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## Financing Renewables while Implementing Energy Efficiency Measures through Consumer Stock Ownership Plans (CSOPs) - The H2020 Project SCORE

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# Financing Renewables while Implementing Energy Efficiency Measures through Consumer Stock Ownership Plans (CSOPs) – The H2020 Project SCORE

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**Abstract.** Consumer (co-)ownership in renewable energy (RE) has proved successful in engaging consumers in financing RE, thus becoming “prosumers” which in turn induced positive behavioural changes in energy consumption. Providing a collective low threshold financing mechanism for RE the Horizon 2020 project SCORE implements “Consumer Stock Ownership Plans” (CSOPs) in three pilot projects in the Czech Republic (City of Litoměřice), Poland (City of Słupsk) and Italy (Susa Valley).

Additionally SCORE seeks to respond to the European Buildings Initiative (part of COM(2016) 860 final “Clean Energy For All Europeans”) and in particular to the challenge to develop flexible energy efficiency (EE) and RE financing platforms at national or regional level targeting grants towards vulnerable consumers as laid out in its annex. In this context EE projects for blocks of flats can be a lever for consumer owned RE projects where the installation costs partly overlap with EE measures as for example insulation of rooftops and installation of rooftop PV systems. These EE projects typically qualify for subsidies to financing EE improvement of flats and municipal buildings and thus can cross subsidize also the investment in micro RE installations.

This paper demonstrates synergies between EE measures and RE investments via CSOP-financing in blocks of flats in Poland and the Czech Republic. Empirical evidence from Germany backs these effects of consumer co-ownership. Preferential conditions for Renewable Energy Communities under the 2018 recast of the Renewable Energy Directive (RED II) will support such schemes in the future.

## 1. Introduction

The transition from fossil fuels to renewable energy sources (RES) requires not only a new energy infrastructure, but also to motivate consumers to change their consumption habits in particular so as to balance demand with a volatile energy supply and to accept new technologies like smart meters. Citizens also need to be motivated to becoming more energy efficient in their own homes. Energy efficiency (EE) is highly cost-effective, the lowest-cost method of meeting demand and, as levelized cost analysis shows, cheaper than any other conventional or alternative energy source [10].

Consumer (co-)ownership in RES – “Citizen Energy” – has proved successful in engaging consumers in financing RES, thus becoming *prosumers*, that is, producers of the energy that they consume, which in turn induced positive behavioural changes in energy consumption [19]. As more and more RE technologies reach grid parity, a growing number of citizens will look into becoming prosumers. Moreover, consumer ownership in RE promotes EE by educating consumers and encouraging emulation



(“learning device”). This is particularly the case for residential photovoltaic (PV) or block heating (BH) installations having a close nexus with the place these consumers live in. Investing in RE and at the same time reducing consumption by improving EE in turn reduces the amortisation period of the investment as less money is spent to buy energy and excess production may be sold to the grid (“incentive device”). In this way, turning consumers into owners fosters involvement, commitment and responsibility, thus contributing to increased energy efficiency.

Of the three SCORE pilot regions this paper focuses on Poland and the Czech Republic as both pilots involve PV installations in residential buildings and the countries are similar with regard to socio-economic and historic factors. However, it is planned to extend the paper to the Italian case that involves the conversion of BH installations in residential buildings from oil and diesel to woodchips.

### *1.1. Problem Description*

Increased EE decreases energy consumption and increased RE prosumership decreases fossil energy demand. Yet, although both issues, RE prosumership and EE measures are so closely linked they are seldom thought together. On the contrary, interested citizens as a rule will have to consult different consultants as expertise on both topics is rarely offered from the same hands. In Building Information Modelling (BIM) only recently approaches are being developed to think both measures as two sides of sustainability. Furthermore, guaranteed feed-in tariffs have facilitated the repayment of RES installation loans, but now a shift to auction systems favouring large-scale projects threatens this powerful incentive to citizen’s investment. At the same time, although subsidies for EE measures are available their potential in particular when refurbishing residential buildings remains underexploited.

