



SOCIALWATT

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CONNECTING

OBLIGATED PARTIES

TO ADOPT INNOVATIVE SCHEMES TOWARDS

ENERGY POVERTY ALLEVIATION

D1.2

Brief on actions and schemes to consider for tackling energy poverty

April 2020



The SocialWatt project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 845905

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PREFACE

SocialWatt will develop and provide **utilities** and **energy suppliers** with appropriate tools for effectively engaging with their customers and working together towards **alleviating energy poverty**. SocialWatt will also enable obligated parties under **Article 7** of the Energy Efficiency Directive across Europe to develop, adopt, test and spread **innovative energy poverty schemes**.

SocialWatt will contribute to the following three main pillars:

- 1 Supporting utilities and energy suppliers contribute to the fight against energy poverty through the use of **decision support tools**.
- 2 Bridging the gap between energy companies and social services by promoting collaboration and implementing **knowledge transfer** and **capacity building activities** that focus on the development of schemes that invest in Renewable Energy Sources / Energy Efficiency and alleviate energy poverty.
- 3 **Implementing** and **replicating** innovative schemes to alleviate energy poverty.



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ISPE DC	ISPE PROIECTARE SI CONSULTANTA SA	RO
EDF	ELECTRICITE DE FRANCE	FR
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ESB	ELECTRICITY SUPPLY BOARD	IE
PPC	PUBLIC POWER CORPORATION S.A.	EL
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CONNECTING OBLIGATED PARTIES TO ADOPT INNOVATIVE SCHEMES TOWARDS ENERGY POVERTY ALLEVIATION

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1 INTRODUCTION

SocialWatt, a project funded by the Horizon 2020 programme, aims to enable utilities and energy suppliers to develop, adopt, test and spread innovative schemes to alleviate energy poverty across Europe. The project enables energy suppliers to build their own capacity and use the SocialWatt tools developed to efficiently target energy poor households, design innovative schemes and monitor their effectiveness.

This report aims to support the development of sustainable and effective schemes to tackle energy poverty by identifying innovative schemes and actions that can be tailored to tackle energy poverty. As such, different schemes have been reviewed and numerous stakeholders have been actively engaged to help identify robust schemes that may have a considerable economic and social impact on energy poverty.

This report builds on previous SocialWatt outputs. In particular, the “Report on the Status Quo of Energy Poverty and its Mitigation in the EU” (D1.1). Nevertheless, this reports also focuses on identifying innovative schemes and schemes not yet implemented in pilot countries that are potentially interesting to consider. Therefore, meetings with stakeholders have been fundamental in identifying innovative schemes.

2 METHODOLOGY

2.1 SCOPE OF THE STUDY

The schemes identified in this report come partly from schemes and actions identified in previous SocialWatt outputs, supplemented by additional schemes identified from other EU related projects and new schemes being discussed within the framework of SocialWatt.

2.2 CRITERIA FOR ANALYSIS

An analysis grid has been developed to help evaluate and compare schemes identified and understand better the innovation elements these introduce. More specifically, the following information has been collected for all schemes considered:

- › Involved parties, for example whether the scheme involves public and private sector partners;
- › Stakeholders, for instance whether the scheme involves different sectors of activity, such as social services, financial institutions, the energy and building sectors;
- › Target groups, in particular the number of households the scheme targets (large or small);
- › Eligibility criteria, including different types of eligibility criteria, and eligibility threshold values;
- › Scope of the scheme, in particular whether the scheme is broad or restricted, and the type of sectors that it covers (e.g. housing only or housing and mobility);
- › Method for identifying energy poor households targeted by the scheme (e.g. automatic identification, requests by households, SocialWatt partners identifying households);
- › Types of innovative schemes, for instance whether these include preventive measures or curative measures;
- › Depth of support to households and whether the scheme has the ability to sustainably reduce the number of energy poor households;
- › Accompanying (support) measures of households on a one-off or long-term basis (e.g. a few months, one year);
- › Funding characteristics, for instance at what point in the course of the scheme do households receive financial support (at the beginning, each month, at the end of the scheme), type of financial support (e.g. grant, loan);
- › Degree and depth of SocialWatt partner involvement (mandatory / voluntary, financing / human resources etc.);
- › Success conditions and replicability potential.

2.3 THE ANALYSIS GRID

This section presents in more detail the information that has been collected per scheme to support the quantitative analysis of schemes.

2.3.1 DESCRIPTION OF THE SCHEME

The key characteristics of each scheme have been collected, and in particular, whether the scheme has been implemented so far, and if it has, the name of the scheme, the country it has been implemented in, the start and end date of the scheme etc.

2.3.2 SCHEME PROVIDER

Information on the provider of each scheme has been collected, and in particular, the name and type of provider, for example, whether this is a national authority, a local authority, a utility, an energy community, a social landlord, an association or an NGO etc.

2.3.3 ORGANISATIONS INVOLVED IN THE SCHEME

For each scheme, the involvement of different type of organisations has been assessed, for example public, private, charity/NGO etc. Emphasis has also been given on the activity sectors these operate in, including the energy, social, housing and financial sector.

2.3.4 TARGETED HOUSEHOLDS

Information on the type of households each scheme targets has been collected. Emphasis has been given on the:

- › Eligibility criteria that households must meet to participate, in particular, in terms of income, energy bill levels, energy consumption levels, and access to specific programmes;
- › The geographical scope of the scheme, i.e. whether it targets households at a national, regional, district, municipal or other level;
- › The number of households that are eligible, for example whether this is limited; and
- › The types of households that the scheme targets, for example single or multi-family housing, private or social housing.

2.3.5 MEASURES AND ACTIONS COMPRISING THE SCHEME

Information has been collected on the type of measures/actions included in schemes. In particular, for each scheme the following information has been assessed:

- › Whether actions/measures are preventative or curative;
- › Whether actions/measures focus on providing information/advice to households, and in what form;
- › Whether actions/measures promote the use of energy efficient equipment;
- › Whether actions/measures provide aid to households for paying energy bills
- › The type of actions/measures comprising each scheme (e.g. adding insulation, putting domestic solar hot water (DSHW), replacing household appliances with more efficient ones, replacing lighting, windows, and space heating systems).

Measure type :		<input type="checkbox"/> Curative	<input type="checkbox"/> Preventive
Assistance with household identification :			
Information/Advices :			
Energy Performance certificate (EPC) :		<input type="checkbox"/>	
Training :		<input type="checkbox"/>	
Metering :		<input type="checkbox"/>	
Other :		<input type="checkbox"/>	
<i>To complete :</i>			
Provide more efficient energy equipment :		<input type="checkbox"/> purchase	<input type="checkbox"/> rental
Specify the type of equipment :		<input type="checkbox"/> free of charge	
		<i>(to complete)</i>	
Aid for payment of energy bills :		<input type="checkbox"/>	
Energy improvement actions :		<input type="checkbox"/>	
insulation :		<input type="checkbox"/>	
windows :		<input type="checkbox"/>	
space heating :		<input type="checkbox"/>	
lighting :		<input type="checkbox"/>	
DSHW :		<input type="checkbox"/>	
appliances :		<input type="checkbox"/>	
other :		<input type="checkbox"/>	
<i>To complete :</i>			
e-mobility (electric or hybrid vehicle) :		<input type="checkbox"/>	
e-bike :		<input type="checkbox"/>	
cooling :		<input type="checkbox"/>	
photovoltaic :		<input type="checkbox"/>	

The different types of energy products that schemes cover have been assessed, including amongst other: electricity, gas, fuel oil, biomass, LPG, coal, district heating, solar energy, renewable energy sources,

The incentives provided by each scheme have been assessed, in particular, in terms of the type of incentives provided (for example, grant/cash, soft loan, pre-financing bill, reduce bill, and social tariff) and how these are administered (e.g. on demand and automatically).

One of the key challenges faced when developing a scheme is how this will be funded. Therefore, information on how each scheme is funded has been collected and evaluated. In particular, whether the scheme is funded from state, regional or municipal budget, dedicated tax, a charity/NGO, a bank or another financial institution or a utility etc.

Furthermore, the participation of different types of organisations in each scheme is further assessed, in order to understand the form of participation (i.e. mandatory or voluntary) and the type of involvement (for example, providing human resources or funding).

For each scheme, interactions with other schemes and programmes have been identified and described.

For each scheme, an assessment has been made on whether energy savings are fully, partly or not eligible under Article 7 of the Energy Efficiency Directive (EED).

Information has also been collected on whether the schemes have been evaluated, as well

as difficulties faced when implementing each scheme, success conditions for the successful implementation of each scheme and the replicability potential of each scheme.

Figure 2. Information collected on the evaluation and impact of each scheme

Programme evaluated ?	<input type="checkbox"/> yes	<input type="checkbox"/> no
If YES, evaluation criteria :		
<input type="checkbox"/> financial (costs/profitability...)	<input type="checkbox"/> energy savings	<input type="checkbox"/> comfort
	<input type="checkbox"/> health	<input type="checkbox"/> number of beneficiaries
Difficulties/ To progress :	(to complete)	
Success conditions :	(to complete)	
Cost optimization conditions :	(to complete)	
Replicability :	<input type="checkbox"/> yes	<input type="checkbox"/> no
If YES, replicability conditions :	(to complete)	

2.3.12 INNOVATION

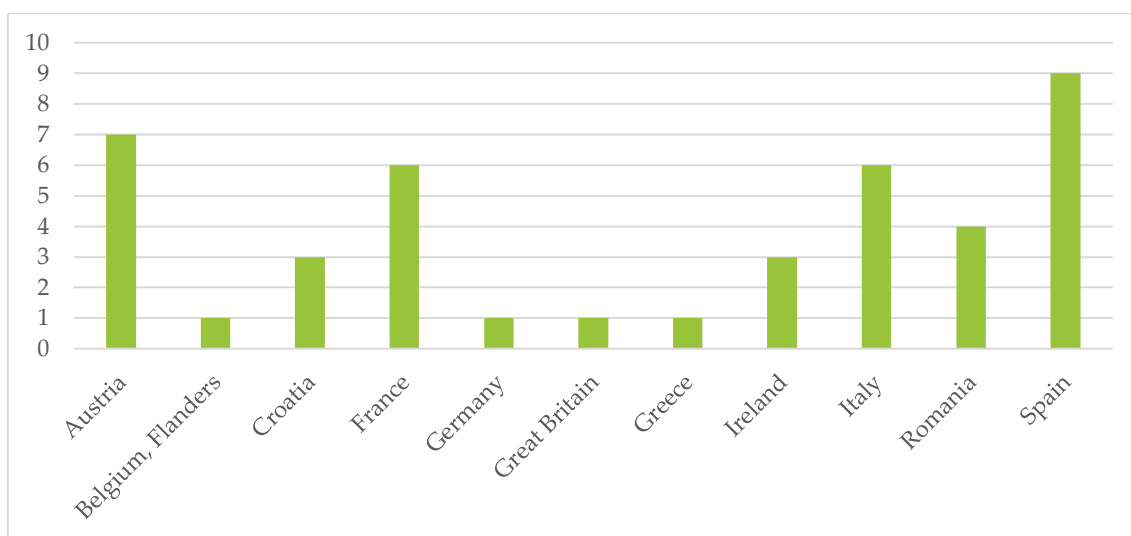
Finally, for each scheme, information has been collected on why this is considered an innovative scheme, for example what is the innovation it introduces or why this is considered innovative in a specific country context.

3 QUANTITATIVE ANALYSIS

The figure below presents the number of schemes analysed per country. A total of 42 schemes have been analysed.

However, it should be noted that the schemes analysed are not statistically representative of the schemes that will be implemented per country, but reflect the type of schemes that are considered interesting and replicable by participating utilities in each country. The schemes have been selected based on the business priorities of participating utilities and their innovation potential.

Figure 3. Number of schemes per country



3.1 DESCRIPTION OF THE SCHEME

The figures below present the start date, the end date and the duration of schemes that have been implemented, which represent approximately 80% of the schemes analysed. Some schemes identified can be considered old (with a start date before 2010) whilst other schemes are much more recent. The oldest scheme started in 1942 in Ireland, whereas most schemes analysed started after 2000.

It should also be noted that the majority of schemes analysed are ongoing. Concerning the schemes that have concluded, half of them had a duration between 2 and 4 years, whilst numerous have an unknown end date and thus duration.

¹ A common definition for Innovation has not been proposed, as innovation may differ per country. Nevertheless, innovation is likely to come from the way a scheme is implemented and/or financed.

