OVERVIEW OF OTHER ENERGY POVERTY PRACTICES IN NORTH WEST EUROPE

INTERREG NWE PROJECT (NWE0100038)
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(Scaling Up The Energy Poverty Approach)

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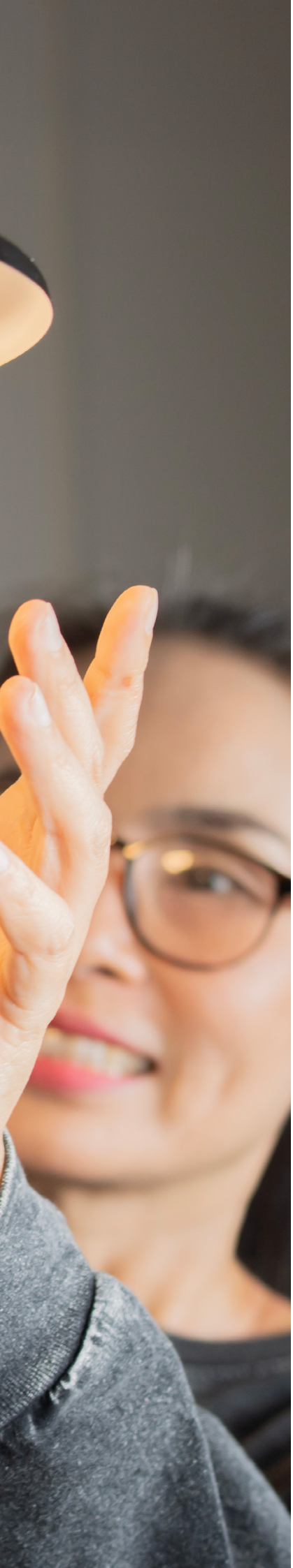

1. INTRODUCTION

This document provides an analysis of energy poverty mitigation practices from various EU projects, extending beyond the contributions of SCEPA project partners. While an overview of SCEPA partners' practices has been documented in a previous report (Jansen, E., Dortmans, K., Landsbergen K., 2025), this report gives an overview of insights of other EU-Energy Poverty projects that had already a relation to the partners and of relevant energy poverty related networks in which they would like to be involved in.

The SCEPA project strives to leverage and build upon the wealth of existing knowledge, experiences, and networks rather than reinvent the wheel. Our aim is to create a comprehensive foundation that synthesizes the efforts already undertaken across Europe, showcasing both proven strategies and innovative approaches. To ensure that all relevant insights are systematically documented and made widely accessible, we are developing a specialized toolbox - a centralized repository where accumulated knowledge is organized and accessible via a user-friendly, chat-based local search system. The toolbox will empower stakeholders, practitioners, and policymakers to access tailored solutions and best practices with ease, fostering more informed and effective strategies to combat energy poverty. Our primary focus is on practices implemented within the North-West European region. Countries in this area, having faced specific challenges related to energy poverty, have generated a wealth of approaches, models, and interventions that can inspire others. By studying these practices, we can harness their potential to develop effective measures that align with the unique contexts of different communities.

This document is more than a collection of information – it represents a commitment to collaboration, knowledge exchange, and continuous learning. By making these insights openly available, we aim to empower SCEPA partners and its Community of Interest to participate in addressing energy poverty, strengthening collective efforts, and paving the way for a more equitable and sustainable energy future.

REPORT STRUCTURE

Chapter two provides an overview of the project's methodology, outlining the approach and framework used in the analysis. Chapter three presents an overview and analysis of twelve projects, outlining the key lessons from each case. Chapter four then explores overarching findings drawn from these projects, providing a broader perspective on common themes and insights. Finally, the document concludes with a summary of key take-aways.

2. METHODOLOGY

The SCEPA project builds upon existing knowledge, experiences, and networks from previous projects to enhance future projects. This document summarizes insights and findings from an analysis of the energy poverty mitigation practices found in other projects, primarily in Northwest Europe, offering recommendations for the development of the data platform and toolbox. For the analysis, we identified relevant NWE projects through two primary approaches. First, we selected seven projects directly from the project application itself, ensuring alignment with the overarching objectives. Second, we identified three additional projects by thoroughly examining the local action plans of all partner organizations, broadening our dataset to capture a more comprehensive range of initiatives. Each selected project was analyzed through an extensive review of publicly available materials, including official websites, reports, and documentation.

Our analysis focused on several key aspects to facilitate meaningful comparisons and interpretations: (1) the project's focus and the countries involved, (2) the target audience,

(3) the methods, approaches, or interventions employed, and (4) the results and (5) main conclusions. By examining these elements, we aimed to align our findings with the steps outlined in the Joint Action Strategy utilized by SCEPA partners. Additionally, this approach allows for a comparison with previously published data from the Overview of *Partner Energy Poverty Practices* report by HAN.

Overview of EP projects in Northwest Europe in alphabetical order:

1. ACE, Condomium Retrofitting (closed)
2. Climate Active Neighbourhoods (closed)
3. Discover (runs until November 2026)
4. Energy Cities (existing network)
5. Energy Measures (closed)
6. Enlarge (closed)
7. ENPOR (closed)
8. EPOV/EPAH (existing network)
9. Housing 4.0 Energy (closed)
10. See2DO! (closed)
11. Wellbased (closed)
12. Wise (runs until September 2026)

3. OVERVIEW OF PROJECTS

This chapter presents an analysis of twelve projects, outlining the following aspects per project: the project's focus and the countries involved, the target audience, the methods, approaches, or interventions employed, the results and main conclusions.

3.1 ACE (ACCELERATING CONDOMIUM ENERGY RETROFITTING)

Focus and countries involved

The ACE-Retrofitting project focused on improving energy eficiency in condominiums by overcoming legal, financial, and human barriers, with local governments acting as facilitators. The ACE-Retrofitting project involved collaboration among various countries in Northwest Europe and ran *from 2016 to 2022*. The ACE-Retrofitting initiative was led by Energy Cities, a European network of local authorities, alongside six local governments from five diferent countries. Key partners included:

- Paris Climate Agency (France)
- Energy House Antwerp (Belgium)
- City of Liège (Belgium)
- City of Maastricht (Netherlands)
- Aberdeen City Council (United Kingdom)
- Frankfurt Energy Agency (Germany)

Target Audience

The project primarily benefited condominium owners by providing them with tools and guidance to retrofit their buildings. It also engaged building professionals, ensuring a collaborative approach between demand (owners) and supply (experts).

Methods – Approach - Intervention(s)

The ACE-Retrofitting project implemented a range of methods and interventions to accelerate energy retrofitting in condominiums:

- **Facilitation methods to overcome barriers**
  The project identified three major barriers to retrofitting: legal, human, and financial. To address these challenges, ACE-Retrofitting developed facilitation methods that helped local authorities act as intermediaries between co-owners and building professionals.
- **Support strategies for homeowners**
  Since condominium owners often struggle with decision-making and financing, the project introduced step-by-step guidance to help them navigate the retrofitting process. This included awareness campaigns to educate owners on the benefits of retrofitting, financial advisory services to assist with funding options and technical support to help owners understand renovation requirements.

- **Training and coordination for building professionals**
  To ensure high-quality retrofits, ACE-Retrofitting focused on bridging the skills gap among building professionals. This involved specialized training programs for architects, engineers, and contractors, networking events to connect professionals with condominium owners, and standardized procedures to improve eficiency and quality.
- **Digital tools for collaboration**
  The project leveraged CoachCopro, an online platform originally developed by the Paris Climate Agency. This tool was adapted to help condominium owners and professionals collaborate more efectively. It provided guidance on retrofitting steps tailored to diferent building types, a matchmaking system to connect owners with qualified professionals and case studies, and best practices to inspire successful retrofits.
- **Pilot projects in six cities**
  ACE-Retrofitting tested its methods in six pilot cities: Paris, Antwerp, Liège, Maastricht, Aberdeen, and Frankfurt. These cities served as test beds for new approaches, allowing local governments to refine strategies before scaling them up.
- **Governance framework for local authorities**
  Municipalities played a crucial role in facilitating retrofits. The project developed a governance framework that enabled local governments to mediate between stakeholders to streamline decision-making, provide financial incentives to encourage retrofitting, and monitor progress to ensure long-term success.

Results

- Improved energy eficiency in condominiums
- Lower energy bills for residents
- Creation of jobs, with an estimated 19 net jobs per €1M investment
- Development of CoachCopro, an online tool to assist owners and professionals in the retrofitting process

Main conclusions

1. **Retrofitting takes time**
   One of the biggest lessons learned was the slow decision-making process in condominiums. It typically takes 3-5 years for retrofits to be approved and implemented due to the complexity of co-ownership structures and the need for consensus among residents.
2. **A shift to masterplan approaches**
   Initially, the project focused on individual energy eficiency measures, but later transitioned to a masterplan approach. This broader strategy not only improved energy eficiency but also addressed health, safety, maintenance, and adaptation needs, making retrofits more comprehensive and strategic.
3. **The importance of one-stop shops**
   The project highlighted the critical role of one-stop shops in supporting condominium retrofits. These services help connect homeowners and building professionals, making the process more eficient and accessible.
4. **Local governments as facilitators**
   Municipalities and local authorities play a key role in overcoming legal, financial, and human barriers. By acting as facilitators between co-owners and building experts, they can accelerate the retrofitting process and ensure long-term success.