Inclusion is a second major problem area. A discouraging factor, contributing to the relative small amount of private investments in RE and EE in Poland and the Czech Republic, is the high initial capital required in relation to the level of wealth and liquid assets among the Polish and Czech societies; while prices for RE installations are similar across the European Union purchasing power and household savings are not.<sup>1</sup> Many private persons cannot afford RE installations, while state subsidies and loans are not available for everyone due to low credit ratings or a lack of equity. Some subsidies are tied to real estate ownership, a condition vulnerable households affected by energy poverty as a rule do not fulfil. Additionally, the cost structure for both RE and EE investments is complex, future yields uncertain, and the related payback period long [1]. A lack of expert knowledge on technical and legal issues is also a discouraging factor [5].

In summary, (i) RE investments and EE measures are not thought together, while (ii) the regulatory framework for prosumer investments is instable and in some countries worsening, (iii) the potential for residential EE measures remains largely underexploited, and (iv) a large part of society not owning real estate or not having savings or access to credit is de facto excluded from both.

### *1.2. Proposed Solution*

The housing sector has great potential for RE and EE investments.<sup>2</sup> Synergies between EE measures and RE investments are particularly attractive in multi-tenant blocks that have common electricity, heating and wastewater systems and can benefit from both, economies of scale and of scope. EE projects for such flats can be a lever for consumer owned RE projects where the installation costs partly overlap with EE measures as for example insulation of rooftops and installation of rooftop PV systems. These EE projects typically qualify for subsidies to financing EE improvement of flats and municipal buildings and thus can cross subsidize also the investment in micro RE installations. In particular in Poland and the Czech Republic these synergies can be tapped when refurbishing privatised blocks of flats that were bought by the tenants from former state communal housing cooperatives in the 1990ies. Many of these flats today are owned by a consortium of owners, however, often with a varying degree of municipal (co-)ownership. Municipalities as pace makers together with housing associations can take the initiative and – where available – also tailor subsidy programs to these projects. However, to

<sup>1</sup> Cf. comparison of purchasing power parity in the European Union [4].

<sup>2</sup> Buildings account for around 40% of total energy consumption across the EU, while around 70% of them are inefficient [2].

implement such projects requires having a majority of the unit owners and the municipal co-owner on board to ensure the necessary majorities in the decision-making process and to avoid conflict between the unit owners. The high upfront costs combined with a low savings propensity and a lack of access to capital credit turn out to be an obstacle for such collective endeavours.

Harnessing the potential of these synergies thus relies on two key factors, that is, (i) scalability of the investment adapted to the size and technical requirements of the building and (ii) low threshold financing enabling to include all or at least the majority of parties affected. This is where the SCORE approach relying on CSOPs to finance the investments provides an innovative alternative to conventional financing. The CSOP as a low-threshold method of finance enables individuals such as unit owners or tenants to invest in an RE facility, large or small [14]. Designed to facilitate scalable investments, it is open to co-investments by local partners such as municipalities or energy suppliers. On a broader scale, transforming consumers in residential buildings into (co-)owners of PV or BH installations not only motivates them to more efficiently use energy. It also raises awareness of energy use in general and triggers a learning process which in turn contributes to: (i) facilitating the use of smart meters and closer aligning consumption with volatile RE supply by increasing demand side flexibility (economic); (ii) increasing residents' acceptance of EE measures in their buildings often viewed with suspicion and considered too costly as well as the installation of new RE installations, e.g., wind turbines (social); (iii) accelerating the Energy Transition by reducing emissions and the impact of energy production on climate as well as contributing to sustainability goals (ecologic).