Figure 4. Number of schemes by start date



Figure 5. Number of schemes by end date

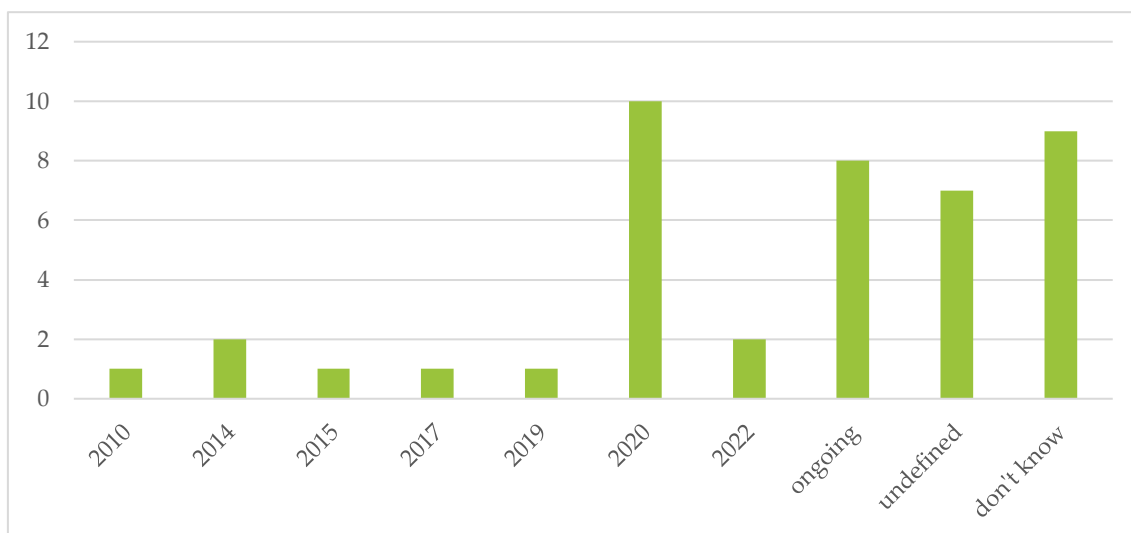


Figure 6. Number of schemes by duration (years)

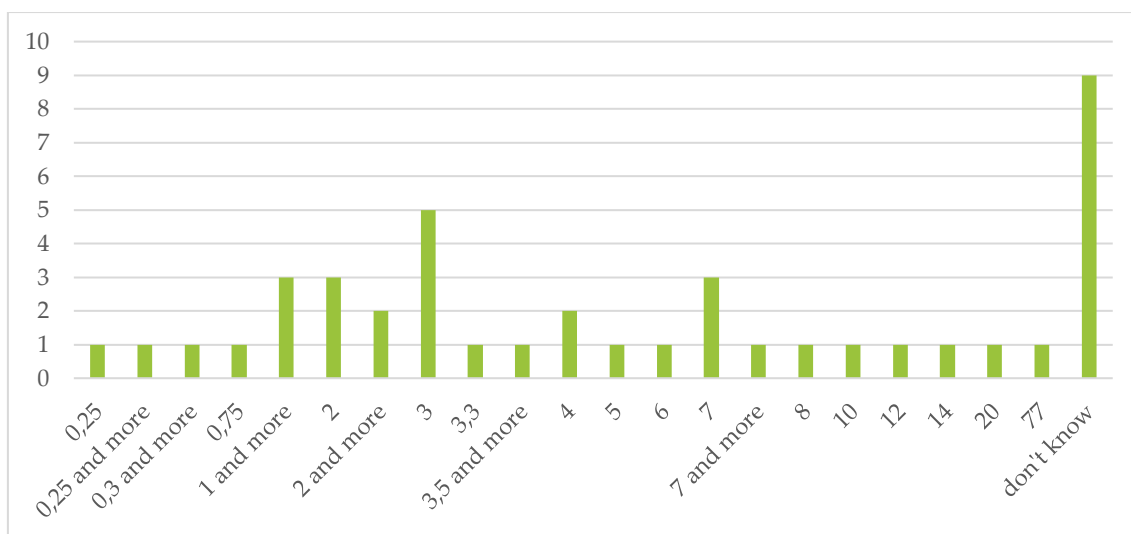


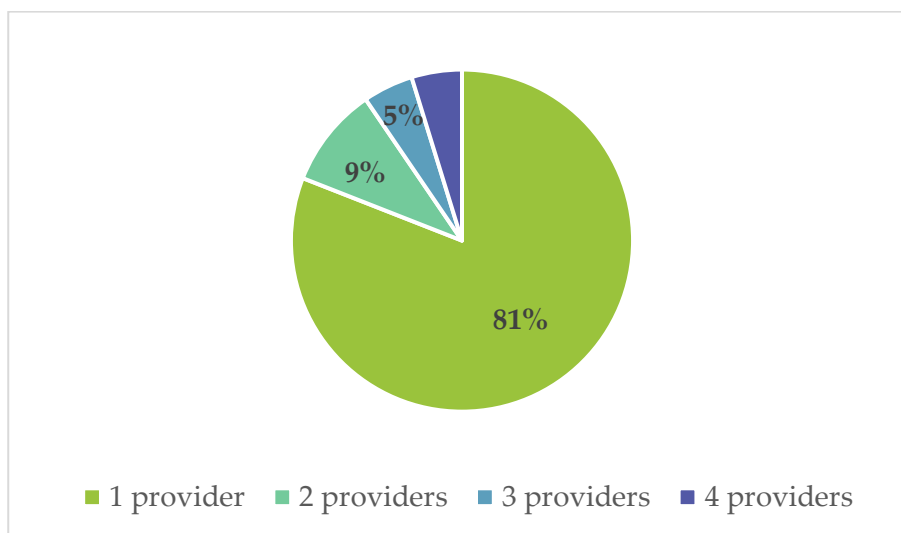
Table 1. Number of schemes per start date and duration

Start date	Number of schemes	Average scheme duration (years)
1942	1	77.0
2001	1	20.0
2007	1	12.0
2008	1	14.0
2009	2	6.0
2011	1	3.0
2012	3	5.3
2013	4	7.0
2014	1	4.0
2015	2	2.4
2016	2	5.0
2017	3	3.0
2018	5	3.0
2019	6	1.9
Total average (years)		8.6

3.2 SCHEME PROVIDER

As shown in the figure below, the majority of schemes are offered by a single provider, even though often these may involve numerous other organisations as well (see section 3.3).

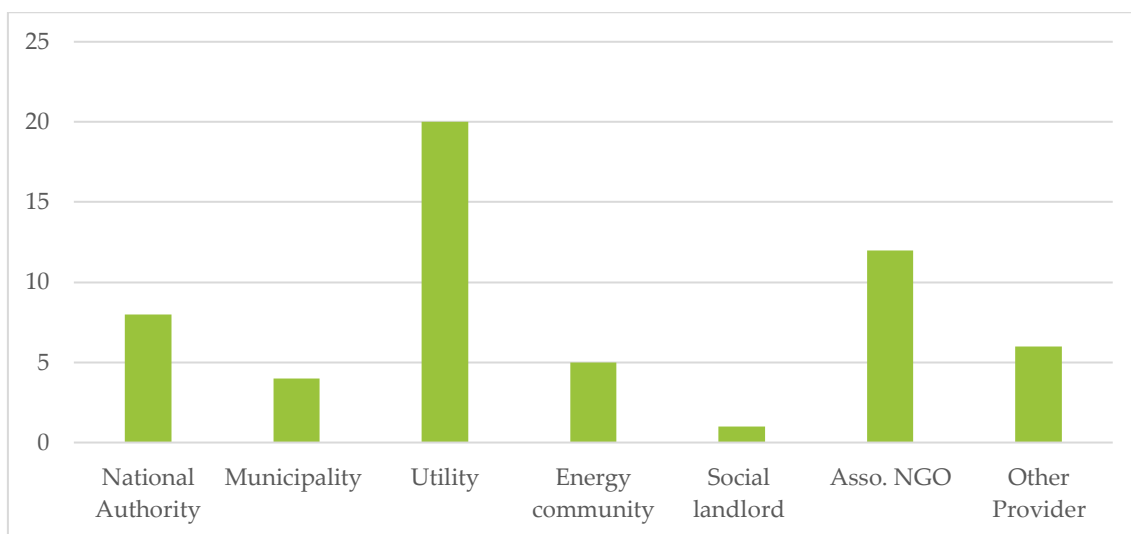
Figure 7. Number of schemes per number of providers



Furthermore, the vast majority of the schemes analysed are delivered by utilities² followed by associations/NGO and national authorities. A few of the schemes are mainly delivered by municipalities or social landlords.

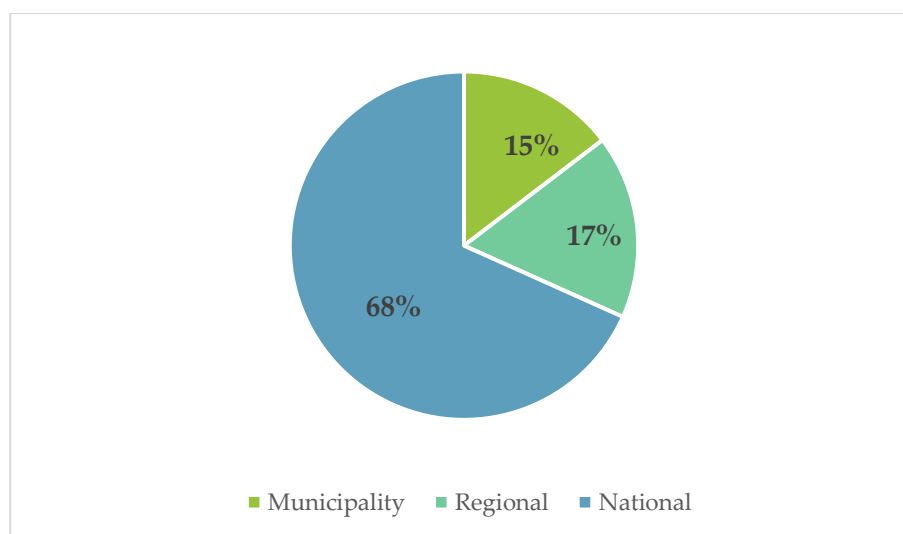
² A « self-selection » mechanism is highly likely due to the strong presence of utilities in SocialWatt.

Figure 8. Number of schemes per type of provider



Finally, 28 schemes out of 42 studied are nationwide, whilst 13 are regional or local schemes.

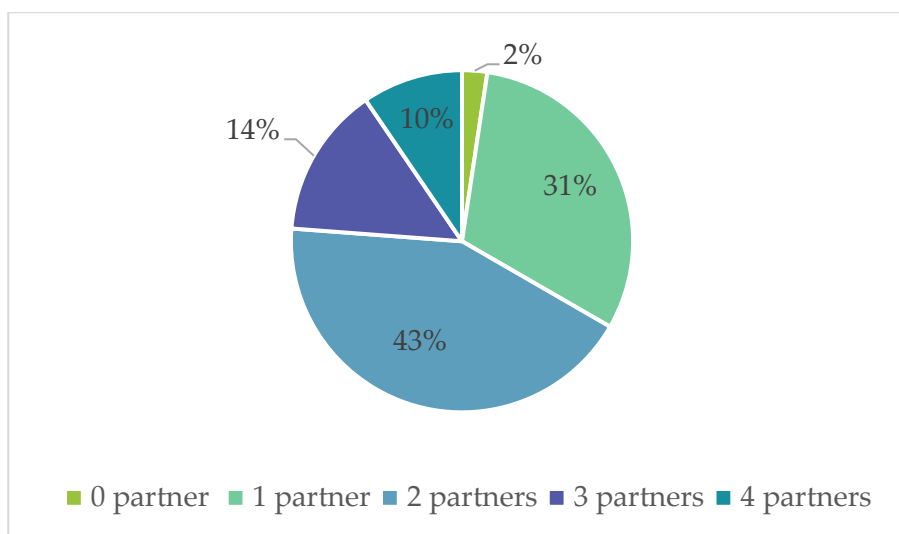
Figure 9. Number of schemes by geographical scope for eligible households



3.3 ORGANISATIONS INVOLVED IN THE SCHEME

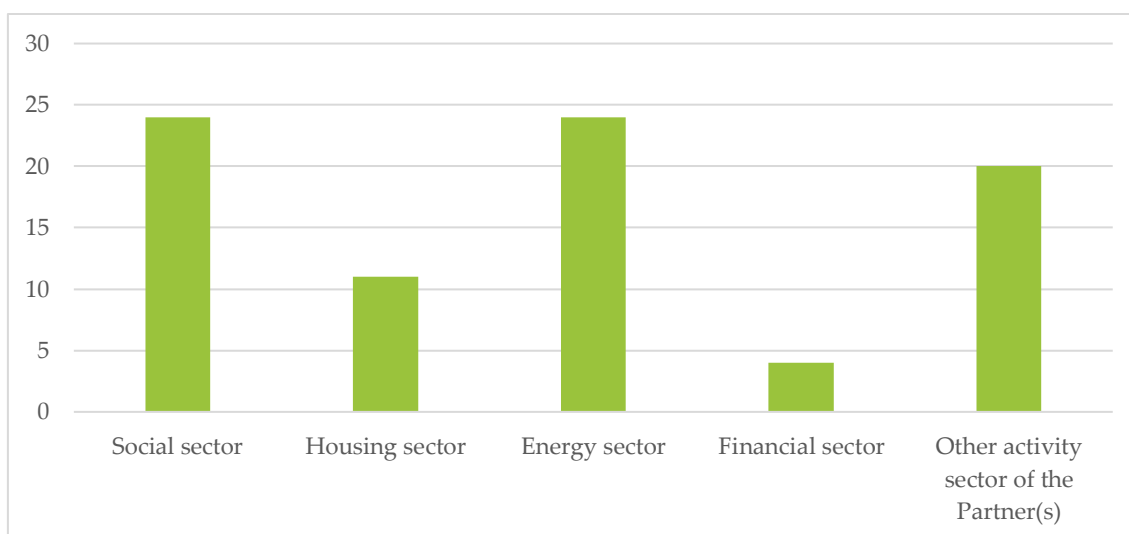
Although the majority of schemes are offered by a single institution as the main provider, these are generally implemented with the support of other organisations (in most cases 1 or 2 partners).