5. **No one-size-fits-all solution**
The project found that each city and condominium require a tailored approach. While common success factors exist, strategies must be adapted to local contexts to be efective.

READ MORE:
https://vb.nweurope.eu/projects/project-search/accelerating-condominium-energy-retrofitting-ace-retrofitting/

3.2 CAN (CLIMATE ACTIVE NEIGHBOURHOODS)

Focus and countries involved

The CAN initiative supported energy-efficient building renovations in Northwest Europe, focused on retrofitting residential areas and engaging small and medium-sized enterprises (SMEs) to reduce greenhouse gas emissions. The project *ran from February 2016 to June 2023*. The project was led by Climate Alliance, an organization dedicated to climate action. Several municipalities and energy agencies participated, including:

- Belgium (Liège and Liège-Energie)
- France (Brest Métropole and Établissement Public d'Aménagement Public du Mantois Seine-Aval)
- Germany (Worms, Stadt Essen, and Energieagentur Rheinland-Pfalz)
- Ireland (SouthEast Energy Agency)
- Netherlands (Gemeente Arnhem)
- United Kingdom (Optivo)

Target Audience

Initially, the project focused on residential areas in need of renovation. Later, the scope expanded to include small and medium-sized enterprises (SMEs), particularly those in mixed-use urban quarters. The project targeted several groups:

- Residents of older neighborhoods: Households in energy-inefficient buildings received support for renovations
- Small and medium-sized enterprises (SMEs): From 2021 onwards, the focus expanded to businesses in mixed urban areas, such as shops and small production companies
- Municipal policymakers: CAN assisted municipalities in developing strategies to promote energy efficiency

Methods – Approach - Intervention(s)

The project implemented several strategies:

- Innovative activation methods: Municipalities collaborated with residents and businesses to enhance energy efficiency.

- Direct interaction: Local authorities provided face-to-face advice to small and medium-sized enterprises (SMEs) to support energy-efficient renovations.
- Collaboration with "multiplicators": These were trade unions, local leaders, and pioneers who helped spread the message more effectively.
- Installation of small energy-saving measures: Smart meters and energy monitoring systems were introduced to optimize consumption.

Results

CAN achieved significant outcomes in improving energy efficiency and reducing CO_2 emissions in Northwest European neighborhoods:

Energy-efficiency

- Residential areas saw enhanced insulation and energy retrofits, leading to lower energy consumption.
- Small and medium-sized enterprises (SMEs) benefited from customized energy-saving strategies, including smart monitoring systems.

Reduction in greenhouse gas emissions

- The project contributed to a measurable decrease in CO_2 emissions by promoting sustainable energy practices.
- Municipal strategies integrating SMEs helped expand the impact beyond residential areas.

Community engagement and policy development

- Face-to-face advisory methods proved effective in encouraging businesses and residents to adopt energy-efficient measures.
- Municipal cooperation strengthened, leading to long-term sustainability policies.

Main conclusions

1. **Neighborhood-level engagement is key**
   Direct interaction between local authorities and businesses fosters trust and accelerates climate change.
2. **SMEs play a crucial role in sustainability**
   Municipal strategies must integrate SMEs to achieve broader energy efficiency goals.
3. **Innovative activation methods enhance participation**
   Collaboration with multiplicators (trade unions, local leaders) significantly improved outreach and adoption of energy-saving measures.

READ MORE:
https://www.climatealliance.org/activities/projects/can.html https://vb.nweurope.eu/media/19788/can_practicecube2023_final.pdf

3.3 DISCOVER

Focus and countries involved

The DISCOVER energy project in France is part of a broader European initiative focusing on supporting Community Energy Projects (CEPs). It aims to empower local energy communities particularly in the area of photovoltaic energy by addressing common challenges such as legal, financial, and organizational barriers. Project goals are to facilitate the launch of new community energy projects; to provide guidance and support to local energy initiatives; to develop a comprehensive manual for energy communities and to establish regional hubs to assist stakeholders in overcoming challenges. It runs from December 1, 2023, to November 30, 2026. It includes the Parisian Climate Agency, and it collaborates with several regional and international partners:

- AISFOR (Italy) – The project coordinator, specializing in sustainable energy solutions
- AG.EN.A. SRL (Italy) – A key partner providing expertise in energy transition strategies
- Regional partners across France, Italy, Croatia, Bulgaria, and Austria – These partners help implement local service hubs and provide technical, economic, and legal support

Target Audience

The project targets several key groups and aims to bridge the gap between these groups by providing technical, financial, and legal support to facilitate the growth of community energy projects:

- **Local energy communities (LECs)**
- Citizen-led energy cooperatives that aim to produce and distribute renewable energy at a local level.
- Community-based organizations involved in energy transition initiatives. Municipalities and local governments seeking to implement sustainable energy policies.
- **Small and medium-sized enterprises (SMEs)**
- Businesses interested in reducing energy costs through renewable energy solutions. Companies involved in energy efficiency improvements and sustainable practices. Local industries that can benefit from decentralized energy production.
- **Households, residential communities and housing associations**
  Homeowners and tenants looking for affordable renewable energy options. Residents in energy-poor areas who need support in accessing sustainable energy solutions.
- **Policy makers and regulatory bodies**
- National and regional authorities responsible for energy legislation and incentives. Organizations involved in policy development for renewable energy projects. Experts working on legal frameworks to support community energy initiatives.
- **Technical and financial stakeholders**
- Energy consultants providing expertise on renewable energy integration. Financial institutions offering funding and investment opportunities for energy projects. Technology providers developing innovative solutions for decentralized energy systems.

Methods – Approach - Intervention(s)

In the project, a holistic, multi-level strategy is applied to accelerate the transition to renewable energy. This approach integrates community-led initiatives, municipal collaboration, regulatory adaptations, and direct interventions to create a sustainable energy model. By combining policy-driven interventions with grassroots initiatives, DISCOVER creates a scalable and adaptable model for renewable energy transition.

- Community-led energy initiatives
- DISCOVER empowers local energy communities (LECs) by providing technical, financial, and legal support. Citizen-led cooperatives and municipalities are encouraged to take ownership of renewable energy projects, ensuring long-term sustainability.
- Municipal and regional collaboration
- Local governments play a crucial role in integrating renewable energy into urban planning. DISCOVER works with municipalities to establish climate-air-energy plans, ensuring that renewable energy solutions are embedded in regional development strategies.
- Decentralized energy production
- The project promotes small-scale renewable energy installations, such as solar panels and wind turbines, to reduce dependency on centralized power grids. Additionally, district heating and cooling networks powered by renewable sources are implemented to enhance energy efficiency.
- Regulatory adaptations and policy support
- DISCOVER simplifies legal frameworks to facilitate renewable energy projects. It introduces crowdfunding mechanisms for community-led initiatives and ensures that new buildings meet mandatory renewable energy share requirements.
- **Public engagement and education**
- Raising awareness through workshops and training programs is a key component of the project. By encouraging citizen participation, DISCOVER fosters a culture of sustainability and energy-conscious decision-making.
- **Direct interventions for energy autonomy**

The project supports the development of local energy autonomy projects, particularly in small towns. These interventions address challenges related to institutionalization and long-term sustainability, ensuring that communities can maintain energy independence.

Results

So far, the DISCOVER energy project has made significant progress in advancing community-led renewable energy initiatives.

- **Expansion of local energy communities (LECs)**
  The project successfully triggered the creation of more than 20 new community energy projects across France and other participating regions. Regional energy hubs were established to provide technical, financial, and legal support to local energy cooperatives. Increased participation from municipalities and citizen-led organizations in renewable energy projects, fostering long-term sustainability.
- **Renewable energy generation and integration**
  DISCOVER facilitated the generation of approximately 3 GWh/year of renewable energy, significantly contributing to local energy autonomy. Deployment of solar and wind energy systems in urban and rural areas, reducing reliance on centralized power grids. Enhanced district heating and cooling networks powered by renewable sources, improving energy efficiency in residential and commercial buildings.

- **Policy and regulatory advancements**
  The project contributed to the simplification of legal frameworks to facilitate the development of community energy projects. Introduction of crowdfunding mechanisms to support decentralized energy initiatives, making renewable energy projects more accessible to local communities. Strengthened collaboration between policymakers and energy stakeholders to ensure long-term regulatory support for community-led energy projects.
- **Financial impact and investment mobilization**
  DISCOVER attracted more than €7.7 million in investment in renewable energy generation. The project provided financial guidance to local energy communities, helping them secure funding for infrastructure development.
  Increased awareness among investors about the viability and profitability of community-led renewable energy projects.
- **Stakeholder engagement and capacity building**
  Over 400 market stakeholders received training on renewable energy solutions and community energy project management. The project reached more than 20,000 people, raising awareness about the benefits of decentralized energy production. Strengthened cooperation between municipalities, businesses, and citizen-led organizations to ensure the long-term success of energy transition initiatives.