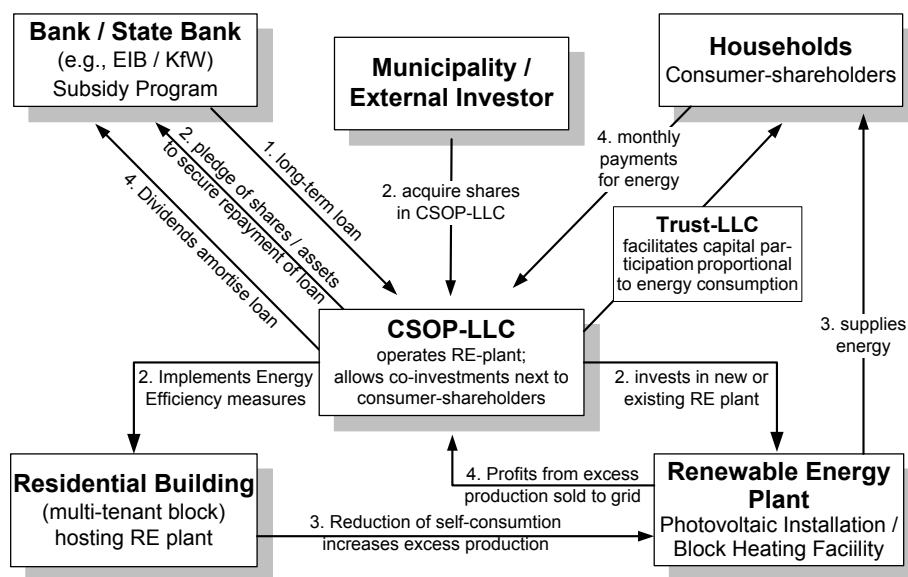
## **2. The SCORE Approach: Consumer Stock Ownership Plans**

A CSOP can buy into an existing or invest in a new RE plant [13]. In particular, low-income households – who as a rule do not dispose of savings necessary for conventional investment schemes – are enabled to repay their share of the acquisition loan from the future earnings of the investment: A fiduciary trust set up, e.g., by the local community, managed by independent trustees is authorized to borrow funds for the acquisition of shares in the RE plant on behalf of the energy consumers. The shares are allocated among the consumer-beneficiaries in proportion to their respective energy purchases. Revenues from (i) the sale of the energy produced and (ii) monies saved from increased EE are used to repay the acquisition loan assumed by the CSOP. Once this debt is amortized this revenue is distributed to the consumer-beneficiaries. The CSOP as an alternative financing source for sustainable investments is of particular importance for municipalities that are charged with fulfilling EE and climate policy goals with these responsibilities straining their limited budgets often lack the funding to make the investment themselves. Aim of this contractual model is above all to facilitate the application for a bank loan and to limit the liability of individual consumer-shareholders to no more than the value of their shares. Other important issues are easy tradability of the shares deferral of taxation of profits for the consumer-shareholders and pooling of voting rights [12].

### *2.1. Legal structure*

In the continental European CSOP model, the legal form of the intermediary entity, which administers the CSOP shares until their earnings have repaid the initial loan, is derived from the Anglo-American Common Law trust [15]. In the absence of genuine trust legislation this leads to a two-tier structure, that is, a trust limited liability company (Trust LLC) setting up an operating limited liability company (Operating-LLC). Such under continental law, the financing structure employing two limited liability companies pools individual investments while benefiting from the borrowing power of the corporate vehicle. At the same time, individual liability of consumers is avoided while participating consumers acquire capital ownership, providing them with an additional source of income. Furthermore, indirect share ownership using an intermediary entity that manages the shares held in trust for the consumer-beneficiaries and pools the voting rights executed by the trustee, implies a due “professionalization” of management: Participation in decision-making is channelled via the trustee while individual consumer-shareholders may execute control rights on a supervisory board or advisory council. Municipalities (or external investors) can buy into the project acquiring shares in the CSOP while being guaranteed corresponding voting rights.

Pooling consumers' ownership rights in the CSOP also reduces transaction cost with regard to changes of participating individuals, e.g., when consumer-beneficiaries move away from the region and transfer their share to new residents. To ensure easy tradability of the shares, the consumer (co-)owner-ship is facilitated through a trust entity. Thus, consumer shareholding in the CSOP-LLC is "brokered" by the Trust-LLC; a trust agreement between the consumers and the Trust-LLC is sufficient to render consumer shares fungible: It is the Trust LLC, which – entering into a trust agreement with the consumer-trustors – now holds the shares of the CSOP-LLC on behalf of the consumers (see Figure 1). In the event of a change of the consumer-share-holder, the buyer or heir simply steps into the trust agreement in lieu of the former trustor. Unlike in the case of direct shareholding in the CSOP-LLC, changes of shareholders need not be registered and the amount of participation held by the trustee is flexible, can fluctuate and is easily administrated. The basic mechanism is a trusteeship contract as proven in other investment settings.