Figure 10. Number of schemes per number of partners



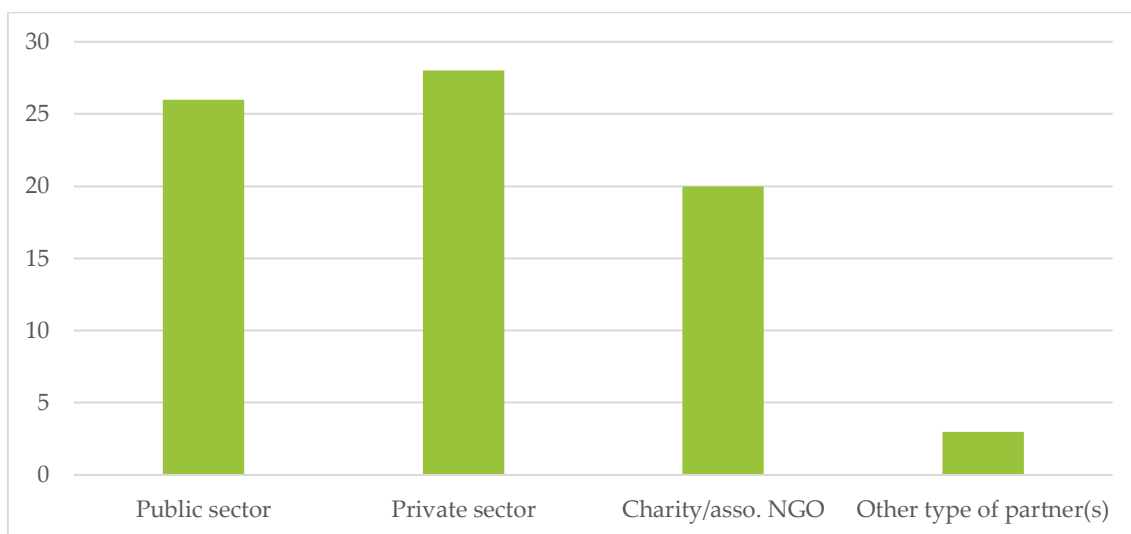
Partner organisations involved in schemes mainly come from the social sector and energy sector followed by other activity sectors (for example the public administration, including local and regional authorities, and the secondary and tertiary sector).

Figure 11. Number of schemes per partners' activity sector



Finally, as shown in the figure below, most partner organisations are either public entities, private organisations or charities.

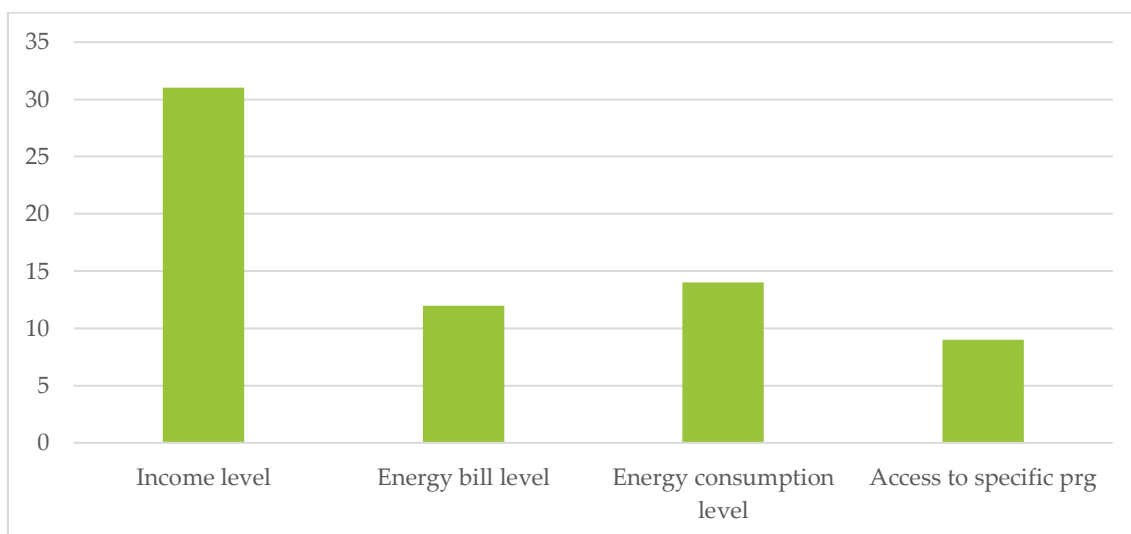
Figure 12. Number of schemes per type of partners



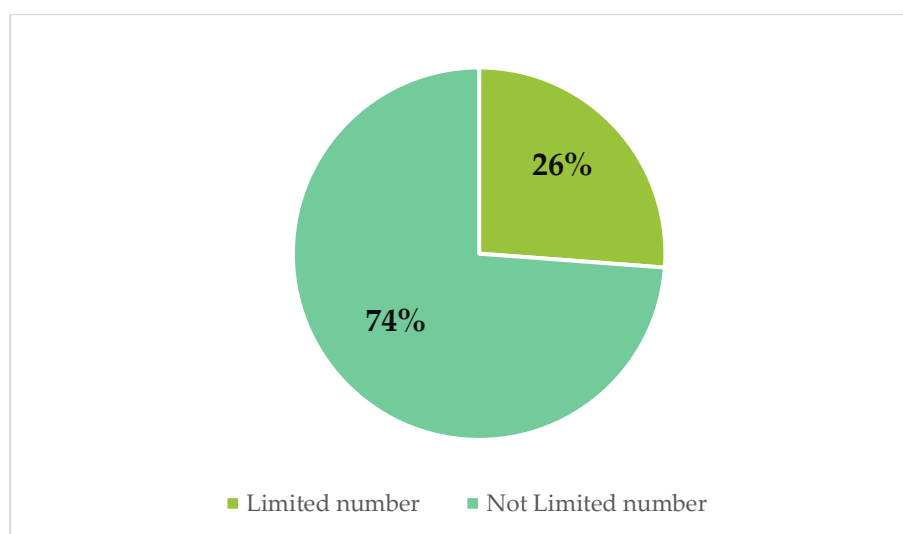
3.4 TARGETED HOUSEHOLDS

As shown in the figure below, the prevailing eligibility criterion for households' access to the schemes is the level of income and not the level of consumption (energy costs or kWh). Therefore, income is frequently used as a proxy to energy poverty.

Figure 13. Number of schemes per eligibility criteria



Moreover, only 11 schemes studied (out of a total of 42) are/were designed with a limit in the number of households covered.

Figure 14. Number of schemes with a limit in the number of households covered

More specifically, the maximum number of targeted households, in schemes that limit the number of eligible households, can vary from a hundred to a few thousand households per year, with the exception of 2 schemes (in Ireland and Croatia) (see Table below).

Table 2. Schemes that target a defined number of households

Country	Name of the scheme	Start date	End date	Duration (year)	Max. number of Households
Ireland	Winter Fuel Allowance		2020		Dependant on the number of people on Social Welfare
Croatia	Donation of energy efficient light bulbs to energy-poor households and leaflets with advice				Dependant on the number of vulnerable customers
Romania	Programme regarding the installation of off-grid photovoltaic systems for households that are isolated from the national power grid	2019	ongoing	1 and more	approx. 9,200
Spain	Energy school	2017	ongoing	2 and more	8,000 per year
Austria	Doppelplus	2017	2020	3	1500
Spain	Solidarity fund for energy retrofit	2018	ongoing	1 and more	600 per year
Austria	EC-LINC	2011	2014	3	150
Croatia	Donation of LED bulbs within the UNDP electrification initiative for energy poor households in rural areas	2015	2015	9 months	50
Austria	Pellet Stove for people who are in social need	2009	2010	2	10
Austria	Verbund Stromhilfefonds der Caritas	2009	ongoing	10	Dependant on the available funds

Finally, as shown in the table below, the large majority of schemes studied (29 out of 42 schemes studied) target single and multi-family housing, in both private and social housing.

Figure 15. Number of schemes per household type

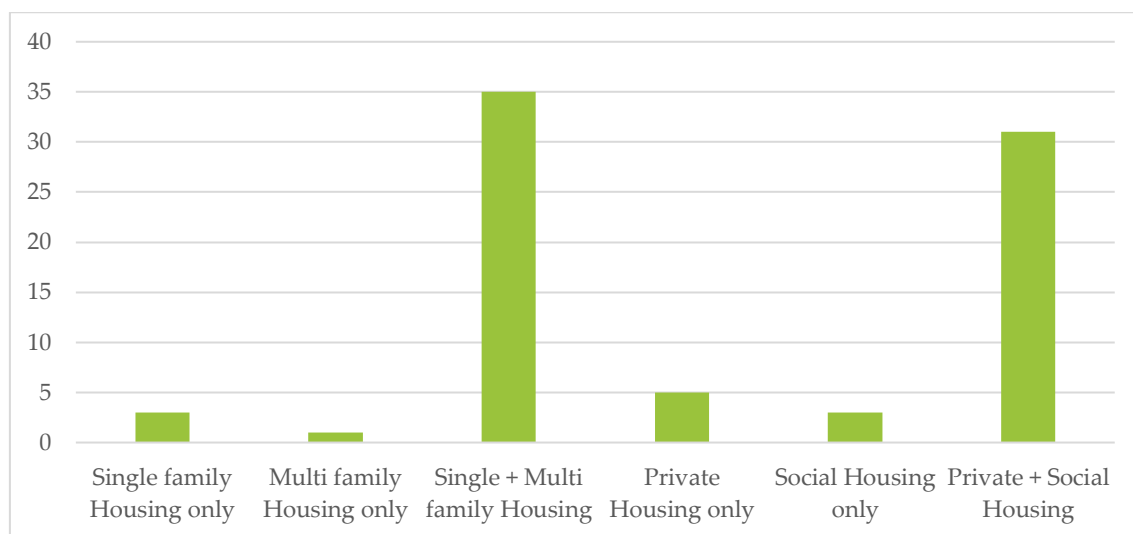


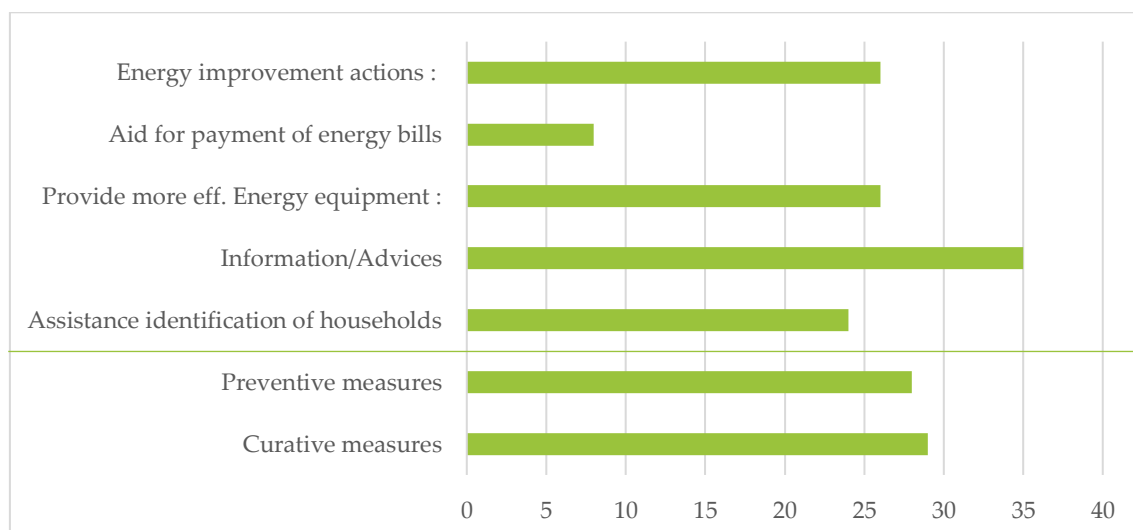
Table 3. Number of schemes per household type

	Private Housing	Social Housing	Private & Social Housing	Total
Single family Housing only	2		1	3
Multi-family Housing only			1	1
Single + Multifamily Housing	3	3	29	35
Total	5	3	31	39

3.5 MEASURES AND ACTIONS COMPRISING THE SCHEME

As seen in the figure below, many of the schemes studied concern both preventive and curative measures/actions, whilst almost all of the schemes provide information and advice to households.

Figure 16. Number of schemes by type of implemented measures



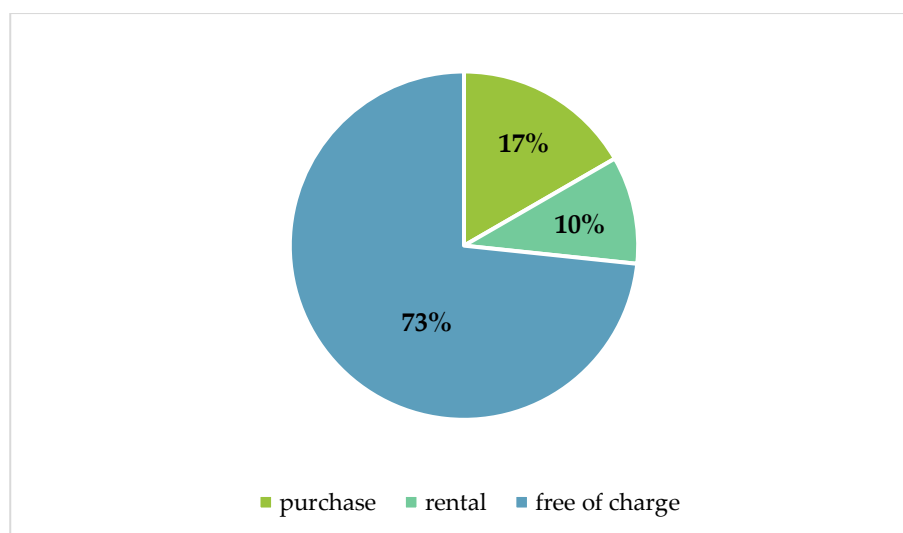
More specifically, schemes providing information or advice, mainly provide this in the form of training.

