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Empowering the energy consumer: Tools, tariffs and Polish pilot case studies

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Presentation overview



Part 1: Consumer empowerment tools

- **The Bill Explainer** – bridging the gap between complex utility data and consumer understanding.
- **European Smart Tariff Map** – a visual benchmarking tool for dynamic pricing across the EU.

Part 2: Polish case studies

- **Pilot Case I: Socio-economic drivers**
 - Analyzing small end-user participation in demand response programs.
 - Identifying barriers and motivations for Polish consumers.
- **Pilot Case II: Integrated financing (IN PROGRESS)**
 - Applying the 'Energy Efficiency First' (EE1st) principle to residential buildings.
 - Quantifying Non-Energy Benefits (NEBs) to unlock investment.

The Bill Explainer

Understanding costs and smart savings

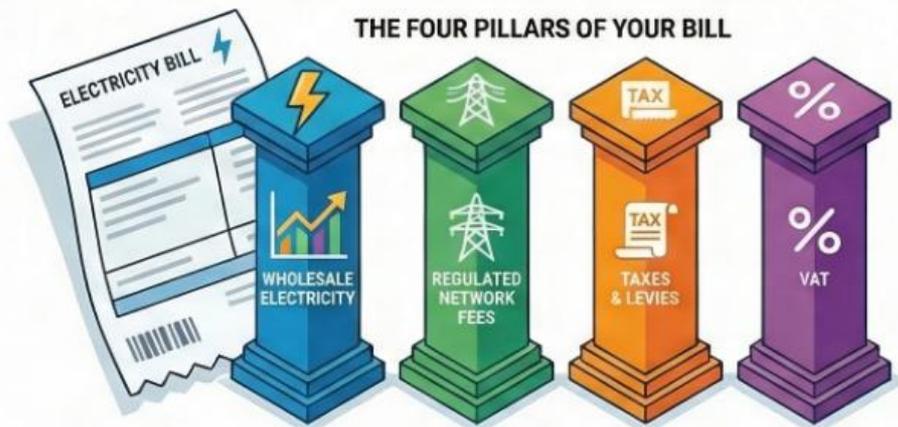


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As energy consumption shifts primarily toward electricity, understanding the complex makeup of utility bills is essential for affordability. This infographic breaks down the various cost elements and explains how 'smart tariffs' allow consumers to reduce their individual bills while lowering overall system costs.

DECODING YOUR BILL COMPONENTS

THE FOUR PILLARS OF YOUR BILL



NATIONAL TAXES AND LEVIES VARY



Fees range from renewable energy support to local costs like public TV or rail.

YOUR HABITS IMPACT EVERYONE



High demand during tight system conditions forces expensive infrastructure upgrades, raising prices for all.

SMART TARIFFS AND SAVING STRATEGIES

CHOOSE THE RIGHT TARIFF STRUCTURE



FLAT RATE
The same price regardless of the time of day.



TIME-OF-USE (TOU)
Different prices for predefined time periods (e.g., peak vs. off-peak).



DYNAMIC PRICING
Prices change every hour/15 minutes based on the wholesale market.

TAKE AGENCY TO REDUCE COSTS



Use comparison websites



Install smart meters



Automate flexible devices like EVs or heat pumps.

THE BENEFIT OF SHIFTING DEMAND
Moving consumption to low-demand periods allows you to benefit from lower-priced, renewable-heavy energy.

European Smart Tariff Map

Navigating the European smart tariff map



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An interactive tool centralized with cross-border data, helping consumers understand their power to mitigate rising electricity costs through smart meters and flexible pricing, developed by the ENEFIRST+ project.



What the Map Tracks

Empowering Consumer Choice



Smart Meter Rollout & Dynamic Uptake

Displays the percentage of households equipped with smart meters and those using dynamic tariffs.



Time-of-Use (ToU) Network Availability

Identifies countries where regulated network tariffs offer varying prices based on time of use.



Multi-Source Data Integration

Combines research from ACER 2024/2025 reports and the 2025 RAP smart tariff survey.



Shifting Demand for Savings

Explains how consumers can lower bills by moving consumption to low-cost, high-renewable periods.



Flexible Use Automation

Highlights opportunities for automating energy-heavy devices like electric vehicles, boilers, and heat pumps.