Source: Own elaboration

**Figure 1.** Financing of a RE plant and EE measures through a CSOP

## 2.2. Involving both consumers and municipalities as co-investors in local RE and EE projects

The SCORE approach facilitates the involvement of municipalities<sup>3</sup> as a pacemaker of the energy transition. Other than bringing together the interests of local citizens and their municipalities this is an important prerequisite for preferential conditions under the “enabling framework” for prosumership of the 2018 recast of the Renewable Energy Directive (RED II). Art 22 RED II defines a Renewable Energy Community (REC) amongst others as a legal entity whose “shareholders or members are natural persons, local authorities, including municipalities, or SMEs” [6]. With regard to cooperatives for example, the necessity of representation on management and supervisory bodies has been reported an obstacle to municipal investments as cooperative law does not acknowledge a right of delegation familiar to laws on joint stock companies. The CSOP provides a standard business model complying with the RED II governance structure for RECs [11].

The (optional) inclusion of minority stakes of commercial investors in itself is nothing new, as citizen's energy models in the wind sector in the legal form of limited partnerships often collaborate with professional partners. When coupling EE measures with RE investments an energy service

<sup>3</sup> The regulatory framework for economic activities of municipalities typically stipulates four main prerequisites for participation in RE projects, i.e., public purpose, capacities for the investment, subsidiarity, and appropriate representation.

company (ESCO) under the framework of an energy performance contracting arrangement can be a complementary partner. Depending on the underlying RE technology and the type of EE measure, it may be very useful to include professional operators, as operation and maintenance of infrastructure can be very complex; this not only concerns the refurbishment of the entire envelope but also the replacement of obsolete wiring or the mounting of a new RE heating system. However, as investors prefer voting rights proportional to shareholding and due to the one-member one vote principle of cooperatives rarely partner with these the CSOP is a viable alternative in such settings.

### 2.3. CSOP financing in practice

The corporate structure underlying CSOP financing described above is a standard solution in Germany and other EU Member States applied many times in so-called public companies (“Publikumsgesellschaften”) for real estate investments facing a similar problem: A large number of small investors intends to participate in the equity of a company where every change in ownership, be it due to death, sale of shares, or seizure has to be signed into the commercial register in a formal procedure. The concept is applicable across the EU while its financing model goes back to the American investment banker and lawyer Louis O. Kelso who invented the CSOP technique together with the Employee Stock Ownership Plan (ESOP) in the 1950s [8]. Kelso first introduced the CSOP in 1958 in California’s Central Valley by enabling local farmers to become owners of a fertilizer processing plant the Valley Nitrogen Producers, Inc., of which they were the primary consumers [9]. The CSOP made 4,580 farmers instant shareholders of the new fertilizer manufacturer, Valley Nitrogen Producers, Inc., an investment of USD 120 million (which inflation adjusted would equal today about EUR 915 million). Today Kelso’s best-known financing technique, the ESOP, is an integral part of corporate America. At the end of 2016 there were 6,717 ESOP and 2,898 ESOP-like plans in the U.S., with about 14.5 million employees participating (13% of private sector workforce) holding around USD 1.3 trillion in assets [17].

## 3. Application in the SCORE pilot projects

As mentioned in Section 1.1. the regulatory framework for prosumer investments is not always favourable and may threaten the economic feasibility of RE investments while subsidies for EE measures are available though often remain underexploited. This section gives an overview of the regulatory framework and existing financing sources in Poland and the Czech Republic to illustrate the problem. Then the SCORE approach to overcome this difficulty and to facilitate coupling EE and RE investments through CSOP financing is described. Additional to the mentioned advantages of CSOPs, i.e., streamlining and professionalising joint consumer investments and facilitating access to finance this approach allows for the coordination of both measures under a common management.