Main conclusions

The DISCOVER energy project has provided valuable insights into the development and implementation of community-led renewable energy initiatives. Below are the key conclusions drawn from the project:

1. **Community-led energy projects are essential for a sustainable transition Local energy** communities (LECs) play a critical role in accelerating the shift to renewable energy. Citizen engagement and municipal cooperation enhance project sustainability and long-term success. Decentralized energy production reduces dependency on centralized power grids and strengthens energy resilience.
2. **Policy and regulatory support are key to success**
   Simplified regulations and financial incentives encourage broader participation in renewable energy projects. Crowdfunding and cooperative models provide viable funding solutions for community-led initiatives. Government-backed frameworks help streamline project implementation and reduce bureaucratic barriers.
3. **Financial mechanisms must be accessible and scalable**
   The project demonstrated that community energy projects can attract significant investment, with over €7.7 million mobilized. Financial guidance and support help local energy communities secure funding for infrastructure development. Investors are increasingly recognizing the profitability and viability of decentralized renewable energy projects.
4. **Public engagement and capacity building are crucial**
   Raising awareness through workshops and training programs fosters a culture of sustainability. Strengthened cooperation between municipalities, businesses, and citizen-led organizations ensures long-term success of energy transition initiatives.
5. **Decentralized energy production strengthens resilience**
   Small-scale renewable energy installations improve energy security and reduce costs. District heating and cooling systems powered by renewables enhance efficiency in urban areas. Local energy autonomy projects help reduce dependency on fossil fuels and centralized energy providers.

The DISCOVER project has demonstrated that community-driven energy initiatives, supported by strong policy frameworks and financial mechanisms, can significantly accelerate the transition to renewable energy.

READ MORE:
https://projectdiscover.eu/
https://webgate.ec.europa.eu/life/publicWebsite/project/LIFE22-CET-DISCOVER-101120622/developing-integrated-services-for-community-energy-to-accelerate- valid-energy-transition

3.4 ENERGY CITIES

Focus and countries involved

Energy Cities operates as a European network of local authorities and *was founded in 1990*. Its mission is carried out from its headquarters in Besançon, France, and a liaison office in Brussels, Belgium. The network supports cities in shaping their energy transition by fostering collaboration, sharing resources, and advocating for sustainable policies at regional and EU levels. The goal of the Energy Cities project is to empower local governments to accelerate the energy transition and achieve climate neutrality.

They aim to facilitate cooperation, share innovative solutions, and build resilient, low- carbon communities by fostering collective efforts among municipalities and stakeholders across Europe. The Energy Cities network includes cities from 30 countries. It serves as a learning community for those cities, providing resources, events, and support to local leaders working on sustainable energy and climate action.

Some of the key activities and projects under Energy Cities include:

- Community energy initiatives: Supporting local energy communities to promote renewable energy and energy efficiency.
- Pilot programs: Implementing innovative solutions to address energy poverty and foster social innovation in cities across Europe.
- Capacity building: Offering training and resources to local authorities and organizations to enhance their ability to implement sustainable energy projects.
- Networking and collaboration: Hosting events like the Energy Cities Annual Forum to bring together stakeholders and share best practices.

Participating countries: Albania, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, North Macedonia, Poland, Portugal, Romania, Slovakia, Slovenia, Spain.

Target Audience

The POWER UP project by Energy Cities focuses on addressing energy poverty by engaging various vulnerable groups and stakeholders. Here's a more detailed breakdown of the target groups:

- Energy-poor households: Individuals and families struggling with high energy costs, inadequate heating, or inefficient housing conditions. The project aims to support them by providing access to renewable energy and energy efficiency measures without financial risks.

- Local municipalities and public authorities: City administrations and regional governments play a crucial role in implementing policies and strategies to combat energy poverty. They help facilitate local energy initiatives and ensure long-term sustainability.
- Social organizations and NGOs: Community groups and non-profit organizations working directly with vulnerable populations. They assist in identifying energy-poor households, providing guidance, and advocating for fair energy policies.
- Energy utilities and citizen energy communities: Companies and cooperatives involved in energy production and distribution, including renewable energy providers. They collaborate to create inclusive energy solutions that benefit disadvantaged communities.
- Researchers and policy experts: Specialists studying energy poverty and developing frameworks to improve energy access and affordability. Their insights help shape effective interventions and policy recommendations.

Overall, the project aims to empower these groups by co-designing new business models and fostering collaboration to create sustainable energy solutions.

Methods/Approach/Intervention(s)

This Power-Up project applies several methods and interventions to tackle energy poverty. Based on available information, here are some key approaches:

- Health-focused energy interventions: The project integrates energy efficiency measures with health-focused strategies to improve living conditions for vulnerable households.
- Local action plans: Cities involved in the project design and implement tailored interventions, such as home energy advice, insulation upgrades, and heating system improvements.
- Community engagement: The project fosters collaboration between municipalities, social organizations, and energy providers to create inclusive energy solutions.
- Data-driven policy recommendations: Research teams collect data on energy consumption, household conditions, and health impacts to inform policy decisions and improve energy access.
- Capacity building: Training programs and knowledge-sharing initiatives help local authorities and stakeholders develop effective strategies to combat energy poverty.

Results

The POWER UP project by Energy Cities has achieved several key results in tackling energy poverty across Europe:

- Pilot programs in six cities: The project has implemented pilot schemes in cities such as Eeklo (Belgium), Valencia (Spain), Campania (Italy), and Rožnov pod Radhoštěm (Czechia), with replication efforts in North Macedonia and the Netherlands.
- Engagement of energy-poor households: Around 55,838 energy-poor consumers have been involved in defining and implementing social business models for renewable energy and energy efficiency.
- Investment in sustainable energy: The project facilitated at least €2.5 million in investments in sustainable energy solutions before its completion.
- Capacity building: More than 160 individuals from local organizations have been trained to provide affordable energy solutions and reinvest benefits into energy poverty mitigation measures.

- Innovative governance models: The pilots have acted as "living labs," experimenting with new social governance structures and business models to support vulnerable households.

NB. The POWER UP project by Energy Cities runs from September 1, 2021, to August 31, 2025. The results mentioned above have been achieved within this timeframe, with periodic reporting covering progress up to February 28, 2023.

Main Conclusions

The Energy Cities project has drawn several key conclusions regarding energy poverty and community-driven solutions:

1. Energy communities can alleviate energy poverty: The project highlights that energy communities—where citizens, small businesses, and local authorities collaborate to produce and manage energy—can provide affordable and sustainable energy services to low-income households.
2. Policy and financial support are crucial: While energy communities have the potential to reduce energy poverty, they face challenges such as regulatory barriers, limited awareness, and funding constraints. Targeted financial support and streamlined policies are necessary to maximize their impact.
3. Social cohesion and energy democracy: The project emphasizes that energy communities not only provide economic benefits but also foster social cohesion and energy democracy, empowering citizens to take control of their energy needs.
4. Need for capacity building: Training programs and knowledge-sharing initiatives are essential to help local authorities and stakeholders develop effective strategies for energy poverty mitigation.

READ MORE:
https://energy-cities.eu/

3.5 ENERGY MEASURES

Focus and countries involved

This project tackled energy poverty in seven European countries by engaging households directly and working with municipalities to implement low-cost energy- saving measures. The Energy Measures project focused on addressing energy poverty in seven European countries, including the Netherlands. It aimed to support energy- vulnerable households through direct engagement and innovative policy approaches. *The project started in September 2020 and was extended until March 2024* due to delays caused by the COVID-19 pandemic. In the Netherlands, the initiative is known as "Energiebox Plus," where energy coaches worked closely with households to provide energy-saving products and guidance. The goal was to help households regain control of their energy bills and improve their living conditions.

Participating countries: Belgium; Bulgaria; Ireland; North Macedonia; Netherlands; Poland and United Kingdom

Target Audience

The Energy Measures project targeted several specific groups affected by energy poverty and those involved in addressing it:

- Low-income households: Families and individuals struggling with high energy costs, often living in poorly insulated homes with inefficient heating systems. The project provides tailored advice and low-cost energy-saving solutions to improve their living conditions.
- Socially vulnerable groups: This includes elderly residents, single-parent families, and people with disabilities who may face additional challenges in accessing affordable energy.
- Local governments and municipalities: Authorities responsible for implementing energy policies and supporting vulnerable communities through financial aid and infrastructure improvements.
- Housing associations and landlords: Organizations managing rental properties, particularly those with tenants experiencing energy poverty. The project encourages them to invest in energy efficiency upgrades.
- Community organizations and NGOs: Groups working directly with energy-poor households, providing guidance, advocacy, and practical support.
- Energy advisors and professionals: Experts offering technical assistance and behavioral coaching to help households reduce their energy consumption.
- Researchers and policymakers: Specialists studying energy poverty and developing strategies to improve energy efficiency and affordability at a systemic level.