Figure 17. Number of schemes that provide information and/or advice



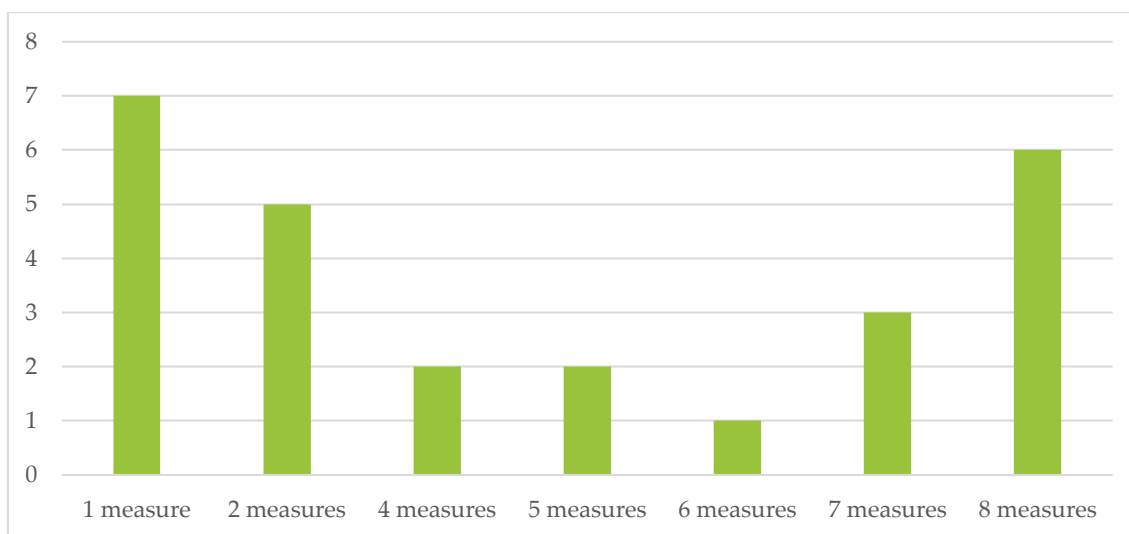
Furthermore, schemes that provide more energy efficient equipment, most frequently do this free of charge.

Figure 18. Number of schemes that provide more energy efficient equipment



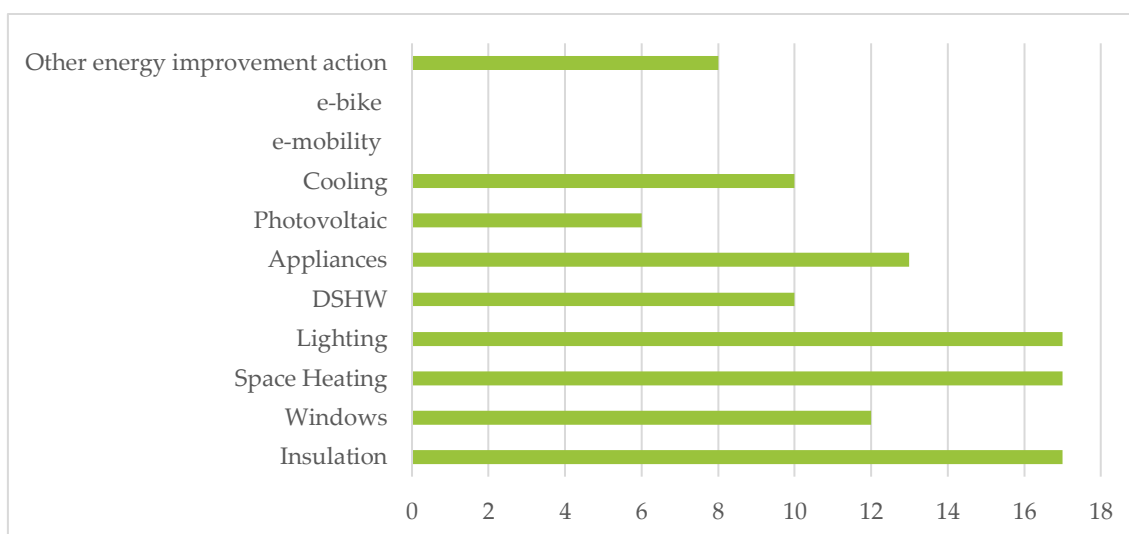
The figure below presents the number of measures/actions that comprise the schemes identified.

Figure 19. Number of measures in the schemes identified



In particular, the most popular energy efficiency measures concern lighting, and retrofitting houses (space heating and insulation). Under the category other, actions include: replacing hot water boilers, the installation of hot water cylinder jackets, boiler repairs, district heating, and draught proofing.

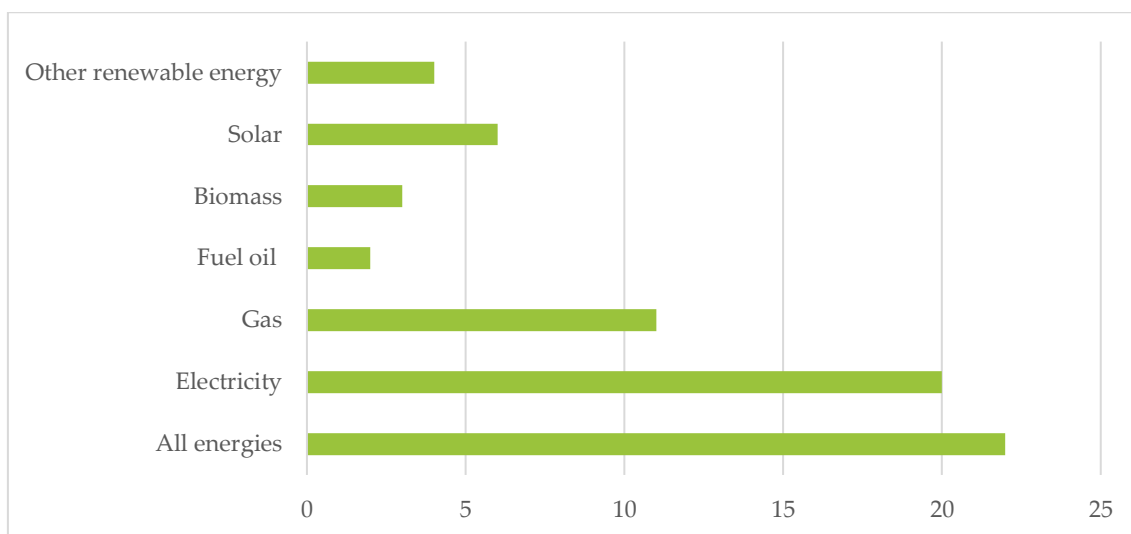
Figure 20. Number of schemes by type of measures



3.6 ENERGY PRODUCTS COVERED

As shown in the figure below, the majority of schemes focus on electricity or all types of energy. This has to be viewed along with the fact that one of the most frequently supported action relates to lighting. It should also be noted that no schemes were identified that target the most CO₂ emitting energy types locally (e.g. fuel oil, LPG, coal).

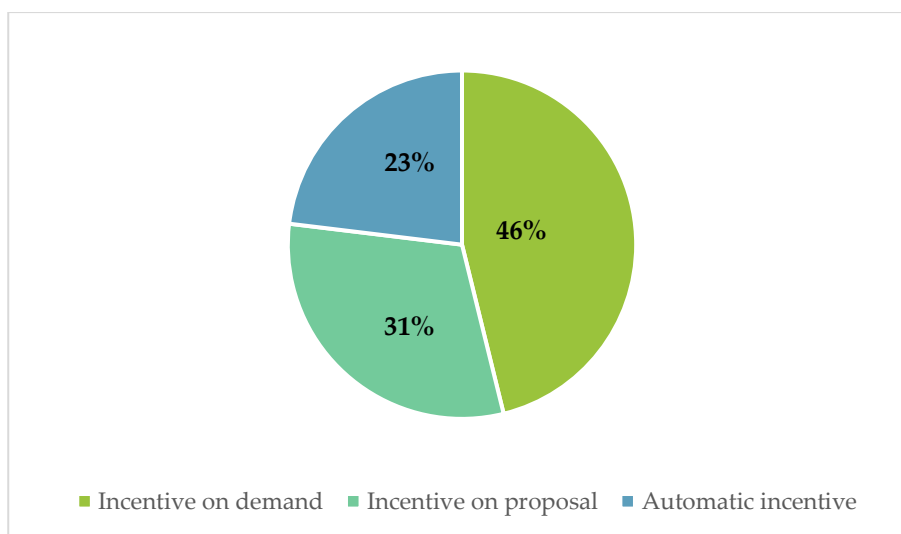
Figure 21. Number of schemes per energy type



3.7 INCENTIVES

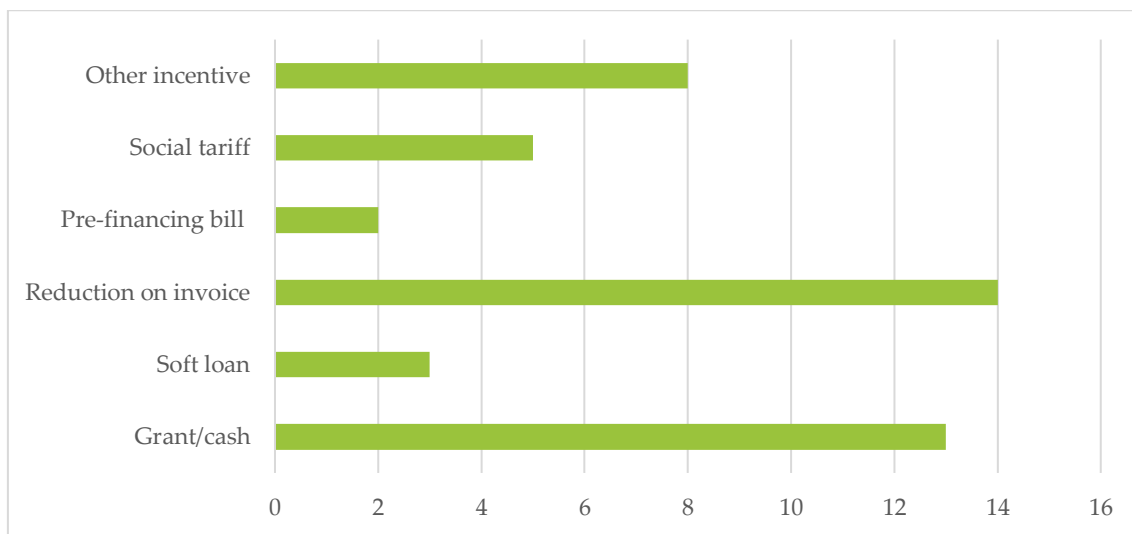
Less than half of incentives provided by schemes are given to households upon request. Nevertheless, a significant number of schemes provide aid automatically.

Figure 22. Number of schemes per different ways incentives are administered



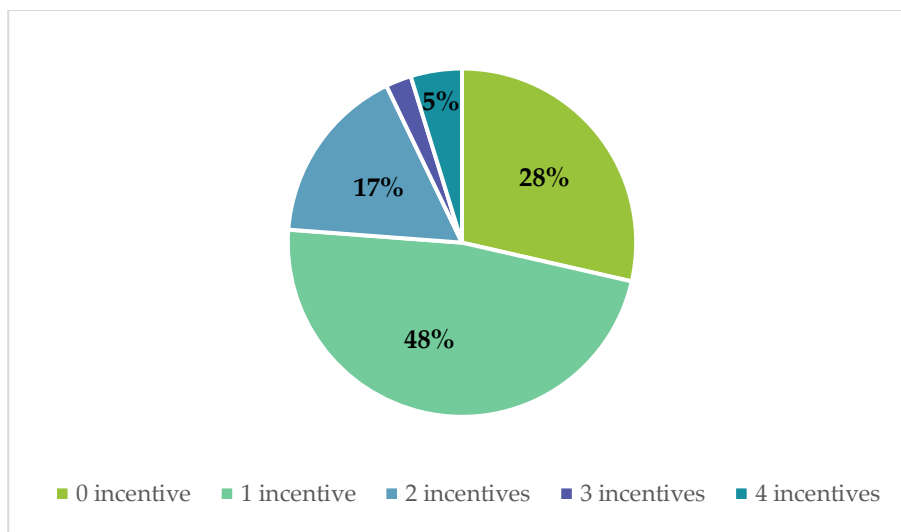
Remarkably, the most frequent incentive provided is reduced energy bill, followed by cash/grants.

Figure 23. Number of schemes per type of incentive provided



It should also be noted that half of the schemes studied deliver one type of incentive, whilst almost a third do not provide incentives.

