

ENFLATE PROJECT NEWSLETTER

ISSUES ADDRESSED

In the last 6 months, ENFLATE has been exploring how electricity markets work and how they're changing to use more clean energy, like wind and solar power, in alignment with rules set by governments and how money moves in different countries. In Europe. There are different kinds of markets for electricity, some selling energy, some keeping the power grid stable, and others helping with local power needs. ENFLATE's journey is all about understanding how flexibility is important in all these markets for adjusting things quickly, like turning off power when it's not needed or adding more when it is.

ENFLATE has delineated the need for cross-border collaboration for balanced energy supply management, supporting local markets in making their grid work better through congestion reduction in the energy flow. ENFLATE also explored how companies that distribute power in local energy markets could play a more effective role. The partners examined energy network regulations and pricing, considered adaptability within the energy system, and reached the consensus that establishing transparent regulations, effective performance measurement methods, and innovative input from business communities are all crucial to facilitate stakeholder utilization of energy in a flexible manner.

ENFLATE is actively sharing findings with multi-stakeholder communities, focusing on local energy markets, cost analysis, smart planning, and verifying its digital technologies in 6 demonstration areas. This includes insights into electric cars, smart meters, and digital energy tools in Europe's evolving electricity markets. Importantly, ENFLATE underscores the significance of transnational collaborations in managing the interplay between renewable energy, regulations, and finance, as well as the role of secure "data spaces" in fostering innovative ideas for a sustainable electricity future.

INTERESTING HIGHLIGHTS

ENFLATE enhances the European smart meter deployment by integrating advanced data analytics and artificial intelligence. This fosters the transition to a service-oriented European energy sector by digitalizing distribution networks, enabling real-time monitoring, and optimizing energy distribution for improved grid reliability and efficiency.

Project funded by



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Education,
Research and Innovation SERI



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PROJECT DETAILS

Timeframe: September 2022 - August 2026

Budget: € 14,314,162.00

**HORIZON EUROPE-
Innovative Actions :**
€ 7,686,305.00

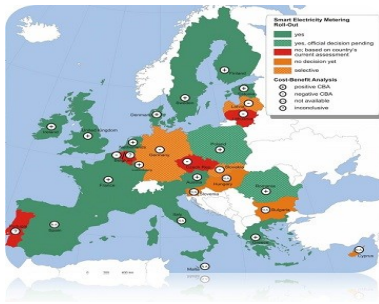
IPA : € 68,176.80



Co-funded by
the European Union

ENFLATE RUNNING FULL SPEED

Several demos showcase the application of smart meters in various scenarios in ENFLATE:



Smart Metering deployment in the European Union

<https://ses.jrc.ec.europa.eu/smart-metering-deployment-european-union>

The shift from traditional to smart meters introduces bidirectional communication capabilities, allowing measurement of both electricity injection and withdrawal, thereby enhancing stakeholder communication. European directives have actively advocated for the deployment of smart meters since 2009, and the 2019 Clean Energy Package underscored consumer rights and the implementation of dynamic pricing. Cost-Benefit Analysis (CBA) targets an 80% smart meter penetration by 2020 and aims to equip 80% of final customers with smart meters by 2024.

ENFLATE observes varying progress in smart meter adoption among Member States, influenced by operational contexts and regulations. Six key drivers for smart meters include dynamic tariffs, grid modernization, retail innovation, decentralized energy integration, fuel poverty solutions, and energy efficiency efforts. CBAs in many Member States consistently show operational savings outweighing costs. ENFLATE demonstrations illustrate smart meters' practical utility in diverse scenarios, shedding light on flexibility market impacts on grid utilization.



St. Gallen (Switzerland): DERs like boilers and charging stations, coupled with existing smart meters, form the focus of this demo. Additional real-time metering and control hardware complement the existing infrastructure, providing energy measurement and control signals.

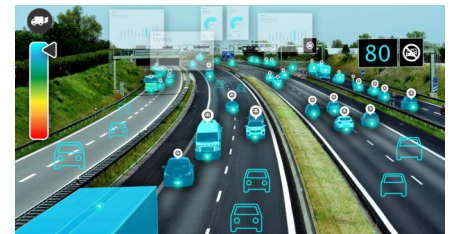


Kungsbacka (Sweden): EKSTA, will integrate its 3,000 apartments into a project demonstration to showcase real-time measurement via smart meters, streamlined controller integration, and the incorporation of various technologies, including heat networks, solar PV systems, battery energy storage, and smart appliances.



Geneva (Switzerland): The Geneva site is a platform for displaying autonomous vehicles and the optimization of electric vehicle charging, employing cutting-edge technologies like automated doors, induction charging stations, and battery cycle optimization.

Skiathos (Greece): This demo involves about 18 houses with rooftop PV, a 300kW PV plant, 32 houses controlling various systems, irrigation networks, and infrastructure in the port and airport. The aim is frequency control using available data sources like SCADA systems, Ethereum blockchain, and the goal is to balance voltage levels.



Láchar (Spain): Grid stability and ancillary services management tools will be showcased in flexibility services, including overvoltage and congestion management, along with Frequency Containment Reserve (FCR) and manual Frequency Restoration Reserve (mFRR) services. Flexurers, PV plants, industrial users, and smart meters play pivotal roles.



Dragalevtsi (Bulgaria): Diverse residential blocks integrate health assessments with advanced real-time monitoring, gathering data on environmental factors and energy usage. This holistic approach improves living conditions, sustainability, and deepens our understanding of energy and environmental dynamics.



The ENFLATE project has teamed up with BEFLEXIBLE and STREAM with the goal to support EU's energy transition. BEFLEXIBLE's expertise in optimizing energy distribution complements STREAM's focus on renewable energy integration. Their synergy enhances the seamless incorporation of renewables into local grids. ENFLATE's exploration of flexible energy systems further bolsters this partnership by providing real-time data and demand-side management strategies for optimized energy use. By combining their expertise and resources, these 3 projects apply a comprehensive approach to cleaner, more reliable, and sustainable energy networks, accelerating progress toward a greener and more efficient energy future.

SISTER PROJECT COLLABORATION

BEFLEXIBLE is a project that focuses on enhancing flexibility in energy systems. It aims to develop innovative solutions that optimize energy use and distribution, particularly in buildings and industrial sectors. By integrating various energy sources, storage systems, and demand-side management strategies, BEFLEXIBLE aims to create more efficient and resilient energy networks while promoting renewable energy adoption. This project contributes to the transition towards cleaner and more sustainable energy systems.

STREAM is a project dedicated to advancing the integration of renewable energy sources into local energy grids. It seeks to develop cutting-edge technologies and strategies that enable a seamless incorporation of solar, wind, and other renewables into energy networks. By addressing technical, economic, and regulatory challenges, STREAM aims to create more reliable, affordable, and sustainable energy systems that reduce greenhouse gas emissions and promote the utilization of clean energy sources.

ENFLATE is a project that focuses on the deployment and optimization of flexible energy systems, driven by the integration of smart meters and digital technologies. This project aims to demonstrate the potential of demand-side flexibility, enabling energy consumers to actively manage their energy usage and contribute to grid stability. By utilizing real-time data and control mechanisms, ENFLATE seeks to enhance energy efficiency, support the integration of renewable energy, and empower consumers to play a more active role in the energy transition.



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