Mitigating Bill Increases

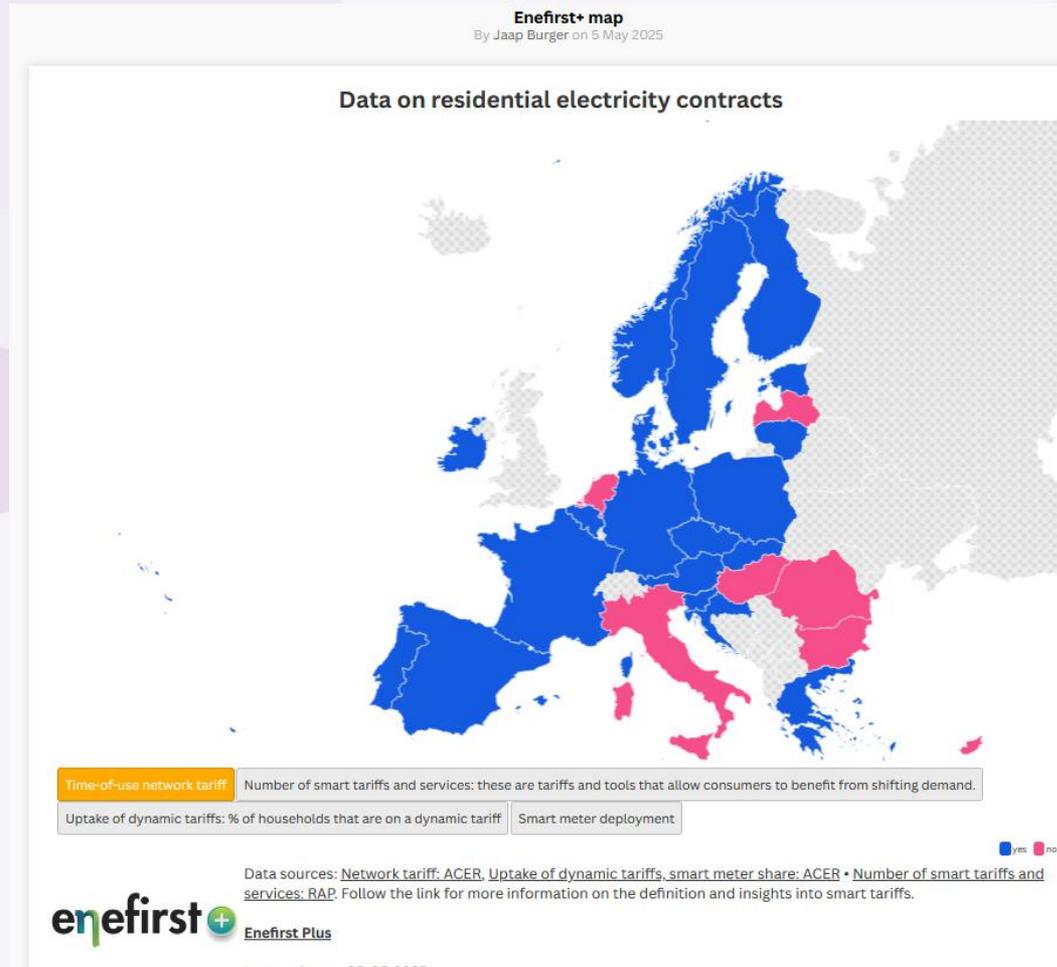
Provides transparency for consumers unaware of their agency in reducing system and personal costs.

European Smart Tariff map

The tool



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Pilot Case I: The Polish DSR pilot case overview



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Overcoming barriers and a phased roadmap for residential Demand Side Response (DSR) in Poland.

THE CURRENT LANDSCAPE & BARRIERS



Awareness Deficit

The majority of Polish households have never heard of Demand Side Response (DSR) concepts.



Trust and Comfort Barriers

Participation is hindered by fears of losing home comfort and mistrust of data security.



66% Prefer Simple Incentives

Most users favor direct financial rewards over complex, riskier dynamic tariff pricing models.

STRATEGIC ROADMAP FOR IMPLEMENTATION



Phase 1: Foundational Engagement

Focus on building awareness through simple, voluntary, penalty-free incentive programs.



Phase 2: Market Liberalization

Introduce independent aggregators and AI-driven automation to maximize flexibility value.



From Commodity to Service

Success requires bundling DSR with smart-home services like EV charging and automated management.