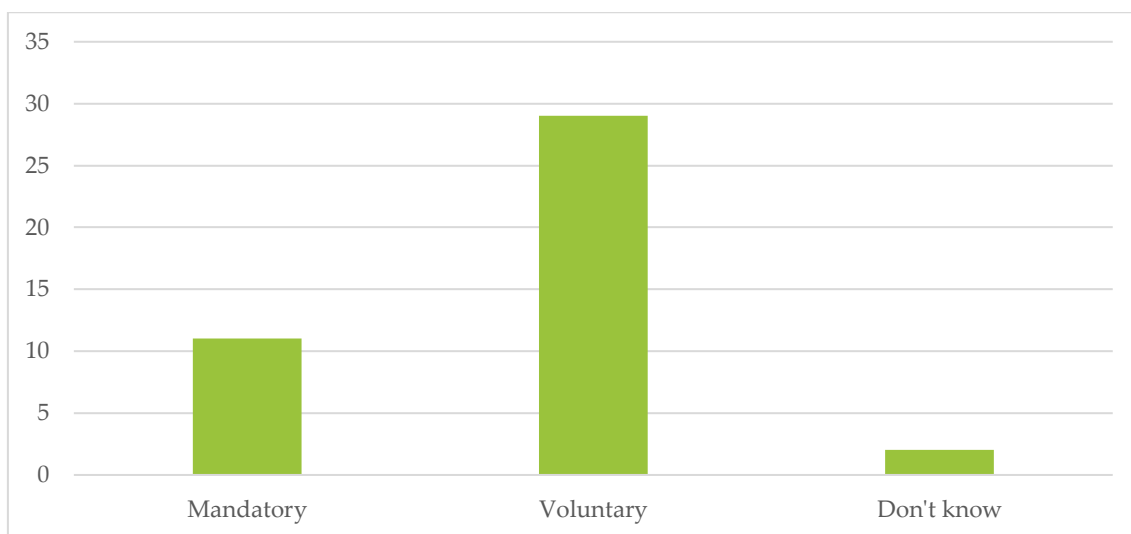
Figure 24. Number of schemes per number of incentives



3.8 CHARACTERISTICS OF FUNDING

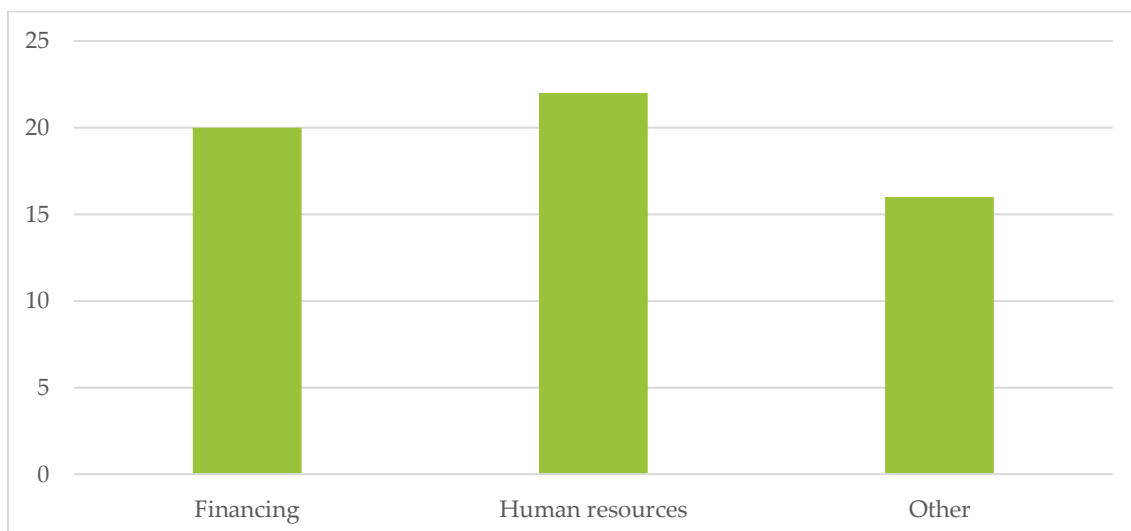
The majority of the schemes studied are supported by organisations/partners on a voluntary basis.

Figure 25. Number of schemes per partners participation type

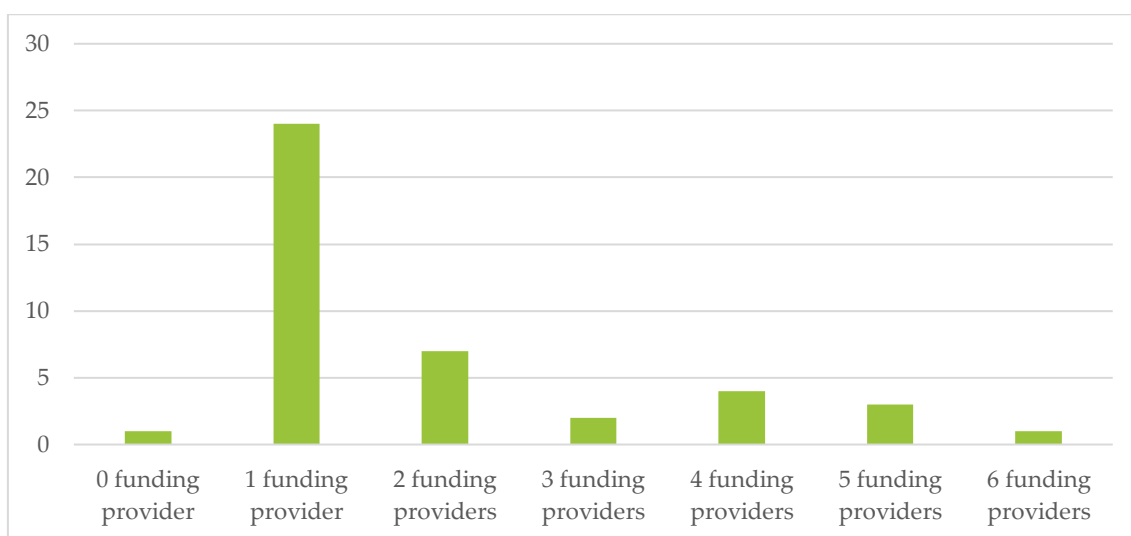


Partners are often involved in the schemes studied, by either providing human resources or financing parts of the scheme. Nonetheless, in a number of schemes, partners are also involved in other ways, for example in the implementation of measures or interventions, in undertaking the buildings certification, in the identification of eligible households, in providing know-how and expertise and in providing collateral for household loans.

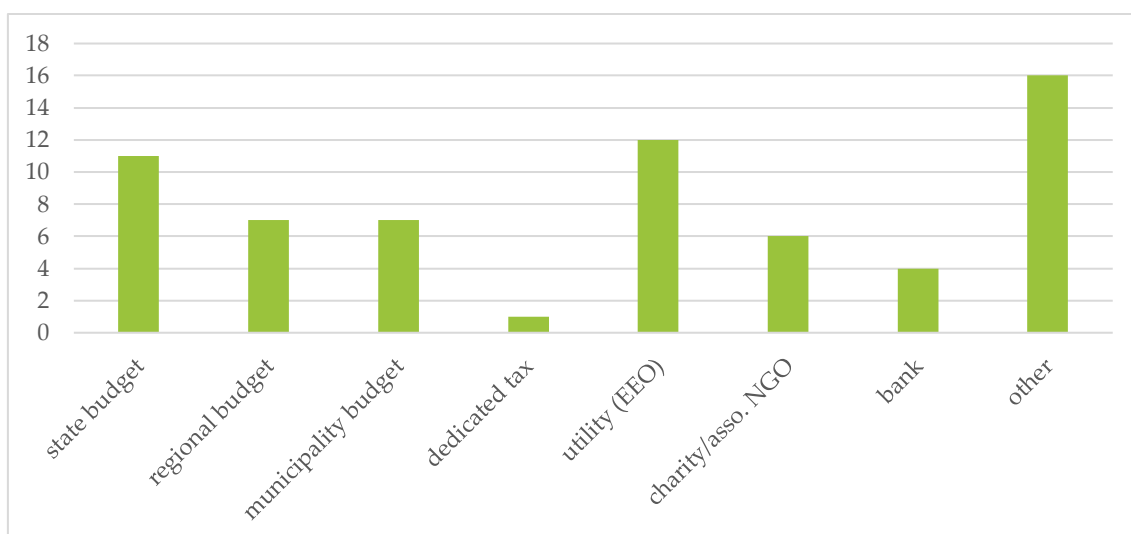
Figure 26. Number of schemes per partners involvement type



With regard to the sources of funding, in most cases schemes are funded by one entity/funding provider.

Figure 27. Number of schemes per number of funding providers

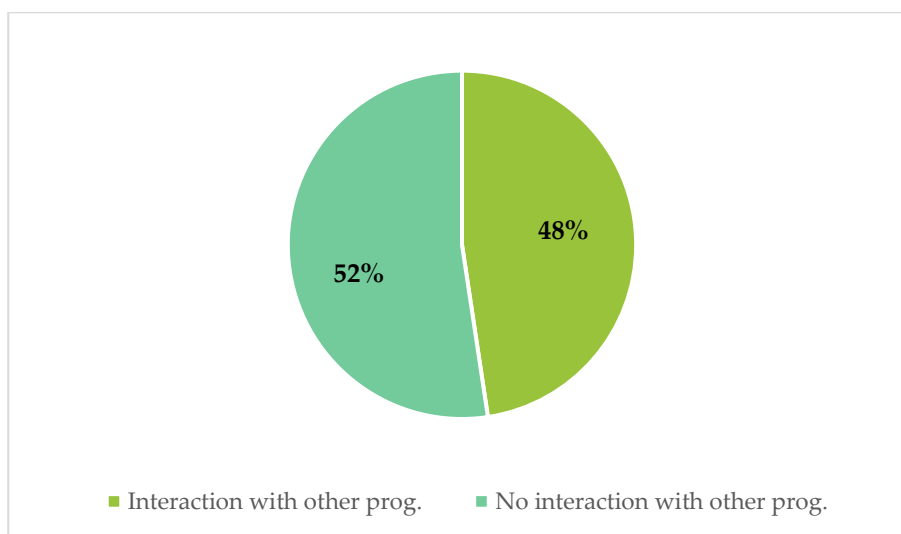
A number of schemes are funded by utilities, as well as national, regional and local authorities. The category other includes: the construction industry, technology providers and utilities (non-obligated parties under the national Energy Efficiency Obligation (EEO) schemes).

Figure 28. Number of schemes per type of funding provider

3.9 INTERACTION WITH OTHER SCHEMES AND PROGRAMMES

As shown in the figure below, approximately half of the schemes studied interact with other schemes and programmes.

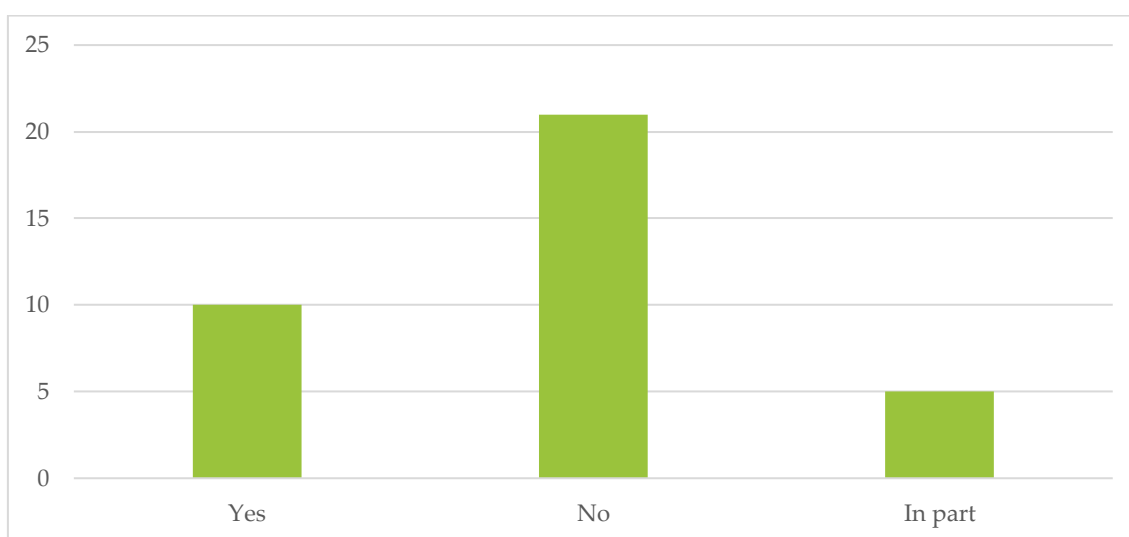
Figure 29. Number of schemes interacting with other schemes and programmes



3.10 ENERGY SAVINGS ELIGIBILITY

As shown in the figure below, approximately half of the schemes studied are not considered to be eligible under Article 7 of the EED.

Figure 30. Number of schemes eligible under Article 7 of the EED



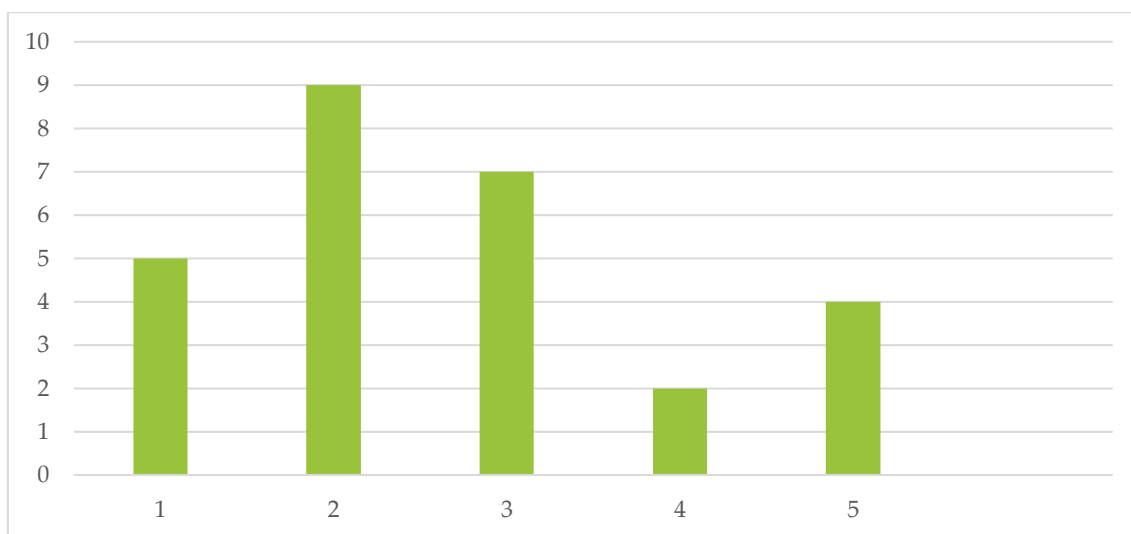
3.11 EVALUATION AND IMPACT OF THE SCHEME

Overall it should be noted, that the majority of schemes that have been evaluated are schemes that have concluded, with a few exceptions of schemes that are being evaluated during implementation.