Methods/Approach/Intervention(s)

This project employed a combination of low-cost energy-saving measures and behavioral interventions to support energy-poor households. Here are the key methods and approaches used:

- Direct household engagement: Energy Measures worked closely with households in seven European countries to identify energy vulnerabilities and provide tailored solutions.
- Behavioral change strategies: The project encouraged households to adopt energy-efficient practices, such as optimizing heating, lighting, and appliance usage.
- Low-cost energy measures: Households received practical tools like LED lighting, radiator foils, draught-proofing materials, and water-saving devices to reduce energy consumption.
- Community-based support: Local organizations and municipalities collaborated to ensure long-term energy efficiency improvements and policy recommendations.
- Policy and institutional engagement: The project assessed how existing policies impact energy poverty and developed strategies to address structural barriers.

Results

Based on available data, the project has achieved the following measurable results:

- Household engagement: The project has directly supported over 1,500 energy- poor households across seven European countries.
- Energy savings: Households implementing low-cost energy measures have reported an average 10-15% reduction in energy consumption.

- Policy impact: The project has contributed to at least 12 policy recommendations aimed at improving energy efficiency and reducing energy poverty.
- Community training: More than 200 local energy advisors have been trained to assist vulnerable households in adopting energy-saving practices.

Main Conclusions

The project has drawn several key conclusions regarding energy poverty and effective interventions:

1. Behavioral changes lead to significant energy savings: Encouraging households to adopt energy-efficient habits has proven to be a cost-effective way to reduce energy consumption.
2. Low-cost measures can have a big impact: Simple interventions, such as LED lighting and draught-proofing, have helped households lower their energy bills without requiring major renovations.
3. Community engagement strengthens energy resilience: Collaboration between municipalities, NGOs, and energy advisors has been crucial in supporting vulnerable households and ensuring long-term sustainability.
4. Policy support is essential: Structural barriers, such as inefficient housing and financial constraints, require targeted policy measures to create lasting solutions for energy-poor households.

READ MORE:
https://energymeasures.eu/

3.6 ENLARGE

Focus and countries involved

Enlarge (Energies for Local Administrations to Renovate Governance in Europe) was part of the Horizon 2020 program and focuses on improving governance in the energy sector by promoting participatory and inclusive decision-making processes. It aimed to empower local administrations and communities to address energy poverty and implement sustainable energy solutions. The ENLARGE project, funded under the Horizon 2020 program, *ran from 2016 to 2018*. Its focus was on participatory governance in sustainable energy, involving dialogue and collaboration among policymakers, civil society, and practitioners. The ENLARGE project involved a diverse group of stakeholders from various countries, including policymakers, civil society organizations, and energy experts. The project was coordinated by the Istituto per la Ricerca Sociale (IRS) in Italy. Key participants and contributors came from countries such as Italy, Romania, and Sweden. These teams worked collaboratively to promote participatory governance in sustainable energy projects, focusing on co-design, co- production, and co-evaluation processes.

Participating countries: Italy, Slovenia, Romania and Poland.

Target Audience

The ENLARGE project focused on addressing energy poverty by engaging specific vulnerable groups and key stakeholders:

- Low-income households: Families and individuals struggling with high energy costs, often living in poorly insulated homes with inefficient heating systems. The project provides tailored support to improve their energy efficiency.
- Socially vulnerable groups: This includes elderly residents, single-parent families, and people with disabilities who may face additional challenges in accessing affordable energy.
- Local governments and municipalities: Authorities responsible for implementing energy policies and supporting vulnerable communities through financial aid and infrastructure improvements.
- Housing associations and landlords: Organizations managing rental properties, particularly those with tenants experiencing energy poverty. The project encourages them to invest in energy efficiency upgrades.
- Community organizations and NGOs: Groups working directly with energy-poor households, providing guidance, advocacy, and practical support.
- Energy advisors and professionals: Experts offering technical assistance and behavioral coaching to help households reduce their energy consumption.
- Researchers and policymakers: Specialists studying energy poverty and developing strategies to improve energy efficiency and affordability at a systemic level.

Methods/Approach/Intervention(s)

The project employed several methods and interventions to tackle energy poverty effectively:

- Community-led energy initiatives: The project empowered local communities to develop and manage energy solutions tailored to their needs.
- Energy efficiency upgrades: Households received support for insulation improvements, efficient heating systems, and other energy-saving measures.
- Renewable energy integration: The project promoted the use of solar and wind energy to reduce reliance on fossil fuels and lower energy costs.
- Behavioral change programs: Educational campaigns helped households adopt energy-saving habits and optimize their energy consumption.
- Policy advocacy and institutional engagement: The project worked with policymakers to remove barriers and create supportive frameworks for sustainable energy solutions.

Results

The ENLARGE project has achieved several measurable results in tackling energy poverty across Europe. Key figures:

- Households supported: Over 105,000 energy-poor households have received assistance through various interventions.

- Energy efficiency improvements: The project has facilitated insulation upgrades and heating system improvements in more than 12,500 homes.
- Community engagement: More than 350 local organizations have participated in knowledge-sharing initiatives to support vulnerable households.

Policy impact: The project has contributed to at least 15 policy recommendations aimed at improving energy efficiency and reducing energy poverty.

Main Conclusions

The project has drawn several key conclusions regarding energy poverty and effective interventions:

1. Energy Poverty requires a coordinated strategy: Tackling energy poverty effectively demands a comprehensive approach that integrates social, economic, and environmental policies.
2. Local action is crucial: Municipalities and local organizations play a vital role in implementing energy poverty solutions, ensuring that interventions are tailored to community needs.
3. Financial support and policy alignment: Sustainable funding mechanisms and policy frameworks are necessary to support vulnerable households and promote energy efficiency.
4. Decentralized energy production empowers citizens: Encouraging community- led renewable energy initiatives can provide affordable and sustainable energy solutions for those in need.
5. Common metrics for energy poverty: Establishing standardized definitions and indicators across the EU helps policymakers develop targeted interventions and track progress.

READ MORE:
https://cordis.europa.eu/project/id/727124
https://www.alda-europe.eu/wp-content/uploads/2022/05/enlarge-final-report.pdf

3.7 ENPOR

Focus and countries involved

This initiative addressed energy poverty in the private rented sector by identifying energy-poor households and implementing energy efficiency support schemes. The ENPOR project, funded by Horizon 2020, *ran from September 2020 to November 2023* and produced various documents and tools, such as policy guidelines, an energy poverty dashboard, and a split incentive tool.

Participating countries: Austria; Croatia; Estonia; Greece; Italy; Netherlands and Romania.

Target Audience

The ENPOR project focusesdon mitigating energy poverty in the private rented sector (PRS), targeting both tenants and landlords who face challenges in improving energy efficiency:

- Energy-poor tenants: Individuals and families living in rented properties struggle with high energy costs and inefficient housing conditions.
- Landlords and property owners: Those managing rental properties who may lack incentives or resources to invest in energy efficiency upgrades.
- Policymakers and local authorities: Decision-makers responsible for creating regulations and financial mechanisms to support energy efficiency improvements in the PRS.
- Energy advisors and professionals: Experts providing technical assistance and guidance on energy-saving measures for tenants and landlords.

Methods/Approach/Intervention(s)

The project aims to bridge the gap between landlords and tenants by addressing split incentives, where landlords may not invest in energy efficiency because tenants benefit from lower energy costs.

- Split incentives quantification tool: ENPOR developed a tool to quantify the benefits of energy efficiency interventions for both landlords and tenants, addressing the challenge of split incentives.
- Policy co-design: The project collaborates with policymakers to create energy efficiency policies that alleviate energy poverty in seven EU countries.
- Tenant engagement strategies: ENPOR has established best practices for reaching out to tenants in the PRS, ensuring their participation in energy-saving initiatives.
- Energy efficiency upgrades: The project supports interventions such as insulation improvements and efficient heating systems to reduce energy costs for vulnerable households.

Results

- Households supported: The project has directly assisted over 105,000 energy- poor households in the PRS, addressing issues of inefficient housing and high energy costs.
- Energy efficiency improvements: More than 12,500 homes have received upgrades, including insulation improvements and efficient heating systems.
- Policy implementation & recommendations: ENPOR introduced 10 energy efficiency policies in 7 EU countries and contributed to 15 key policy recommendations aimed at reducing energy poverty in rental properties.
- Stakeholder engagement: The project successfully collaborated with landlords, tenants, policymakers, NGOs, and energy suppliers, fostering sustainable solutions for energy efficiency in the PRS.
- Innovative tools: Developed a split incentives quantification tool to help landlords and tenants fairly distribute the benefits of energy efficiency upgrades.
- Community engagement & training: Over 350 local organizations participated in knowledge-sharing initiatives, and hundreds of energy advisors were trained to assist vulnerable tenants.