Pilot Case II: Integrated financing (IN PROGRESS)



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From Barriers to Strategic Priority



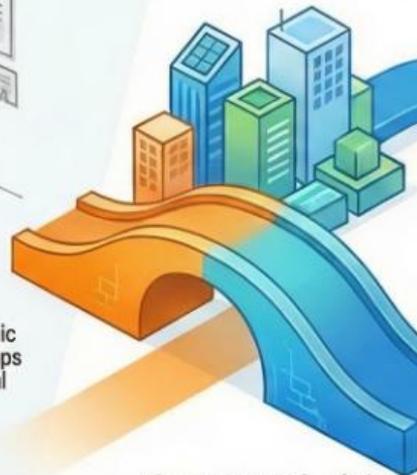
Current Fragmented Financing

Polish programs focus on individual costs, ignoring broader social and systemic value.



Addressing Pilot I Barriers

Overcoming socio-economic skepticism and systemic gaps by prioritizing foundational energy efficiency.



The EE1st Principle

Prioritizing energy efficiency investments to create a stable business case for future demand-side solutions.

The Integrated Financing Module

Advanced Cost-Benefit Analysis

Using "Final Unit Cost" metrics to quantify value beyond simple financial returns.



CBA Perspective	Primary Focus
Society	Environmental and health impacts (NEBs)
System (DSO)	Grid stability and infrastructure efficiency
End-User	Direct energy savings and financial returns



Integrating Non-Energy Benefits (NEBs)

Incorporating bonuses for air quality improvement, energy poverty reduction, and workforce retraining.



Policy Recommendations

Providing actionable guidance to align national support programs with the EE1st priority.

Invitation for cooperation



Upcoming milestones (Pilot Case II):

- **New background analysis report:** An updated deep dive into the second pilot case will be released in April 2026.
- **Thematic deep-dive sessions:** We are organizing a series of small-group meetings from April to July to:
 - Discuss technical findings in detail.
 - Share cross-border experiences and best practices.
 - Validate the integrated financing module and NEB quantification.

Get involved

We invite national participants and stakeholders to collaborate with us. This is an opportunity to shape the final outputs of the pilot and share your own expertise.

Key lessons learned



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THE CONSUMER MINDSET & BARRIERS



64%

Most households, including prosumers, have never heard of DSR programs.



Comfort and Trust are Primary Hurdles

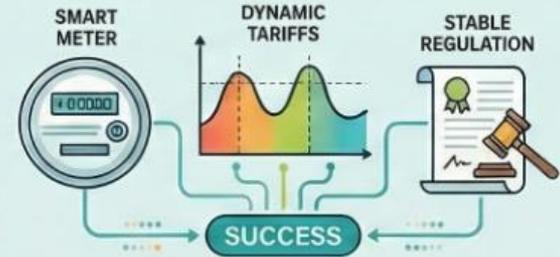
Participation is blocked by fears of losing personal comfort and deep mistrust of data security.



IMPLEMENTATION & INFRASTRUCTURE REQUIREMENTS

'Fit-and-Forget' Automation

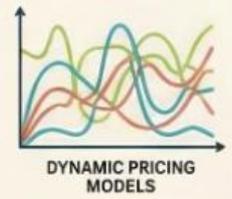
Adoption requires background automation and permanent aggregators to manage market complexity.



Essential Infrastructure & Regulation

Success depends on full smart meter rollouts, dynamic tariffs, and stable smart regulations.

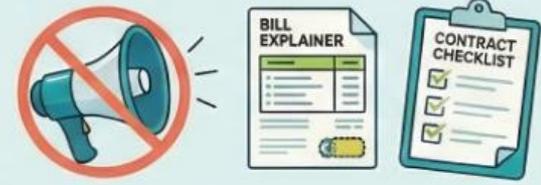
66% Demand Simple Incentives



Consumers strongly prefer direct financial rewards over complex dynamic pricing models.



Practical Tools Over Broad Campaigns



Consumers need concrete resources like 'Bill Explainers' and contract checklists rather than information campaigns.

Links for the discussed resources



1. Bill Explainer

http://ee1st.eu/wp-content/uploads/2025/10/ENEFIRSTplus_Bill-Explainer.pdf

2. European Smart Tariff Map (2025): Live data on dynamic pricing and smart meter rollouts.

<https://public.flourish.studio/visualisation/22987982/>

3. Pilot Case I: Socio-economic aspects of participation of small end users in demand response programs. The case of Poland

<https://ee1st.eu/resources/getting-small-end-users-part-of-demand-side-response-findings-from-the-enefirst-plus-polish-pilot-case/>



Partners



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Thank you for your attention



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