Evaluation criteria

Approximately 27 out of the 42 schemes have been/are being evaluated using at least one criterion.

Figure 31. Number of schemes per number of evaluation criteria



The most prevalent criterion is the number of participants, which is considered straightforward to monitor. Financial indicators, such as the costs of actions/interventions and the profitability of schemes, as well as energy savings resulting from the implementation of actions/interventions, are also frequently evaluated.

Figure 32. Number of schemes per type of evaluation criteria

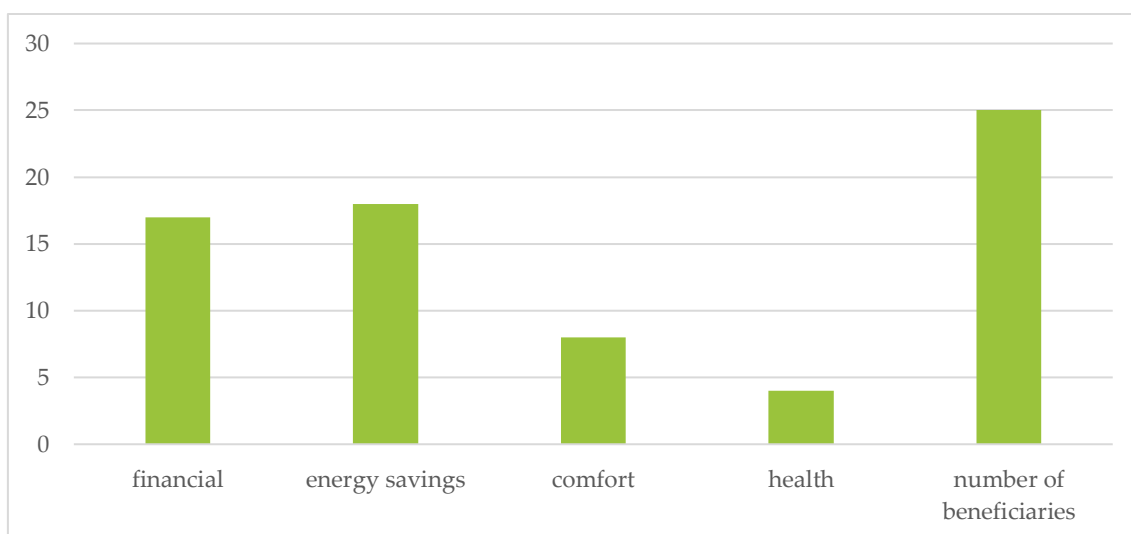


Table 4. Number of schemes per criteria number for evaluation

Criteria number for evaluation						
Evaluation criteria	1 criterion	2 criteria	3 criteria	4 criteria	5 criteria	Total
Financial		6	5	2	4	17
Energy savings	1	4	7	2	4	18
Comfort			2	2	4	8
Health					4	4
Number of beneficiaries	4	8	7	2	4	25
Total	5	9	7	2	4	

Difficulties encountered

Among the difficulties encountered when implementing schemes, the most common one is identifying eligible households. Another frequent problem faced relates to the coordination of schemes involving several partners. Finally, the issue of costs and financing is also often encountered.

Table 5. Difficulties encountered per scheme

Country	Name of scheme	Difficulties
Great Britain	ECO 3 (Energy Company Obligation 3)	More restricted targeting criteria for this programme (compared to previous EEOs) ensures that more beneficiaries are energy poor but at an increasing cost to find eligible households
Germany	Stromspar-check	Short term (3 year) funding is a barrier to the establishment of a long-term programme
Romania	The installation of a 15 kWp photovoltaics system for the Gymnasium School of Musatesti in Arges county	Authorisations and permits needed in order to install the system
Romania	Programme regarding the installation of off-grid photovoltaic systems for households that are isolated from the national power grid	Hard to find houses that are 2 or more km away from the power grid. Local authorities need to propose houses that can benefit from the grant (requires a high level of involvement)
Ireland	Fabric Upgrade Scheme	Not possible to access all houses (tenant refusal). Lack of commitment from Local Authority. Access to funding is proving problematic - current housing crises is now placing a focus on new builds
Ireland	Warmer Home Scheme	Lack of resources and limited budget . Ability to identify fuel poor citizens , Getting buy-in from eligible people
Austria	Graetzeleltern	It is very costly to train the contact persons and keep them in the program
Austria	EC-LINC	It was not easy to reach the number of households targeted
Austria	Pellet Stove for people who are in social need	Pellets stove are expensive
Austria	Doppelplus	To reach households and to retain educated people as energy advisers
Austria	Ombuststelle Wien	To establish a department within the utility that deals with households that have a problem in managing energy costs
Spain	Solidarity fund for energy retrofit	Household eligibility and retrofit are carried out by partners. The utility must adapt to the pace of each partner
Spain	Energy school	Participants may have a low educational level and it may be hard for them to incorporate changes and recommendations
Spain	Corporate volunteering	Coordination with partners
Spain	Security installation	Coordination of numerous partners and monitoring the scheme
Spain	No Home Without Energy	To reach more vulnerable people, to ensure social workers use the on-line tools of the scheme, to secure more funds to improve buildings
Spain	A prepayment model for energy management in vulnerable families	To reach more vulnerable people interested in prepayment, and to extend the scheme to more families due to the manual system applied
Spain	Solidarity warehouse	Coordination of numerous partners and monitoring of the scheme

Success conditions

The success conditions of schemes vary from scheme to scheme. Nevertheless, the type and quality of partners involved, as well as communication and cooperation are key for the success of most schemes.

Table 6. Success conditions per scheme

Country	Name of scheme	Success conditions
Great Britain	ECO 3 (Energy Company Obligation 3)	Strong national policy and binding targets for utilities, financial penalties for non-delivery
Germany	Stromspar-check	Close cooperation between delivery stakeholders and alignment with municipal social and climate policies
Romania	The installation of a 15 kWp photovoltaics system for the Gymnasium School of Musatesti in Arges county	The level of help received from local authorities .
Ireland	Fabric Upgrade Scheme	Majority of houses complete under phase 1. Some works have taken place on phase 2.
Ireland	Warmer Home Scheme	Waiting list for upgrade works & deeper measures being considered in certain circumstances - also new building regulations are forcing deeper measures to be implemented.
Austria	Graetzelaltern	Efficient communication
Austria	EC-LINC	Saving hot water is a very simple way to save energy costs
Austria	Reducing energy poverty through energy efficiency	Useful guidelines
Austria	Pellet Stove for people who are in social need	Pellet stoves are simple to handle
Austria	Doppelplus	Large network for cooperation
Austria	Ombudsstelle Wien	Choice of involved persons
Croatia	LED bulbs donation within the UNDP electrification initiative for energy poor households in rural areas	50 households that have not had access to electricity so far have received autonomous photovoltaic systems to produce electricity, as well as LED bulbs to optimize lightning consumption.
Spain	Solidarity fund for energy retrofit	Good communication and relationship with partners and efficient monitoring of the scheme
Spain	Energy school	Partners involvement in actively promoting participation and following up the implementation of recommendations
Spain	Corporate volunteering	Good coordination with partners and efficient monitoring of the scheme
Spain	No Home Without Energy	Creation of a network of key stakeholders (NGOs, public authorities, energy companies, energy efficiency products providers, citizens, etc.) sharing knowledge, tools and methodologies to help vulnerable people
Spain	A prepayment model for energy management in vulnerable families	Families training

Replicability

As shown in the table below, the majority of the schemes studied are considered to be replicable.

Table 7. Number of schemes that can be replicated

Replicability	Number of schemes
Yes	30
Don't know	12

The table below presents the replicability conditions of schemes when these have been identified.

Table 8. Replicability conditions

Country	Name of scheme	Replicability conditions
Romania	The installation of a 15 kWp photovoltaics system for the Gymnasium School of Musatesti in Arges county	Replicability in CEZ: budget allocation and another contest in order to find the right school; Outside CEZ: Grants and CSR culture and legislation
Romania	Programme regarding the installation of off-grid photovoltaic systems for households that are isolated from the national power grid	Existence of off-grid housing that are eligible. Reducing the distance from the grid in order for more houses to be eligible
Ireland	Fabric Upgrade Scheme	This scheme could be replicated but funding would need to be available - this is a free scheme for households
Ireland	Warmer Home Scheme	Replicable provided state funding is available
Austria	Graetzeletern	Simple concept - easy to replicate
Austria	Doppelplus	The evaluation report can inform replication
Spain	Solidarity fund for energy retrofit	Having NGO as partners
Spain	Energy school	Availability of funds
Spain	Corporate volunteering	Identifying appropriate partners
Spain	No Home Without Energy	On-line tools and materials for NGOs and companies are available to replicate the methodology to identify households and advise them in order to reduce energy bills and improve comfort at home
Spain	Energy advice points	Identifying appropriate partners
Italy	CLARA and associations	Identifying NGO associations to engage
Italy	Retrofit à la BUILD-HEAT	Securing funding, finding viable housing real estate
Italy	Occitan and mountain communities	Identifying NGOs, Banks, Mountain Communities to engage
Italy	Managing Energy	Making it mandatory / media promotion / other utilities availability
Italy	Contract management	Making it mandatory / identifying NGO associations to engage / other utilities availability
Italy	ESCOs project	Identifying of Energy Service Companies (ESCOs) to engage, securing funding, finding viable housing real estate

3.12 INNOVATION

The reasons why each scheme identified was considered innovative were analysed. In particular, the following innovation elements were identified:

- › The **collaboration of different types of partners to carry out or finance** the scheme, such as partners from the energy, social, housing and financial sectors, public and private partners, associations and NGOs. Often such collaborations help efficient and important actions to be implemented at a lower cost, as costs are shared. The involvement of partners depends on the nature/type of partners, and may include:
 - identifying energy poor households,
 - providing information and advice on energy-saving actions,
 - providing more energy-efficient equipment for free,
 - offering an aid for the payment of energy bills, and/or
 - setting up energy interventions.
- › The **way a scheme is financed and implemented**, for example through the use of Public–Private Partnerships (PPPs), Energy Service Companies (ESCOs) and donations.
- › The **way a scheme actively engages with energy poor households**, for instance by discussing energy efficiency behaviour and interventions during home visits or at energy schools established and by promoting interventions using showcases.
- › The **participatory co-implementation of schemes**, e.g. by encouraging people to actively take part in the retrofit works in their houses or by providing tablets and connected sensors to enable real-time measuring/reading of energy consumption and comfort.
- › By **testing the effectiveness of different technological and technical solutions** to mitigate energy poverty, for example the use of a prepayment system to ensure the efficient use of energy.

It should be noted that some of the schemes presented below have not been implemented or planned, but are being discussed within the framework of SocialWatt.

Table 9. Innovation of studied schemes

Country	Name of scheme	Innovation
Romania	The installation of a 15 kWp photovoltaics system for the Gymnasium School of Musatesti in Arges county	<p>The innovation of this scheme, in the context of Romania, comes from:</p> <ul style="list-style-type: none"> - Introducing renewable energy to state owned public buildings. This is very important as most public buildings mainly operate during the day, when energy costs are at their peak and when photovoltaics work the best. As such, the implementation of such a system on a public building reduces operating costs and frees a part of the allocated budget in order for it to be invested in other areas; - Educating youth about the benefits of renewables by showcasing technology that supports their activities on a daily basis. This works especially well in rural areas, as most kids have never seen or heard of such systems and will be very curious about the panels installed on the roof of the school.
Romania	Programme regarding the installation of off-grid photovoltaic systems for households that are isolated from the national power grid.	The innovation of this programme comes in the context of the slow expansion of the national power grid, which requires large investments, and does not provide every household in the country with electricity. The households that are not covered by the national power grid usually rely on fossil fuels to generate energy or lack electricity entirely. The programme also finances batteries so that the energy provided by the system provides power 24h/ day.
Romania	Energy Efficiency Portal	The main innovation of the Efficiency Portal comes in the form of energy efficiency education provided to regular people that might not be aware of bad habits that result in higher electricity or heating bills.
Romania	First light national programme; not started (approved)	The scheme involves partners from the public sector, and is estimated to help 15.000 households. Eligible households are those not connected to the grid, because of their remote location or very high costs for connection. The scheme provides important support to households, as the installation of renewable sources can eliminate energy poverty. One-time aid support is provided upon request by eligible households that ensures the acquisition and installation of renewable power sources.
Austria	Graetzeletern	Training of people who are established in their respective groups.
Austria	Verbund Stromhilfefonds der Caritas	Households do not have to be costumers of the utility VERBUND to have access to the scheme. If households want to benefit from the scheme, they must accept energy saving advice for their homes.
Austria	EC-LINC	Tailored information and consultation approaches to assist low income house-holds in saving energy and water at home.
Austria	Reducing energy poverty through energy efficiency	Social experts do not always have the knowledge of energy experts, but are in constant dialogue with energy-poor households.
Austria	Pellet Stove for people who are in social need	<p>It is quite simple, to replace the old single heating system with a modern pellets stove.</p> <p>Pellets can be bought easily in DIY-Markets by 15 kg per unit.</p>
Austria	Doppelplus	Educating/Training people, who are in contact with energy poverty households, in order for them to become n energy advisers



Country	Name of scheme	Innovation
Austria	Ombudsstelle Wien	The establishment of a special department within the service department of Wien Energie, too deal with households that have a problem in paying their energy costs. It is comparable with a one stop shop in the social structure of Vienna and Austria. The department can decide how much a bill can be reduced or how the energy bill will be paid (e.g. payment by instalments). The employees of this department are partly social experts.
Croatia	LED bulbs donation within the UNDP electrification initiative for energy poor households in rural areas	50 households that have not had access to electricity so far have been provided (free of charge) with autonomous photovoltaic systems to produce their own electricity, as well as LED bulbs to optimize lightning consumption.
Croatia	Donation of energy efficient light bulbs to energy-poor households and leaflets with advices	<p>For the first time in Croatia, a program will be launched by utilities for systematically mitigating energy poverty. This program requires a high level of coordination and cooperation between multiple stakeholders and at several levels. For these and other reasons it is innovative and quite challenging given that it is implemented for the first time at national level. Planned project flow:</p> <ul style="list-style-type: none"> - Customers will be notified in writing 10 days before light bulbs are delivered to their home address. The Ministry of Social Welfare will also be notified of the planned action. - Distribution of light bulbs will be carried out using postal services (package delivery from Croatian Post) throughout the Republic of Croatia. Customers will have to sign the handover record when picking up the package, confirming that they received a package of 3 high-efficiency lighting fixtures and provide a statement of their status in order to confirm that the household is considered vulnerable/endangered customer and/or in the area of special development. The Croatian Post will be required to submit Handover Minutes and a report on delivery performance. - After delivery, energy savings will be measured, in accordance with the Ordinance on the system for monitoring, measuring and verification of savings (OG 71/2015) and on the energy efficiency obligation system (OG 41/19).
Spain	Solidarity fund for energy retrofit	Neither utilities nor entities carry out housing retrofits to alleviate energy poverty.
Spain	Energy school (interaction with Corporate Volunteering)	The Energy school is innovative, as it is the only one designed and implemented by a utility (i.e. Naturgy).
Spain	Corporate volunteering (interaction with Energy School)	It is an innovation because it is a specific volunteering program focused on providing energy advice and facilitating household retrofits, whilst in parallel the program has big impact (more than 4.000 families in 2019).