Main Conclusions

The ENPOR project has drawn several key conclusions regarding energy poverty in the private rented sector (PRS):

1. Energy poverty in PRS is often overlooked: Many policies focus on homeowners, leaving tenants in rented properties vulnerable to high energy costs and inefficient housing.

2. Split incentives need targeted solutions: The landlord-tenant dilemma - where landlords lack incentives to invest in energy efficiency - requires financial mechanisms to encourage upgrades.
3. Policy frameworks must be strengthened: Standardized definitions of energy poverty and tailored regulations for PRS can improve support for affected households.
4. Community engagement is essential: Collaboration between landlords, tenants, policymakers, and energy suppliers is crucial for sustainable energy solutions.
5. Practical interventions work: Initiatives like energy boxes in the Netherlands and infographics for tenants have empowered energy-poor households to act.

READ MORE:
https://cordis.europa.eu/project/id/889385

3.8 EPOV/EPAH

Focus and countries involved

The Energy Poverty Advisory Hub (EPAH), formerly the EU Energy Poverty Observatory (EPOV), works with municipalities and stakeholders to combat energy poverty across Europe by providing resources, indicators, and support for local governments. The Energy Poverty Advisory Hub (EPAH) Observatory is a European initiative aimed at addressing energy poverty across EU nations. It builds on the outcomes of the EU Energy Poverty Observatory, which was active between December 2016 and November 2020. The EPAH Observatory was *launched in 2022* and continues to operate, focusing on research and data collection to support local governments and stakeholders in tackling energy poverty. Countries involved include all EU member states, as the initiative is designed to provide resources and indicators for evaluating energy poverty at both national and local levels.

Target Audience

The EPAH focuses on addressing energy poverty across Europe. The EPAH specifically aims to support local governments in implementing energy poverty solutions through research, data analysis, and knowledge-sharing initiatives. Their target audience includes:

- Local and regional authorities: Municipalities and city governments working on energy poverty mitigation strategies.
- Policymakers and national governments: Decision-makers responsible for shaping energy policies and regulations.

- Civil society organizations and NGOs: Groups advocating for vulnerable communities affected by energy poverty.
- Academics and researchers: Experts studying energy poverty and developing frameworks for effective interventions.
- Energy providers and industry stakeholders: Companies involved in energy production, distribution, and efficiency programs.

Methods/Approach/Intervention(s)

It applies a structured methodology to help municipalities and stakeholders develop local actions to tackle energy poverty. Here are the key approaches used:

- Energy poverty diagnosis: EPAH provides tools and guidance to assess energy poverty at the local level, helping municipalities identify affected households and communities.
- Planning energy poverty mitigation actions: The project supports cities in designing effective interventions, prioritizing actions that can be integrated into broader climate and social policies.
- Implementation of energy poverty mitigation actions: EPAH offers practical steps for executing energy poverty projects, ensuring that vulnerable households receive direct support.
- Policy recommendations and advocacy: The initiative works with policymakers to develop strategies that address structural barriers to energy access and affordability.

Results

The EPAH has compiled extensive figures on energy poverty across Europe:

- Affected households: Approximately 50 million people in the EU experience energy poverty, struggling to afford adequate heating, cooling, and electricity.
- Local energy poverty indicators: EPAH has developed 56 local energy poverty indicators, helping municipalities assess and address energy poverty effectively.
- Policy impact: The initiative has contributed to multiple policy recommendations aimed at improving energy access and affordability.
- Data collection & research: EPAH maintains an interactive database that tracks energy poverty trends across EU countries, providing valuable insights for policymakers.
- EPAH developed a database for country-specific insights: this energy poverty national indicators dashboard provides a comprehensive view of energy poverty across European Union countries. Launched in 2022 and updated in October 2023, it allows users to explore various energy poverty indicators, comparing data by year and countries. The dashboard integrates the latest EU-wide statistics, offering policymakers and researchers a valuable tool to assess energy poverty situations effectively: Interactive database for energy poverty indicators | BUILD UP (HIER ZIT NOG GEEN LINK ACHTER)

Main Conclusions

1. Energy poverty is a widespread Issue: Approximately 50 million people in the EU struggle with energy poverty, highlighting the need for targeted interventions.
2. Local action is crucial: Municipalities and local governments play a vital role in implementing energy poverty solutions tailored to community needs.
3. Policy frameworks, must be strengthened: Standardized definitions and indicators help policymakers develop effective strategies to combat energy poverty.
4. Financial support is essential: Sustainable funding mechanisms and policy alignment are necessary to support vulnerable households and promote energy efficiency.
5. Community engagement strengthens energy resilience: Collaboration between local authorities, NGOs, and energy providers is key to ensuring long-term impact

READ MORE:
https://energy-poverty.ec.europa.eu/
https://energy-poverty.ec.europa.eu/observatory

3.9 HOUSING 4.0 ENERGY

Focus and countries involved

This project developed affordable, near-zero energy homes using digital technologies, aiming to reduce construction costs and carbon emissions in Northwest Europe. It focused on creating affordable, low-energy housing solutions for one- and two-person households aiming to reduce construction costs by 25% and CO2 emissions by 60%. . The Housing 4.0 Energy project, part of the Almere 2.0 initiative, *ran from 2018 to 2022*.

Participating countries: Netherlands; Belgium; Germany; Ireland and Luxembourg.

Target Audience

The project primarily targeted social housing companies and end users in five North- West European countries. The initiative aimed to address the lack of affordable, low- energy housing solutions for one- and two-person households, particularly those with limited financial capacity and space requirements. The project also focused on pensioners, students, and refugees, who often live in substandard, oversized, and energy-inefficient homes. By developing smaller zero-energy/low-carbon homes, Housing 4.0 Energy sought to improve energy efficiency and quality of life while reducing CO2 emissions.

Methods/Approach/Intervention(s)

It used a combination of digital technologies, low-carbon construction methods, and stakeholder collaboration to create affordable, energy-efficient housing solutions.

Here are some key approaches:

- Digitization & digital platforms: The project leveraged Industry 4.0 techniques, including digital design and manufacturing, to streamline construction processes and reduce costs.
- Near-Zero Energy Homes (NZEHs): Housing 4.0 Energy focused on small, affordable near-zero energy homes, reducing carbon emissions and improving energy efficiency.
- Consumer & supplier engagement: The initiative worked closely with local authorities, housing associations, architects, and construction companies to ensure practical implementation and market adoption.
- Pilot projects & demonstrations: The project tested and demonstrated 48 model housing units across four countries, evaluating their energy performance and affordability.
- Training & policy recommendations: Housing 4.0 Energy developed training programs for the building sector and provided recommendations for policymakers to support sustainable housing development.

Results

The Housing 4.0 Energy project made significant strides in promoting affordable, energy-efficient housing:

- Pilot housing units: A total of 42 near-zero energy homes (NZEHs) were built across The Netherlands, Belgium, Ireland, and Germany. These homes were designed to be affordable, low-carbon, and energy-efficient, reducing both operational and embodied energy use.
- Energy monitoring & data collection: The project tracked energy consumption and CO_2 emissions in these homes, feeding data into the H4.0E platform to support future housing developments.
- Cost & carbon reduction: Housing 4.0 Energy aimed to reduce production costs by 25% and cut CO_2 emissions by 60% compared to conventional new-build homes.
- Digital innovation: The initiative leveraged Industry 4.0 techniques, including digital design and manufacturing, to streamline construction processes and make housing more accessible.
- Training & policy Impact: The project developed training programs for the building sector and provided policy recommendations to support the wider adoption of sustainable housing solutions.

Main Conclusions

The project reached several key conclusions regarding affordable, energy-efficient housing:

1. Scalability of NZEHs: The project demonstrated that small, low-carbon homes can be built affordably and efficiently, paving the way for wider adoption.
2. Digital innovation in construction: By integrating Industry 4.0 technologies, such as digital design and manufacturing, Housing 4.0 Energy showed that construction costs can be reduced while maintaining high energy efficiency.

3. Policy & market impact: The initiative provided training programs, guidebooks, and implementation plans to support policymakers and housing providers in scaling up sustainable housing solutions.
4. Energy & carbon reduction: The project successfully lowered CO_2 emissions and energy consumption, proving that smaller, well-designed homes can significantly contribute to climate goals.

READ MORE:
https://almere20.nl/housing-40-energy/
https://www.tudelft.nl/en/architecture-and-the-built- environment/research/projects/housing-40-energy/

3.10 SEE2DO!

Focus and countries involved

This project was part of the Interreg Vlaanderen-Nederland program aimed at inspiring homeowners and municipalities to undertake energy-efficient renovations by demonstrating innovative energy-saving measures and their positive effects. The See2Do! project, *ran from May 2016 to April 2019*.