### 3.1. Regulatory environment and overview of financing subsidies available

**3.1.1. Czech Republic [20].** Since January 1, 2016 RE plants with an installed output of up to 10 kW are allowed to operate without a power generation license provided that they fulfil the prerequisites of a “simplified process of connecting micro installation to the grid” (§ 16 of Decree No. 16/2016 Coll.). Apart from compliance with technical specifications this exemption requires (i) connection to the grid at low voltage level at an already existing supply point; (ii) no other installation already being connected to the supply point; (iii) and production for self-consumption at the supply point without remuneration for electricity supply to the grid. However, electricity suppliers competing on the market offer specific favourable tariffs with discounts for the electricity supplied to the prosumer in return for excess production fed in to the grid.<sup>4</sup>

Although no specific programs for consumer (co-)ownership and subsidies exist [18], several forms of subsidies are available from different subsidy schemes: Households may apply for an investment

<sup>4</sup> An example is CEZ’s „pro solar” tariff (<https://www.cez.cz/edee/content/file/produkty-a-sluzby/obcane-a-domacnosti/elektrina-2018/moo/20180124-ele-pro-solar.pdf>) or E.ON’s “E.ON-solar” (<https://www.eon-solar.cz/>).

grant under the “New Green Savings Program” (SFŽP), oriented to support the construction of new family houses, new residential buildings, renovation of apartment buildings and family houses in low-energy and passive standards. With regard to the installation of PV systems, solar thermal collectors for heating or water heating and other RES financial support is granted up to CZK 155,000 depending on type of RE installation which covers 33–48 per cent of the investment costs [16]. The Integrated Regional Operational Program (IROP) “Goal 2.5 Energy Efficient Living”, supports EE, smart energy management systems and RE use, in particular the installation of PV systems, solar thermal collectors for heating or hot water preparation, combined heat and power. Potential applicants are, above all, homeowners and owners of residential units; the Capital Prague is excluded; the subsidy is set at 30–40 per cent of the overall cost with minimal energy savings to be achieved fixed at 30 per cent [3].

**3.1.2. Poland [21].** Prosumers with an installed capacity of less than 40kW have a right to network access within 30 days. Owners of micro-installations with a capacity of up to 10 kW can exchange the surpluses of electricity production for provision of electricity in times of insufficient generation in relation 1 to 0.8 and those of installations with capacity between 10 and 50 kW in relation 1 to 0.9 with a balancing period of 12 months [7]. However, agricultural biogas and bioliquids are excluded from this modified net metering system.

The National Fund for Environmental Protection and Water Management (NFEP & WM) distributes national and EU sources, such as the Operational Programme ‘Infrastructure and Environment’ or LIFE). Municipalities can participate in regional competitions; once successful, within this financing scheme citizens can receive loans and subsidies for RE installations in electricity, heating and cooling of up to 85 per cent of the total investment. Under this programme municipalities secure all investments during the payback period under retention of title until the redemption of the loan. Loans on preferential terms are also offered by the Bank Ochrony Środowiska S.A. Programmes offered by municipalities, financed by the NFEP & WM are also very popular for investments in private buildings. The NFEP & WM’s PROSUMENT program 2014–2020 incentivizes prosumer self-consumption through subsidies and/or loans for micro and small RE producing electricity or heat. Interestingly, the project “Eko-lokator” (“Eco tenant”) launched in 2017 collects best practices to educate and encourage climate protection among others by promoting the approach of implementing EE measures combined with RE installations among professionals responsible for housing management.