Country	Name of scheme	Innovation
Spain	Security installation (interaction with Solidarity Fund Retrofit)	Two ways of working: 1) Naturgy detects needs of energy poor clients when visiting houses because of services that require checking (e.g. the installation). Sometimes the installation requires some kind of intervention that costs money. In such cases, Naturgy checks with social services that the person is an energy poor citizen and if social services confirm this, Naturgy sends workers and implements the intervention for free. This is a real innovation in the sense that Naturgy both identifies and solves the problem. 2) Social services identify needs of energy poor citizens regarding power and gas installations, electrodomeotics or energy efficiency issues in general. They ask Naturgy to solve these needs, and Naturgy sends workers and undertakes the intervention for free.
Spain	No Home Without Energy	The programme developed on line tools to inform and assist vulnerable consumers. More specifically, an on-line questionnaire was used to gather data about people affected by fuel poverty and to give them personalized and automatic recommendations on habits, energy contracts and low-cost measures to reduce energy bills. Additionally, an on-line map was also developed to help people locate initiatives and subsidies that they can benefit from. In Spain, there are no similar websites/tools. Innovative aspects: - Online and personalized assistance in a cost-effective way. - Bottom up approach to characterize energy poverty, gathering data from people instead of using statistical data. - Collaborative web site, since stakeholders upload on the map their initiatives and subsidies.
Spain	A prepayment model for energy management in vulnerable families	The aim is to implement a prepayment electric power pilot scheme/programme with approximately 20 vulnerable families in Calatayud in order to: - Test whether a prepayment system can be an adequate way for ensuring the efficient use of energy and control the spending of vulnerable families. - Help the Municipal Social Services to improve the management of emergency aid reserved for the payment of electricity supply bills, minimising high bills caused by the inefficient use of energy. - Establish power limitation as an alternative to power cut.
Spain	Red Cross Energy poverty dare (interaction with Energy Schools, Corporate Volunteering)	Red cross, as an entity, has the goal of zero CO₂ emissions and to accomplish this objective, they have also committed in spending money on energy poor people , i.e. 120 € per household. The aim is to reduce energy consumption (by providing training on energy efficient habits) and therefore CO ₂ emissions.
Spain	Solidarity warehouse (interaction with Solidarity Fund for Energy Retrofit)	The City Hall of Terrasa (Spain) is the leader of the program that takes advantage of in-kind contributions of different entities of the municipality. Naturgy Foundation is one of the contributors, checking power and gas installations, changing old boilers for more efficient ones and making low cost retrofit in energy poor households.
Spain	Energy advice points	Few City Halls offer this energy advice service to people in energy poverty.

Country	Name of scheme	Innovation
France	"Helping hand" energy savings bonus 2019-2020(interaction with "Living better" from National Housing Agency)	<u>Innovation comes from:</u> The incentives in combination make up the offer of "free" retrofit ("1€ offer") to low-income households. For low-income households, half of the up-front costs (ex-VAT) are covered by the ANAH program to "live better" (Habiter Mieux). The remaining up-front costs are covered by EEO certificates at a minimum rate as specified in the "helping hand" charter.
France	DEPAR (Diagnostics Energétiques pour Accompagner la Rénovation) - Energy Diagnosis to accompany the renovation	This scheme (http://solutionsbusiness.laposte.fr/plus-loin-renovation-energetique-depar/) helps in locating households (using a mapping tool and information provided by postmen). It is the Postman (from the national company "La Poste") who present the scheme to households and offers an appointment for a free Energy Diagnosis of the home. If the household accepts, it benefits from: an energy performance assessment by an expert, information on energy-saving behaviour, energy retrofitting scenarios, and possible financial aids, as well as from a free "Energy Saving Kit" (with 4 Led bulbs, a water saver, a mousseur). <u>Innovation comes from:</u> the partnership established, which relies on La Poste's postmen who have access to all customers in France, and combines the location of households + technical diagnosis by an expert + information on energy-saving behaviour + distribution of a free "Energy Saving Kit".
France	MAGE (Mesurer et Accompagner pour Garantir les Economies) - Measure and Support to Guarantee Energy Savings	Programme to reduce energy consumption in volunteering households (http://solinergy.com/programme-mage/): installation of a tablet and connected sensors enabling real-time measuring/reading of energy consumption and comfort (temperature in the dwelling) + support for households for one year with home visits by partners (coaching). Individual support for volunteer households takes place as follows: initial diagnosis, the installation of an "Energy Saving Kit" and the measuring equipment + a visit after 3 months and proposal of an action plan + evaluation assessment after one year. <u>Innovation comes from:</u> the installation of a tablet and connected sensors enabling real-time measuring/reading of energy consumption and comfort (temperature) + support for households for one year.
France	TOITS d'abord (Abbe Pierre Foundation)	Abbé Pierre Foundation is a well-known and recognized association. This program (https://www.fondation-abbe-pierre.fr/toits-dabord) focuses on the retrofit of houses in order to provide decent, comfortable, energy-efficient and cost-controlled housing for people in precarious situations. Since 2012 , this program has supported more than 1,000 operations by committing nearly €30 million to produce 3,800 housing units; the average funding is €7,900 per housing unit.
France	Mon Appart Eco-Malin (MAEM)	An itinerant vehicle (truck + container) has been fitted out as an exemplary and educational housing for: energy and water savings, indoor air quality, waste reduction and sorting + distribution of an "Energy Saving Kit" (with Led bulbs, a flow aerator etc.). Nearly 8,000 people have been informed about energy-saving measures. €5,000 per operation; €400,000 for 3 years (https://www.edf.fr/collectivites/transition-energetique/references-et-realisations/ecogeste-en-occitanie-l-initiative-mon-appart-eco-malin). <u>Innovation comes from:</u> the itinerant vehicle (truck + container) which has been fitted out as an exemplary and educational housing and moves from one neighbourhood to another.
France	Auto-Réhabilitation Accompagnée (Compagnons Bâtisseurs Provence)	<u>Innovation comes from:</u> involving households from the beginning of the process; they actively take part in the retrofit works in their houses, supported by the association and professional building craftsmen (https://www.compagnonsbatisseurs.eu/maitrise-des-energies). In 2019, 163 people were involved by receiving information on how to save energy, whilst 30 households were supported in the implementation of technical interventions.

Country	Name of scheme	Innovation
France	Gift of Energy ("Don d'énergie")	<p>EDF involves its customers in its solidarity actions by allowing them to donate (in euros) using the app "EDF & MOI" (https://particulier.edf.fr/fr/accueil/guide-energie/electricite/don-energie-fondation-abbe-pierre). For each euro donated by EDF customers, EDF makes a donation of one additional euro (customer donations are 75% tax-exempt and the EDF contribution is 60% tax-exempt). All donations are used by the Abbé Pierre Foundation, which is a well-known association in France for their actions to tackle inadequate housing. The Abbé Pierre Foundation uses these donations, to pay the electricity bills of the most fragile households (curative action), regardless of their energy supplier (the beneficiary households are not necessarily EDF customers), and to finance actions to prevent fuel poverty (preventive action), with assistance for housing retrofit.</p> <p>After a one-year experimental phase, the "Donate Energy" service was officially launched in December 2019 and benefited from a communication campaign on the social networks of the "EDF and me" application and on the "edf.fr" website. To date, the "Donate Energy" service has collected nearly 500 donations for approximately €12,500, i.e. €25,000 donated to the Abbé Pierre Foundation. This <u>social and digital innovation</u>, led by EDF Commerce and developed by EDF R&D, was rewarded with the public prize at the "R&D Trophies".</p>
Greece	Extended public-private partnership	<p>This potential scheme is an extended public-private partnership (PPP), involving a utility, the energy technologies market, the banks and a Region. In addition, it combines a grant and a loan. There is distribution of the risk that the beneficiary (energy poor household) will not pay the loan, between the utility (that provides the subsidy), the Region (that provides the collateral to the bank) and the bank that gives the loan. Costs are also distributed between the utility, the energy technology provider and the energy poor household. All involved parties are in a win-win situation since the utility meets its obligations and enhances its social responsibility towards its customers. The Region meets its objective to alleviate discriminations, provide access to energy to all, while also contributing to climate protection. The energy technologies providers increase their sales and enhance their social responsibility to customers. The bank sells "secured" loans.</p>
Italy	CLARA and associations (interaction with Contract Management)	<p>Clara (https://www.claraluce.it/) is a product eVISO is promoting and for which there is a fixed price for fixed consumptions. An NGO association can sell the product and 2€/month will be returned to the association, for each new customer it convinces. Ultimately, the product can be tailored for alleviating energy poverty, targeting vulnerable or energy poor customers, together with already existing governmental bonuses (on gas and electricity)</p>
Italy	Retrofit à la BUILD-HEAT EU retrofit (interaction with ESCOs project)	<p>The BUILD-HEAT EU project (http://www.buildheat.eu/) could be replicated especially considering the social effect on energy poverty.</p>
Italy	Occitan and mountain communities (interaction with Clara, Build-heat retrofit, Contract Management, ESCOs project)	<p>Aggregating municipalities or areas to find solutions to help mountain communities to keep their home adequately warm, and power their dwellings with less consumptions.</p> <p>This could eventually be replicated in rural communities, potentially with pellet boilers or heat pumps and off-grid powering.</p>
Italy	Managing Energy	<p>A utility could develop a soft scheme by creating a section on its website – with videos, articles, case studies – that explains how to reduce consumption, how to deal with Italian policies and cost deductions for EE/RES interventions, for both the electricity and gas sectors.</p>



Country	Name of scheme	Innovation
Italy	Contract management	Using the SocialWatt tools (especially the SocialWatt Analyser), a utility might identify customers with arrears on bills or with previously suspended electric supply, and consider how to manage their contract differently (for instance, mitigating some rules and keeping their contract for more time, or including them in the Clara programme return, involve charity/social associations).
Italy	ESCOs project (interaction with Contract Management, Build-Heat Retrofit)	A utility can collaborate with ESCOs that can implement EE/RES interventions and sell Energy Efficiency Certificates (EEC). The utility may provide energy for a fixed price (for a number of years). Thus, customers will not have to pay for EE/RES interventions, but pay a monthly fixed bill, and maintain a contract with the ESCO for some years (for instance, until the intervention payback is – even partially – complete). ESCOs can make a profit from selling EEC and pay part of the costs for implementing EE/RES, and from the yearly cost savings and fixed price for buying energy.



4 CONCLUSIONS

This report was developed to support the design of sustainable and effective schemes to tackle energy poverty, by identifying innovative schemes and actions that can be tailored to tackle energy poverty. As such, existing schemes have been reviewed and numerous stakeholders have been actively engaged to help identify new robust schemes that may have a considerable economic and social impact on energy poverty.

The results of previous SocialWatt outputs have been considered, in particular schemes identified in the "Report on the Status Quo of Energy Poverty and its Mitigation in the EU". Nevertheless, this report also focused on identifying innovative schemes not yet implemented but that are potentially interesting to consider within the framework of SocialWatt. Therefore, meetings and experience exchanges with key stakeholders have been fundamental in identifying innovative schemes.