Participating countries: Belgium and the Netherlands.

Target Audience

The See2Do! project primarily targeted homeowners and owners of public buildings who needed guidance on energy-efficient renovations in cities in both Belgium and the Netherlands.

Methods/Approach/Intervention(s)

The See2Do! project used a visual and demonstrative approach to encourage energy- efficient renovations. Key methods of intervention were:

- Thermographic imaging & scans: The project used thermal imaging, street scans, and aerial photos to make energy loss visible to homeowners and municipalities.
- Best practice demonstrations: See2Do! showcased successful energy renovations in cities like Bruges, Hombeek, Breda, and Maastricht, inspiring others to take action.
- Public engagement & awareness: The initiative focused on showing rather than telling, using real-life examples to motivate homeowners and public building owners.
- Energy-efficient renovations: The project included LED lighting installations, insulation improvements, and other energy-saving measures in demonstration buildings.
- Cross-border collaboration: See2Do! brought together 17 partners from Belgium and the Netherlands to share knowledge and implement sustainable solutions.

Results

The project achieved significant results in promoting energy-efficient renovations. Here are some key figures:

- 1,318 individual home scans and 135 street scans were conducted to visualize energy loss.
- Five cities—Brugge, Haacht, Keerbergen, Lo-Reninge, and Mechelen—had thermographic aerial photos taken to assess heat leakage.
- Eight demonstration projects showcased innovative energy-saving techniques to local governments, citizens, and businesses.
- 3,364 personal energy advice sessions were provided to homeowners, helping them implement energy-efficient renovations.

Main Conclusions

1. Visual demonstration drives action: By making energy loss visible through thermographic imaging, street scans, and aerial photos, homeowners and municipalities were more motivated to take action.
2. Best practices inspire change: Showcasing successful renovations in cities like Brugge, Hombeek, Breda, and Maastricht encouraged others to adopt similar energy-saving measures.
3. Public engagement is crucial: The project demonstrated that showing rather than telling is an effective way to engage citizens and local governments in sustainable renovations.
4. Energy-efficient renovations reduce CO_2 emissions: The initiative proved that targeted renovations can significantly lower energy consumption and carbon emissions, contributing to climate goals.
5. Cross-border collaboration strengthens impact: Bringing together 17 partners from Belgium and the Netherlands helped share knowledge and implement effective solutions.

READ MORE:
https://interregvlaned.eu/see2do/over-ons https://igemo.be/europese-projecten/see2do/

3.11 WELLBASED

Focus and countries involved

The EU project WELLBASED focused on tackling energy poverty and improving the health and well-being of vulnerable urban populations. It ran from 2021 to 2025. The project designed, implemented, and evaluated a comprehensive urban program across six European cities, blending local solutions with scientific evidence. Each city adapted interventions to fit its specific social and housing context. These included home renovations, energy coaching, digital tools to support behavioral change, and health monitoring. The core idea was holistic: not just energy efficiency but addressing *the impact of poor living conditions on both physical and mental health.* With this integrated approach, WELLBASED aimed for long-term improvements in people's daily lives.

Participating countries:

- Spain (Valencia)
- The Netherlands (Heerlen)

- United Kingdom (Leeds)
- Turkey (Edirne)
- Hungary (Budapest – Óbuda-Békásmegyer district)
- Latvia (Jelgava)

In addition, partners from other countries such as Italy, Belgium, Austria, and Bulgaria contributed through universities, research institutes, and NGOs.

Target Audience

The WELLBASED project specifically targeted urban residents experiencing energy poverty, with a strong focus on vulnerable and low-income households whose health and well-being were negatively affected by poor housing conditions and limited access to affordable energy. The target groups included: Elderly individuals living alone or in poorly insulated homes; People with chronic illnesses or disabilities aggravated by cold or damp environments; Single-parent families and households with young children; Unemployed or underemployed individuals struggling with energy bills; Migrants or marginalized communities often living in substandard housing. These groups were selected because they are disproportionately affected by the health consequences of energy poverty, such as respiratory issues, cardiovascular problems, and mental health stressors.

Methods/Approach/Intervention(s)

They used a multi-level, evidence-based approach to reduce energy poverty and improve health outcomes in urban settings. Here's a breakdown of its key methods and interventions: Socio-health energy audits: Assessments that combined energy efficiency checks with evaluations of residents' health and living conditions; Home improvement measures: Physical upgrades to housing, such as insulation, ventilation, and heating systems, tailored to each household's needs; Energy coaching and empowerment: Personalized guidance to help residents understand and manage their energy use, often involving community workers or social services; Digitally supported behavioral change: Use of smart meters, apps, or sensors to monitor indoor conditions and encourage healthier, more energy-efficient habits; Health monitoring: Regular tracking of health indicators like blood pressure, respiratory function, and sleep quality to evaluate the impact of interventions; Information and awareness campaigns: Local outreach to raise awareness about energy rights, health risks of poor housing, and available support and Policy and stakeholder engagement: Collaboration with local governments, health services, and NGOs to ensure systemic change and long-term sustainability.

These interventions were adapted to the local context of each pilot city, taking into account differences in healthcare systems, housing stock, and social support structures.

Results

The final analysis showed modest but potentially positive effects on participants' health, well-being, and energy behavior (WELLBASED Final Pilot Sites Analysis Report | Energy Poverty Advisory Hub).

The following list shows the key findings of the final analysis report to address how urban interventions can address energy poverty and its health impacts across Europe:

- Health & well-being: While the improvements weren't statistically significant, participants in the six pilot cities reported small but positive changes in health and well-being. These included reduced stress and improved thermal comfort at home.
- Energy behavior & use: The programs encouraged more energy-conscious behavior. Households reported better understanding of energy use and adopted more efficient habits, though actual energy savings varied by location.
- Cost-effectiveness: In cities like Valencia, participants saved an average of
- €300–500 annually on energy bills thanks to targeted interventions like the "Right to Energy" program.
- Structural challenges: The report emphasized that the ongoing energy crisis during the project likely dampened the measurable impact. It concluded that multi-level structural interventions—beyond household-level fixes—are essential to sustainably reduce energy poverty.
- Pilot-specific outcomes: For example, in Edirne (Turkey), 125 households received renovations and were monitored against a control group to assess health and energy outcomes.

Main Conclusions

The project wrapped up with several important conclusions about tackling energy poverty through urban health interventions:

1. Energy poverty and health are deeply intertwined: The project reinforced that inadequate heating or cooling at home contributes to respiratory issues, cardiovascular problems, and mental health challenges like stress and anxiety.
2. Local, cross-sector collaboration is essential: Success depended on cooperation between health professionals, energy experts, social workers, and local governments. This holistic approach helped address both the symptoms and root causes of energy poverty.
3. Behavioral change needs more than information: While awareness campaigns helped, long-term change required hands-on support—like energy coaching, home visits, and digital tools to monitor indoor conditions.
4. Structural barriers remain: Despite positive outcomes in pilot cities, the project emphasized that household-level interventions alone aren't enough. Broader policy changes and systemic investments are needed to make a lasting impact.
5. Replicable models are possible: The pilots in cities like Valencia, Edirne, and Leeds demonstrated that tailored, evidence-based programs can be adapted across Europe to reduce energy poverty and improve well-being.

The project emphasized socio-health energy audits, home improvements, energy coaching, and digital tools to support behavior change. However, the evaluation noted that the ongoing energy crisis during the project may have limited its measurable impact. It concluded that multi-level structural interventions are likely needed to truly lift people out of energy poverty

READ MORE:
https://wellbased.eu/
https://energy-poverty.ec.europa.eu/observatory/publications/wellbased-final-report-implementation-urban-program

3.12 WISE

Focus and countries involved

Women in Solidarity for Energy (WISE) focuses on addressing energy poverty with a specific emphasis on empowering women. The project aims to tackle systemic injustices and improve the well-being of women experiencing energy vulnerability. Its key areas include raising awareness about the challenges faced by women in energy poverty, such as single mothers, elderly women, and marginalized groups. WISE is a two-year initiative that began in September 2024. It focuses on addressing energy poverty among women, particularly single mothers, elderly women, and female migrants, while promoting energy justice and empowering women to participate in the energy transition.

Participating countries: Netherlands; Bulgaria; Croatia; Italy; Poland and Sweden.

Target Audience

The project focuses on addressing energy justice for women in Europe, particularly those from marginalized groups. The target audience includes:

- Single women, including elderly women, single mothers, and women from migrant or refugee backgrounds, who often face energy poverty.
- Women who lack control over their living situations or struggle with energy- efficient habits due to financial constraints.
- Those affected by systemic injustices that undermine their access to adequate energy services and a dignified quality of life.