### *3.2. Combining investments in RE with EE measures*

**3.2.1. Czech Republic.** As shown in several cases of municipal investments, significant synergies are to be expected provided that the concerned citizens accept a comprehensive approach in energy refurbishment. Existing subsidy schemes can support to transfer this experience to the private sector and to complicated settings like that between co-owners of apartment blocks. Three types of ownership in apartment blocks exist, namely (i) private individual ownership of single apartment houses, (ii) co-ownership via associations of apartment unit owners and (iii) collective ownership in housing cooperatives. In particular in the latter two cases prosumer investments coupled with EE measures seem promising as they may benefit from economies of scale. This is in particular the case when housing cooperatives are large and well organised as in the case of the housing cooperative Orlová.<sup>5</sup>

SCORE envisages to convince unit owners in housing associations in the inception phase of a project to develop a joint strategy for simultaneous renovation realising PV systems together with (i) the refurbishment of the building envelope or single roof refurbishment; (ii) the replacement of obsolete wiring; (iii) the renovation or mounting of a new heating system with new boiler room; (iv) the installation of ventilation and/or cooling system and (v) an elevator installation. The installation of thermo-solar collectors is more complicated as they can be realised only on houses equipped with an own boiler room or connected to district heating system. In all these cases the mentioned subsidies and low interest loans can be taken advantage of.

<sup>5</sup> For general information see: <https://www.bdorlova.cz/solarni-systemy.html>; for monitoring: <http://109.231.148.190/Orlova/Technol/Orlova/TechnolOrlova.aspx>.

**3.2.2. Poland.** In Poland, three types of ownership in apartment blocks exist, namely (i) private individual ownership of single apartment houses with the building's common space managed through a homeowners community, (ii) co-ownership via associations of apartment unit owners and (iii) collective ownership in housing cooperatives. All three bring along opportunities for consumer RE investments. In Słupsk, in particular the Communal Housing Company, a housing cooperative managing some 250 buildings is a key partner for pilot CSOPs with an opportunity for economics of scale. In order to trigger synergies between EE measures and RE investments during the inception phase of the project electrical audits in these buildings are planned. One focus is to explore the potential for savings through the replacement of inefficient lighting by LEDs and the exchange of old circulation pumps (used for running cold and hot water and for central heating in winter) by energy efficient ones.

With electricity savings benefitting residents with reduced electricity consumption and consequently lower costs for appropriate RE installations saved funds from reduced electricity bills could be used for RE investments. It is also planned to encourage residents to participate in a municipality-supported revolving fund with savings due to increased EE reinvested in RE installations. Through economics of scale lower investment costs both for EE (LEDs, circulation pumps) and RE (PV, thermos-solar collectors, heat pumps) equipment and installations can be achieved. Additional funding opportunities for combined EE and RE investments are the Pomeranian Regional Operational Program 2014–2020, the Operational Programme Infrastructure and Environment 2014–2020, the Provincial Fund for Environmental Protection and Water Management, the NFEP & WM in Warsaw as well as a possible investment cooperation involving co-financing by the local heating company ENGIE Słupsk required by EU law to green its energy sources.

#### **4. Empirical evidence on the link between consumer RE co-ownership and EE**

Based on observational data from 2,143 (co-)owners and non-(co-)owners of RE installations collected in an online survey, Roth, Lowitzsch, Yildiz and Hashani [19] have empirically tested the prediction that consumer ownership positively influences demand side flexibility. Their results show a statistical correlation between (co-)ownership of RE production facilities and the willingness of private households to coordinate their consumption of electricity with production levels. To extend this research to the question whether consumer (co-)ownership positively influences energy efficient consumption behaviour and the willingness to implement EE measures in the own household a second survey is currently under way. Apart from behavioural aspects, such as switching of the light when leaving the room, the usage of power boards and ECO-mode for electrical appliances we investigate to what extent respondents are willing to replace old electrical appliances such as heat bumps, light bulbs, fridges or ovens with new energy efficient one's. In line with the findings of the first survey – the assumption is that (co-)ownership in RE installations increases the willingness to invest in EE measures, to behave according to EE standards and to pay for EE measures. We apply propensity score matching to account for pre-existing differences in characteristics with regard to (co-)owners vs. non-owners and evaluate differences in the willingness to pay for EE measures in a discrete choice experiment. The results will be available for the presentation at the CESB conference in Prague in June 2019.

