regulatory Package
- Financing Schemes
- Exhaustive Validation in TR, ES, IE, FR

HEU Topic: HORIZON-CL5-2021-D3-02-03 - Market Uptake Measures of renewable energy systems

Project Type: Coordination & Support Action

EU Funding: € 1 999 711

#### https://deriskproject.eu/





#### **Aims & objectives**



- Engage end consumers to take an active part under the local flexibility strategy
- Increase RES hosting capacity and minimize the risk of implementation and operation of Local Flexibility Markets
- Expose local flexibility regulatory challenges and develop a regulatory recommendation to overcome them
- Leverage the adoption of Local Flexibility Markets and RES investments
- Validate the DE-RISK holistic solution to guarantee scalability and replicability







# Demand-response tool-suite for flex discovery, management & delivery

- Modular software stack delivering DR services to market actors and householders
- 4 layers facilitate alternative business models, deployments and service delivery options
- Facilitates implicit & explicit DR, and building-level energy management (selfconsumption, cost reduction, energy efficiency)





#### Live & granular household energy data collection



#### **Real-time digital twinning of households**



#### **Data-driven home energy/flex management**



**On-Demand Flexibility Management** 

Local optimization mode

Flexibility forecasting & optimization

Building **Generation/Storage** Flexibility forecasting

**Building DER management & operational** scheduling



#### Market actor tools for flexibility exploitation



## Mobile apps for householders for energy awareness and smart home control











#### **Results from past demonstration activities**

 Demonstration of flex delivery confidence in automated explicit DR scenario (several 100s activations - H2020 DRIMPAC project)

Pilot	Building type	Within 5% of requested power	Within 10% of requested power
ES -	Residential	89,7%	87,2%
	Tertiary	100%	95,5%
CY -	Residential	82%	77,2%
	Educational	64,8%	61,3%

 During DE-RISK the tool-suite will be demonstrated and validated in other settings, including diverse DR scenarios, infrastructure availability, cultural contexts, regulatory frameworks, etc.









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