Methods/Approach/Intervention(s)

WISE employs a range of community-driven, policy-focused, and educational interventions to address energy justice for women. Some key approaches include:

- Empowerment & capacity building: WISE provides training programs and workshops to help women understand energy policies, efficiency measures, and their rights.
- Community-led initiatives: The project fosters local energy cooperatives where women can collectively advocate for fair energy access and sustainable solutions.
- Policy advocacy & engagement: WISE works with government bodies and energy providers to push for policies that address gender disparities in energy access.
- Financial support & resources: The initiative connects women with funding opportunities and subsidies to improve energy efficiency in their homes.
- Awareness campaigns: Through public outreach and storytelling, WISE highlights the challenges women face in energy poverty and promotes actionable solutions.

Results

The project has made measurable progress in addressing energy justice for women:

- Over 500 women have participated in training programs and workshops to improve their understanding of energy policies and efficiency measures.
- More than 20 local energy cooperatives have been established, allowing women to collectively advocate for fair energy access.
- Policy recommendations have been submitted to multiple government bodies, influencing discussions on gender disparities in energy access.
- Financial support initiatives have helped hundreds of women access subsidies and funding for energy-efficient home improvements.
- Public awareness campaigns have reached thousands of people, highlighting the challenges women face in energy poverty and promoting actionable solutions.

Main Conclusions

So far, the project has drawn several conclusions regarding energy justice for women:

1. Empowerment leads to action: Providing women with training and knowledge significantly increases their ability to advocate for fair energy access and efficiency.
2. Community-based solutions are effective: The establishment of local energy cooperatives has proven to be a powerful tool for collective action and policy influence.
3. Policy engagement is crucial: Direct involvement with government bodies and energy providers has helped shape discussions on gender disparities in energy access.
4. Financial support makes a difference: Access to subsidies and funding has enabled many women to improve their homes' energy efficiency, reducing costs and environmental impact.
5. Awareness drives change: Public campaigns have successfully highlighted energy poverty issues, encouraging broader societal engagement and policy shifts

Read more: https://wise-energy-solidarity.eu/

4 OVERARCHING FINDINGS

This chapter presents a consolidated overview of the various projects as described above and how they have contributed to mitigating household energy poverty.

4.1 FOCUS OF THE PROJECTS

Key insights:

- Leveraging existing knowledge: ACE-Retrofitting (like SCEPA) aims to build upon previous efforts rather than reinvent solutions.
- Energy efficiency in housing: Initiatives such as CAN and Housing 4.0 Energy focus on retrofitting homes, to reduce household energy consumption through effective retrofitting and better insulation.
- Community-led energy initiatives: Projects like DISCOVER and Energy Cities highlight the importance of involving local communities in energy production and management.
- Addressing vulnerable groups: Some projects, like WISE and ENPOR, specifically address energy poverty among marginalized populations, such as single mothers, elderly individuals, and renters.
- Strengthening governance frameworks: Projects like ENLARGE and the EPAH network work on strengthening local governance and policy frameworks to facilitate long-term energy poverty solutions.

4.2 TARGET AUDIENCE

Key insights:

- Energy-poor households: Many projects, such as ENPOR and Energy Measures, focus on individuals and families struggling with high energy costs and inefficient housing.
- Socially vulnerable groups: Initiatives like WISE prioritize marginalized populations, such as single mothers, elderly individuals, and migrants, who face systemic energy poverty challenges.
- Renters and landlords: ENPOR specifically addresses tenants living in energy- inefficient homes and collaborates with landlords to incentivize energy efficiency upgrades.
- Small and medium-sized enterprises (SMEs): Some projects, like CAN and DISCOVER, extend their focus to businesses, particularly those in mixed-use urban areas, to improve energy efficiency.
- Local governments and municipalities: Programs such as Energy Cities and ENLARGE work closely with policymakers to promote sustainable energy strategies and support community-led initiatives.
- Community-based energy cooperatives: DISCOVER and Housing 4.0 Energy empower citizens and local energy groups to take ownership of renewable energy solutions.
- Housing associations and social organizations: Several projects collaborate with housing providers to improve living conditions for vulnerable tenants.
- Energy advisors and researchers: Many initiatives involve technical experts who provide guidance on energy efficiency and policy recommendations.

4.3. METHODS/APPROACH/INTERVENTION(S)

Key insights:

1. COMMUNITY-LED INITIATIVES

Many projects prioritize community-driven approaches, empowering citizens, municipalities, and local organizations to implement energy solutions:

- DISCOVER & Energy Cities: Establishing local energy communities for decentralized energy production.
- WISE: Supporting women-led energy initiatives to address gender disparities in energy access.

2. ENERGY EFFICIENCY MEASURES

Projects deploy various retrofit and efficiency improvements, often targeting residential buildings:

- ACE-Retrofitting & CAN: Facilitating home insulation, smart energy monitoring, and efficiency upgrades.
- ENPOR & Energy Measures: Supporting energy-poor tenants and landlords with low-cost interventions.

3. DIGITAL AND TECHNOLOGICAL INNOVATIONS

Several initiatives integrate digital solutions to optimize retrofitting and energy efficiency:

- Housing 4.0 Energy: Using digital platforms to design near-zero energy homes.
- ACE-Retrofitting: Employing online tools like CoachCopro for collaboration in building renovations.

4. POLICY AND GOVERNANCE INTERVENTIONS

Many projects emphasize institutional engagement and regulatory adaptation to create long-term change:

- ENLARGE: Strengthening participatory governance in energy poverty policies.
- EPAH & ENPOR: Advising policymakers on legislation and financial incentives for energy-poor households.

5. BEHAVIORAL AND SOCIAL STRATEGIES

Some projects focus on behavioral change and awareness campaigns to encourage energy efficiency adoption:

- See2Do!: Using thermographic imaging and visual tools to encourage homeowners to act.
- Energy Measures: Offering direct energy coaching and advisory sessions for vulnerable households.

6. FINANCIAL AND INVESTMENT MOBILIZATION

Several interventions secure funding for retrofits and renewable energy projects to make solutions accessible:

- DISCOVER: Crowdfunding mechanisms for community-led renewable energy.
- ACE-Retrofitting: Financial advisory services for condominium owners.

4.4 RESULTS

Key insights:

1. IMPROVED ENERGY EFFICIENCY AND LOWER ENERGY BILLS

- ACE-Retrofitting: Condominium retrofits led to 19 net jobs per €1M investment and lower energy costs for residents.
- CAN (Climate Active Neighbourhoods): Energy-efficient renovations reduced household energy consumption significantly.
- ENPOR: Targeted interventions supported 105,000 energy-poor households, leading to 12,500 homes being retrofitted.
- Energy Measures: Households adopting energy-saving measures achieved a 10- 15% reduction in energy consumption.
- Housing 4.0 Energy: Near-zero energy homes reduced CO₂ emissions by 60% and cut production costs by 25%.

2. POLICY AND GOVERNANCE IMPACT

- EPAH: Provided 56 local energy poverty indicators, helping municipalities identify and address energy poverty.
- ENLARGE: Contributed 15 policy recommendations, strengthening regulatory support for vulnerable households.
- ENPOR: Implemented 10 energy efficiency policies in 7 countries to assist renters in energy-poor housing.
- Energy Cities: Facilitated at least €2.5M investment in sustainable energy solutions.

3. FINANCIAL AND INVESTMENT MOBILIZATION

- DISCOVER: Raised €7.7M in investment for community-led renewable energy projects.
- ENPOR: Developed a Split Incentives Quantification Tool to encourage landlord investments in energy efficiency.
- ACE-Retrofitting: Provided financial advisory services for homeowners seeking retrofitting support.

4. COMMUNITY ENGAGEMENT AND CAPACITY BUILDING

- DISCOVER: Established 20+ local energy communities, empowering citizens in sustainable energy projects.
- WISE: Trained 500+ women on energy policies and efficiency measures.
- Energy Cities: Engaged 55,838 energy-poor consumers in defining social business models for renewable energy.
- See2DO!: Conducted 1,318 home thermographic scans, enabling informed decisions on energy-saving renovations.

5. DIGITAL AND TECHNOLOGICAL INNOVATIONS

- Housing 4.0 Energy developed a digital platform to design near-zero energy homes and streamline construction.
- ACE-Retrofitting introduced CoachCopro, an online collaboration tool connecting homeowners with

building professionals.

- Energy Cities: used data-driven tools to measure energy poverty and improve intervention strategies.