#### **5. Conclusions and Outlook**

The SCORE approach will demonstrate its potential in the pilot projects over the three-year lifetime of the project until April 2021. However, it should be noted that examples for the practical implementation of joint RE and EE investments already exist in Poland and the Czech Republic. At the same time single apartment owners or their tenants increasingly become (co-)owners of micro installations covering their heat and electricity needs in solar collectors, PV installations and heat pumps [22]. To unfold the full potential of combined EE and RE investments through CSOPs they should be combined with new emerging business models in the energy sector as the following cases illustrate:

**In the Czech Republic** an example is Brno retrofitted apartment blocks where between 2001 and 2010 a total of more than 1,000 apartments as well as the local elementary school and kindergarten



were successfully insulated.<sup>6</sup> With the initial investment requiring the housing association to borrow against the future savings it would receive from the tenants monies saved on heating bills effectively covered the insulation costs.<sup>7</sup> In the same way part of the investment cost of rooftop PV systems organised through a CSOP could be covered from the future savings in electricity bills. Synergies between subsidies available for the retrofitting of apartments using, e.g., the Panel+ program and the implementation of PV-installations could be used by the private owners of the formerly state-owned apartments but also by housing cooperatives. Another opportunity offering amongst others to replace individual meters in apartment blocks and to install a central low voltage meter thus pooling the base load of all flats is “ČEZ Bytové domy” ([www.cezbytovedomy.cz/technologie/](http://www.cezbytovedomy.cz/technologie/)). RE installations for self-consumption could then flexibly supply all tenants in the block while avoiding levies and fees for the use of the large-scale distribution networks. Besides that residents pay only for electricity not covered by the common PV installation, their electricity bills would be further reduced as the apartment block pays only for one central breaker. Combined with a RE investment through a CSOP this model would have the additional advantage of being bankable as it involves only one bank loan to the housing association instead of hundreds of microcredits.

**In Poland** the housing association in Szczytno in northeast Poland is producing its own energy on five houses from 120 kW heat pumps and a 39.7 kW PV installation. Since 2014 they produce around 38 MWh of electricity yearly, generating financial and environmental values for the local community. Installations are centrally controlled and their operation can be viewed online. The total investment of PLN 625,000 (ca. EUR 156,000) was co-financed by loans on preferential terms (1 per cent rate of return) from NFEP & WM and Bank Ochrony Środowiska of PLN 500,000 (ca. EUR 120,000), while the housing association brought in PLN 125,000 (ca. EUR 30,000). The measures reduced the maintenance costs by almost 80 per cent (unit cost from PLN 7 to 1.8–2.4 per kWh). In order to convince the residents, the housing association organized a meeting with representatives of other successfully implemented undertakings. Now the project is extending – in 2017 the community received financial sources for solar water heaters. Plans are to increase the capacity of renewables to 30 MW [22]. It is expected that more housing associations which already complete RE investments in buildings with a comprehensive thermal modernisation to maximize savings follow this example.

CSOPs could also be used when converting heating systems from fossil to RES – as in the SCORE pilot **in Italy** – that are often not connected to district heating supply with their heat source often being coal. Combined heat and power from local biomass or biogas, for example automatic pellet boiler using Stirling engines are employed to substitute oil or coal heating systems while also offering stabilisation for the grid. Again subsidies for this conversion would be directly complementary to citizen’s investment leading possibly to substantial consumer ownership in RE installations.

The aim of SCORE is not only to demonstrate feasibility of CSOP-financing but also the replicability of the approach in so-called *Follower Cities* across the EU. The transposition of the RED II expected by the end of 2020 will improve the regulatory framework setting standards for all EU Member States. This is of course of particular importance for countries that lag behind as in the case of Poland and the Czech Republic and will further increase the potential of the proposed concept.

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<sup>6</sup> The total energy consumption of the apartments was monitored prior to and after the refurbishment with impressive results: the average annual energy consumption fell by 80%.

<sup>7</sup> Participants were also educated on how to change their everyday behaviour to save more energy ([http://www.foeeurope.org/sites/default/files/publications/community\\_power\\_briefing\\_nov2013.pdf](http://www.foeeurope.org/sites/default/files/publications/community_power_briefing_nov2013.pdf)).

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