Overall, 42 schemes have been analysed, using an analysis grid developed. The main conclusions are outlined below:

- › The majority of schemes are offered by a single provider, even if various partner organisations are often involved. The vast majority of programmes are delivered by utilities, followed by associations/NGOs and national authorities. Most partner organisations involved are either public entities, private organisations or charities and support the scheme on a voluntary basis.
- › The prevailing eligibility criterion for households' access to the schemes is the level of income and not the level of consumption (energy costs or kWh). Therefore, income is frequently used as a proxy to energy poverty.
- › Many of the schemes studied concern both preventive and curative measures/actions, whilst almost all of the schemes provide information and advice to households (most frequently in the form of training). The most popular energy efficiency measures concern lighting, and retrofitting houses (space heating and insulation).
- › Regarding the sources of funding, in most cases schemes are funded by one entity/funding provider, often a utility or a public authority.
- › Approximately half of the schemes studied are not considered to be eligible under Article 7 of the EED.
- › Among the difficulties encountered when implementing schemes, the most common one is identifying eligible households. Another frequent problem relates to the coordination of schemes involving several partners. Finally, the issue of costs and financing is also often encountered.
- › The success of schemes highly depends on the type of partners involved, as well as the efficient communication and cooperation with partners and key stakeholders.
- › Finally, innovation usually lies in the way numerous schemes are designed, implemented and financed, e.g. the collaboration of different types of partners to carry out or finance the scheme.

Appendix

The tables below summarise the scope and characteristics of the numerous schemes studied. Innovative elements of the schemes studied appear in bold.

Table 10. Structure and scope of studied schemes

Country	Name of the scheme	Provider	Partners	Targeted Households	Household targeting assistance	Advice	EPC	Training	Metering	Energy efficient equipment	Energy bills aid
Belgium, Flanders	Gratis Energiescan	Distribution network operator	Energy sector + Local Authorities		X	X		X			
Great Britain	ECO 3 (Energy Company Obligation 3)	Utility	Energy sector + Local Authorities		X						
Germany	Stromspar-check	Asso. NGO + National Authority (Asso. of Energy and Climate Protection Agencies)	Social + Energy sectors		X	X				X	
Romania	The installation of a 15 kWp photovoltaics system for the Gymnasium School of Musatesti in Arges county	Utility	Social sector + Private partners			X		X (for youth = kids)	X		
Romania	Programme regarding the installation of off-grid photovoltaic systems for households that are isolated from the national power grid.	National Authority	Public partners		X	X			X		
Romania	Energy Efficiency Portal	Utility	Private partners			X		X			



Country	Name of the scheme	Provider	Partners	Targeted Households	Household targeting assistance	Advice	EPC	Training	Metering	Energy efficient equipment	Energy bills aid
Romania	First light national programme: not started (approved)		Public partners	Large (>10000 estimated)	X						
Ireland	Fabric Upgrade Scheme						X				
Ireland	Warmer Home Scheme				X		X				
Ireland	Winter Fuel Allowance			Large (>10000)							
Austria	Graetzeltern	Asso. NGO	Social + Housing sectors					X			
Austria	Verbund Stromhilfefonds der Caritas	Asso. NGO	Energy sector			X					
Austria	EC-LINC	Public Energy Agency	Social + Energy sectors	Limited (150)				X	X		
Austria	Reducing energy poverty through energy efficiency	Private Research Company	Social sector			X		X (for social workers)			
Austria	Pellet Stove for people who are in social need	Energy community + Pellets Industry	Asso. NGO, Social + Private sectors	Limited (10)							
Austria	Doppelplus	Asso. NGO	Social + Energy + Housing sectors	Limited (1500)	X	X		X			
Austria	Ombudsstelle Wien	Energy community				X		X	X		
Croatia	Utilities and Croatian government agreement on measures to combat energy poverty	Utility	Energy sector								X



Country	Name of the scheme	Provider	Partners	Targeted Households	Household targeting assistance	Advice	EPC	Training	Metering	Energy efficient equipment	Energy bills aid
Croatia	LED bulbs donation within the UNDP electrification initiative for energy poor households in rural areas	Asso. NGO + Utility		Limited (50)	X	X				X (free LED bulbs)	
Croatia	Donation of energy efficient light bulbs to energy-poor households and leaflets with advices	Utility	Asso. NGO, Social + Public (Croatian Post) sectors	Large (>10000)	X					X (LED bulbs)	X
Spain	Solidarity fund for energy retrofit	Utility	Asso. NGO, Social + Housing sectors	Large (600/year)	X	X		X			
Spain	Energy school (interaction with Corporate Volunteering)	Utility	Asso. NGO, Social sector	Large (8000/year)	X	X		X	X		
Spain	Corporate volunteering (interaction with Energy School)	Utility	Asso. NGO, Social + Housing sectors	Large (more than 4000 in 2019)	X	X		X		X (free)	
Spain	Security installation (interaction with Solidarity Fund Retrofit)	Utility	Social, Energy + Housing sectors	Municipality	X	X		X	X	X (free)	
Spain	No Home Without Energy	Asso. NGO	Social + Energy sectors		X	X (on-line tools)		X	X	X (free)	
Spain	A prepayment model for energy management in vulnerable families	Utility	Social + Public sectors	Municipality (20 families)	X	X		X	X		X



Country	Name of the scheme	Provider	Partners	Targeted Households	Household targeting assistance	Advice	EPC	Training	Metering	Energy efficient equipment	Energy bills aid
Spain	Energy poverty dare of Red Cross (<i>interaction with Energy School, Corporate Volunteering</i>)	Asso. NGO (Red Cross)	(Private) Energy sector		X	X		X	X	X (free)	
Spain	Solidarity warehouse (<i>interaction with Solidarity Fund for Energy Retrofit</i>)	Public (Municipality)	Energy + Housing sectors (Public + Private Partners)	Municipality	X	X		X	X	X (free)	
Spain	Energy advice points	Public (Municipality)	Energy + Housing sectors (Public + Private Partners)	Municipality	X	X		X			
France	"Helping hand" energy savings bonus 2019-2020 (<i>interaction with "Living better" from National Housing Agency</i>)	Public (National Authority)	Energy + Social sectors + Public Housing Agency + Private Companies								
France	DEPAR (Diagnostics Energétiques pour Accompagner la Rénovation) - Energy Diagnosis to accompany the renovation	Utility	Housing sector + Postal service		X	X	X	X		X (free)	
France	MAGE (Mesurer et Accompagner pour Garantir les Economies) - Measuring and Accompanying to Guarantee Energy Savings	Asso. NGO	Energy + Social + Financial sectors + Local Authorities			X		X	X		



Country	Name of the scheme	Provider	Partners	Targeted Households	Household targeting assistance	Advice	EPC	Training	Metering	Energy efficient equipment	Energy bills aid
France	TOITS d'abord (Abbe Pierre Foundation)	Asso. NGO	Energy + Social + Housing sectors + Local Authorities		X						
France	Mon Appart Eco-Malin (MAEM)	Utility	Energy + Social sectors (Public + Private + Asso. NGO)			X		X		X (free)	
France	Auto-Réhabilitation Accompagnée (Compagnons Bâtisseurs Provence)	Asso. NGO	Energy + Social sectors + Local Authorities			X		X			
France	Gift of Energy ("Don d'énergie")	Utility	Energy + Social sectors (Public + Private + Asso. NGO)								X
Greece	Extended public-private partnership	Utility	Energy + Financial sectors + Regional Authority			X		X	X		
Italy	CLARA and associations (interaction with Contract Management)	Utility + Asso. NGO	Energy + Social sectors		X	X		X	X		X



Country	Name of the scheme	Provider	Partners	Targeted Households	Household targeting assistance	Advice	EPC	Training	Metering	Energy efficient equipment	Energy bills aid
Italy	Retrofit à la BUILD-HEAT EU retrofit (interaction with ESCOs project)	Utility + Municipality + Energy Community + Social Landlord	Energy + Housing + Financial sectors			X	X		X	X	
Italy	Occitan and mountain communities (interaction with Clara, Build-heat retrofit, Contract Management, ESCOs project)	Utility + Municipality + Energy Community + Asso. NGO	Energy + Social + Housing sectors + Local Authorities		X	X	X	X	X	X	
Italy	Managing Energy	Utility + National Authority	Energy sector			X		X		X (free)	
Italy	Contract management	Utility	Energy sector		X	X		X		X (free)	X
Italy	ESCOs project (interaction with Contract Management, Build-Heat Retrofit)	Utility + Energy Community + ESCOs	Energy + Housing + Financial sectors		X	X	X	X	X	X	



Table 11. Scope, funding and evaluation of studied schemes

Country	Name of the scheme	Energy improvement actions	All energy types	Energy type	Renewable Energy	Automatic incentive delivered	Funding from Public + Private Partners	Art.7 eligibility	Scheme evaluated
Belgium, Flanders	Gratis Energiescan	X		Elec + Gas				X	
Great Britain	ECO 3 (Energy Company Obligation 3)	X	X		X		Utility (EEO)	X	
Germany	Stromspar-check	X	X					X	
Romania	The installation of a 15 kWp photovoltaics system for the Gymnasium School of Musatesti in Arges county	X		Elec	X (PV)			X	
Romania	Programme regarding the installation of off-grid photovoltaic systems for households that are isolated from the national power grid.			Elec + Solar	X (PV)			X	
Romania	Energy Efficiency Portal			Elec		X			
Romania	First light national programme; Not started (approved)				X (all renew)				
Ireland	Fabric Upgrade Scheme	X	X			X	X		X
Ireland	Warmer Home Scheme	X	X			X		X	
Ireland	Winter Fuel Allowance		X			X			
Austria	Graetzeleltern		X						X
Austria	Verbund Stromhilfefonds der Caritas		X					X	X
Austria	EC-LINC	X (lighting)	X				EU		X
Austria	Reducing energy poverty through energy efficiency		X						
Austria	Pellet Stove for people who are in social need	X (heating: pellet stoves)			X (biomass)				X
Austria	Doppelplus		X				EU		X
Austria	Ombustsstelle Wien		X				Utility	X	X



Country	Name of the scheme	Energy improvement actions	All energy types	Energy type	Renewable Energy	Automatic incentive delivered	Funding from Public + Private Partners	Art.7 eligibility	Scheme evaluated
Croatia	Utilities and Croatian government agreement on measures to combat energy poverty	X (insulation)		Elec			Utility		
Croatia	LED bulbs donation within the UNDP electrification initiative for energy poor households in rural areas	X (lighting + photovoltaic)		Elec	X (PV)				
Croatia	Donation of energy efficient light bulbs to energy-poor households and leaflets with advices	X (lighting)		Elec		X (at national level)	Utility	X	
Spain	Solidarity fund for energy retrofit	X (housing retrofit)		Elec + Gas			Utility	X indirect	X
Spain	Energy school (interaction with Corporate Volunteering)			Elec + Gas					X
Spain	Corporate volunteering (interaction with Energy School)	X (housing retrofit)		Elec + Gas					X
Spain	Security installation (interaction with Solidarity Fund Retrofit)	X (housing retrofit)	X				Utility	X indirect	
Spain	No Home Without Energy	X (housing retrofit)	X				Utility + Municipality + Private Foundations & Companies (CSR)		X
Spain	A prepayment model for energy management in vulnerable families			Elec		X	Utility	X (indirectly)	X
Spain	Energy poverty dare of Red Cross (interaction with Energy School, Corporate Volunteering)	X (housing retrofit)	X				Asso. NGO + Utility		X
Spain	Solidarity warehouse (interaction with Solidarity Fund for Energy Retrofit)	X (housing retrofit)	X				Asso. NGO + Utility		X
Spain	Energy advice points		X				Municipality		X



Country	Name of the scheme	Energy improvement actions	All energy types	Energy type	Renewable Energy	Automatic incentive delivered	Funding from Public + Private Partners	Art.7 eligibility	Scheme evaluated
France	"Helping hand" energy savings bonus 2019-2020 (interaction with "Living better" from National Housing Agency)	X (insulation, space heating)	X				Utility + Public Authority (national budget)	X (in part)	X
France	DEPAR (Diagnostics Energétiques pour Accompagner la Rénovation) - Energy Diagnosis to accompany the renovation	X (insulation, space heating)	X				Utility (EEO)		X
France	MAGE (Mesurer et Accompagner pour Garantir les Economies) - Measuring and Accompanying to Guarantee Energy Savings		X				Utility (EEO) + Public Authority (national budget)		X
France	TOITS d'abord (Abbe Pierre Foundation)	X (housing retrofit)	X				Utility (EEO) + Asso. NGO		X
France	Mon Appart Eco-Malin (MAEM)		X				Utility (EEO) + Public Authorities (national, regional) + EU (FEDER) + Social Landlord		X
France	Auto-Réhabilitation Accompagnée (Compagnons Bâtisseurs Provence)	X (housing retrofit)	X				Utility (EEO) + Asso. NGO + Authorities (national, regional, municipal)		X
France	Gift of Energy ("Don d'énergie")	X (housing retrofit)	X				Utility (not EEO)		X
Greece	Extended public-private partnership	X (heating, cooling, lighting, appliances)	X				Utility (EEO), bank, region, energy technologies	X	



Country	Name of the scheme	Energy improvement actions	All energy types	Energy type	Renewable Energy	Automatic incentive delivered	Funding from Public + Private Partners	Art.7 eligibility	Scheme evaluated
Italy	CLARA and associations (interaction with Contract Management)			Elec			Utility + Public Authorities (national, regional, local)		
Italy	Retrofit à la BUILD-HEAT EU retrofit (interaction with ESCOs project)	X (housing retrofit)		Elec + Gas			Bank + dedicated Tax + Public Authorities (national, regional, local)	X	
Italy	Occitan and mountain communities (interaction with Clara, Build-heat retrofit, Contract Management, ESCOs project)	X (housing retrofit)		Elec + Gas + RES	X		Bank + Public Authorities (national, regional, local)	X (in part)	
Italy	Managing Energy			Elec + Gas			Utility (EEO)	X (in part)	
Italy	Contract management			Elec + Gas			Utility (EEO) + Asso. NGO + Public Authorities (national, regional, local)		
Italy	ESCOs project (interaction with Contract Management, Build-Heat Retrofit)	X (housing retrofit)		Elec + Gas + RES			Utility (EEO) + Bank + Asso. NGO + Public Authorities (national, regional, local)	X	