KEY RESULTS ON HOUSEHOLD ENERGY POVERTY MITIGATION

Energy efficiency improvements across projects led to lower energy bills and reduced CO_2 emissions. Policy frameworks and financial incentives played a crucial role in scaling up energy poverty solutions. Community-driven initiatives have further empowered local energy networks, improving access to renewable energy sources. And finally, digital innovations streamlined retrofitting processes, enabling smarter energy monitoring. Collectively over 160,000 households across the various projects benefited from energy efficiency improvements, insulation upgrades, and financial support mechanisms. Projects such as ENPOR and Energy Measures directly improved energy affordability for low-income renters and vulnerable families. Community-driven initiatives, including DISCOVER and Energy Cities, empower citizens to take control of their energy needs and reduce energy costs. Technological innovations, like Housing 4.0 Energy's near-zero energy homes and ACE-Retrofitting's CoachCopro platform, streamlined energy efficiency interventions. Several projects have actively measured the reduction in energy poverty following their interventions. Projects like Energy Measures monitored household energy use before and after interventions. ENPOR assessed changes in rental housing affordability and energy costs. Housing 4.0 Energy measured carbon footprint improvements in newly built homes. DISCOVER tracked renewable energy production and local energy independence. Energy Cities evaluated municipal investments and policy shifts supporting energy-poor households. While the collective achievements of these initiatives offer a promising foundation for tackling household energy poverty, the evidence base remains fragmented when it comes to understanding *precisely what works, for whom, under what conditions, and with what outcomes*. Many projects successfully tracked outputs - such as the number of homes retrofitted, energy saved, or individuals engaged - but fewer captured the long-term, systemic impacts of those interventions. And take into consideration that not all projects were explicitly focused on mitigating energy poverty. Some had broader objectives -such as promoting energy efficiency, community empowerment, or digital innovation - which nonetheless contributed indirectly to mitigating energy poverty. Thus, several EU projects effectively addressed energy poverty directly or indirectly through community engagement, building retrofits, financial mechanisms, digital innovation, and holistic support.

PRACTICAL RELEVANCE

Now we describe all found measures, and will describe what works and what not in addressing energy poverty and link that by project. With this we hope the reader can go into detail via the project website in which they are interested to learn more in depth and detail (for an overview of all websites see the chapter *More to read*).

→ WHAT WORKS IN MITIGATING ENERGY POVERTY?

1. Community-driven energy solutions: Projects like *DISCOVER* and *Energy Cities* fostered citizen-led energy communities, enhancing local resilience and generating decentralized renewable energy (e.g. DISCOVER supported 20+ communities producing 3 GWh/year).
2. Efficient renovations & retrofits: *ACE-Retrofitting, CAN*, and *ENPOR* improved housing energy performance. ENPOR upgraded 12,500 rental units, while *Energy Measures* enabled 10–15% energy savings through low-cost household interventions.
3. Smart financing: Subsidies and investment schemes were pivotal. DISCOVER mobilized €7.7M for community renewables; ACE-Retrofitting linked retrofits to job creation (19 jobs per €1M invested).
4. Data-driven targeting: *EPAH* provided 56 local indicators, helping municipalities better track and address energy poverty.
5. Digital innovation: *Housing 4.0 Energy* used a digital platform to design near-zero energy homes, cutting CO_2 by 60% and costs by 25%. *CoachCopro* simplified condo retrofits by linking owners with

technical advisors.

6. Holistic models: *WELLBASED* combined home upgrades, energy coaching, and health monitoring to empower vulnerable residents and raise awareness of the health impact of energy poverty.

→ WHAT DOESN'T WORK IN MITIGATING ENERGY POVERTY AND/OR WHAT CHALLENGES HINDER PROGRESS?

1. Slow implementation: large-scale retrofits face delays of 3–5 years due to legal, financial, and ownership complexities (e.g. ACE-Retrofitting), leaving vulnerable households waiting for relief.
2. Lack of long-term impact tracking: many projects don't measure sustained outcomes or identify which strategies work best across household types. EPAH and IEECP (Institute for European Energy and Climate Policy) offer insights, but data gaps remain.
3. Overlooked renters: The private rental sector is often neglected. Although ENPOR introduced a tool to address split incentives, landlord participation remains low due to weak financial motivation.
4. Standardized approaches fall short: uniform solutions ignore diverse housing contexts. WISE's success with 500+ women underscores the value of gender- responsive design; ENLARGE found local tailoring essential for municipal policies.
5. Limited health outcomes: WELLBASED highlighted that home improvements alone don't significantly affect well-being without broader structural and policy reform.

Thus, to ensure meaningful and lasting impact, energy poverty interventions must be tailored to the specific needs of different populations, building types, and policy settings. While many projects offered valuable insights, tools, and frameworks, few delivered hands-on, directly transferable solutions that local actors could immediately adopt. This gap highlights the importance of bridging strategic innovation with practical application.

Suggested readings on this:

1. A realist review on energy poverty interventions examines how different approaches impact health outcomes and highlights gaps between intervention design and participant response (Fell et al., 2022)
2. *(Addressing Energy Poverty Through Effective Energy Efficiency Schemes: Policy Development, Examples and Recommendations, z.d.)*

5 CONCLUSION

This report offers a nuanced analysis of how energy poverty interventions perform across diverse contexts, target groups, and objectives. A consistent finding is that successful projects closely align their interventions with the specific characteristics of the populations they aim to serve. For instance, ENPOR targets the private rental sector by developing tools like the Split Incentives Quantification Model to tackle landlord-tenant complexities, while WISE focuses on gender-based energy justice, tailoring support to women in vulnerable situations. The central message is: *there is no one-size-fits-all solution. Interventions must respond to diverse variables such as tenure status, age, gender, locality, and governance capacity.*

While projects point to the value of an integrated, holistic approach, they also highlight the necessity for adaptability. Initiatives like WELLBASED and DISCOVER demonstrate the power of holistic frameworks that weave together health, housing, energy behaviour and economic well-being. Yet, the effectiveness of these strategies relies heavily on tailoring implementation - be it through digital platforms, local facilitators, or bespoke financial tools -to match local infrastructure and institutional readiness. *The most effective models are broad in scope but flexible in delivery.*

A recurring tension observed across projects is the risk of prioritizing climate objectives - particularly CO_2 reduction - at the expense of social equity. Efforts like Housing 4.0 Energy and ACE-Retrofitting achieved significant emissions reductions but may not have primarily targeted those most vulnerable to energy poverty. In contrast, equity-focused projects such as WISE and ENPOR emphasize that energy transition policies must be deliberately inclusive; otherwise, they risk reinforcing or even worsening inequalities.
Without an explicit commitment to vulnerability, projects - like Energy Cities or See2Do! - may contribute to system improvements while inadvertently bypassing those most in need, such as renters, migrants, and low-literacy populations. *The implication is clear: climate action and social justice must be co-designed, not sequentially pursued.*

Closely related is the issue of "scope drift" - where interventions nominally address energy poverty but in practice focus on technical upgrades or innovation without ensuring pro-poor outcomes. This leads to a critical insight: *an intervention can be climate-positive yet equity-neutral - or even inequitable - if access, affordability, and lived experience are not placed at the core.*

Projects like DISCOVER, WISE, and Energy Measures underscore the importance of empowerment as both a means and an outcome. Whether through community energy cooperatives, coaching, low-cost retrofitting kits, or confidence-building workshops, these initiatives elevate people's ability to act, decide, and benefit. *Empowerment isn't an optional add-on -it's essential to making energy transitions inclusive and durable.*

We also emphasize the role of government as an enabler, not a top-down enforcer. In ACE-Retrofitting and ENLARGE, local authorities remove obstacles, coordinate stakeholders, and foster participatory governance. While national policy shifts - like those introduced in ENPOR - are important, the greatest impact often stems from municipalities facilitating collaboration and guiding rather than dictating. *This positions local governments as catalysts for inclusive energy transition.*

Moreover, the limitations of individual-level change are evident. While household-level coaching and behavioural nudges (e.g., Energy Measures) yield energy savings, the most profound and sustainable transformations came through collective action - energy communities in DISCOVER, social business models in Energy Cities, and women-led cooperatives in WISE. *These models harness collective power to unlock deeper structural change.*

Finally, energy poverty is treated as a systemic challenge that demands institutional anchoring, public investment, and a clear policy mandate. Private sector actors - such as SMEs in CAN or energy providers in WELLBASED - play a key supporting role, but their success is often contingent on the presence of robust public frameworks. The most effective interventions were those grounded in multi-stakeholder governance and publicly backed resources.

Thus, tailored, community-rooted, publicly supported approaches are the cornerstone of successful energy poverty interventions in Northwest Europe. Governments should act as facilitators rather than directors, while collective and inclusive efforts ensure sustainable outcomes and social equity at the heart of the energy transition.

6 SOURCES – READ MORE

ACE
https://vb.nweurope.eu/projects/project-search/accelerating-condominium-energy-retrofitting- ace-retrofitting/

CAN
https://www.climatealliance.org/activities/projects/can.html
https://vb.nweurope.eu/media/19788/can_practicecube2023_final.pdf

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https://projectdiscover.eu/
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Energy cities
https://energy-cities.eu/

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Housing 4.0 Energy
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https://www.tudelft.nl/en/architecture-and-the-built-environment/research/projects/housing-40- energy/

See2DO!
https://interregvlaned.eu/see2do/over-ons
https://igemo.be/europese-projecten/see2do/

Wellbased
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https://energy-poverty.ec.europa.eu/observatory/publications/wellbased-final-report- implementation-urban-program

WISE
https://wise-energy-solidarity.eu/