SOCIALWATT

CONNECTING OBLIGATED PARTIES TO ADOPT INNOVATIVE SCHEMES TOWARDS ENERGY POVERTY ALLEVIATION

Covenant of Mayors Investment Forum – Energy Efficiency Finance Market Place

19/02/2020, Brussels, Belgium

European Commission | Covenant of Mayors for Climate & Energy

SocialWatt

Energy companies designing and implementing schemes to alleviate energy poverty

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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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Part I

SocialWatt – In a Nutshell

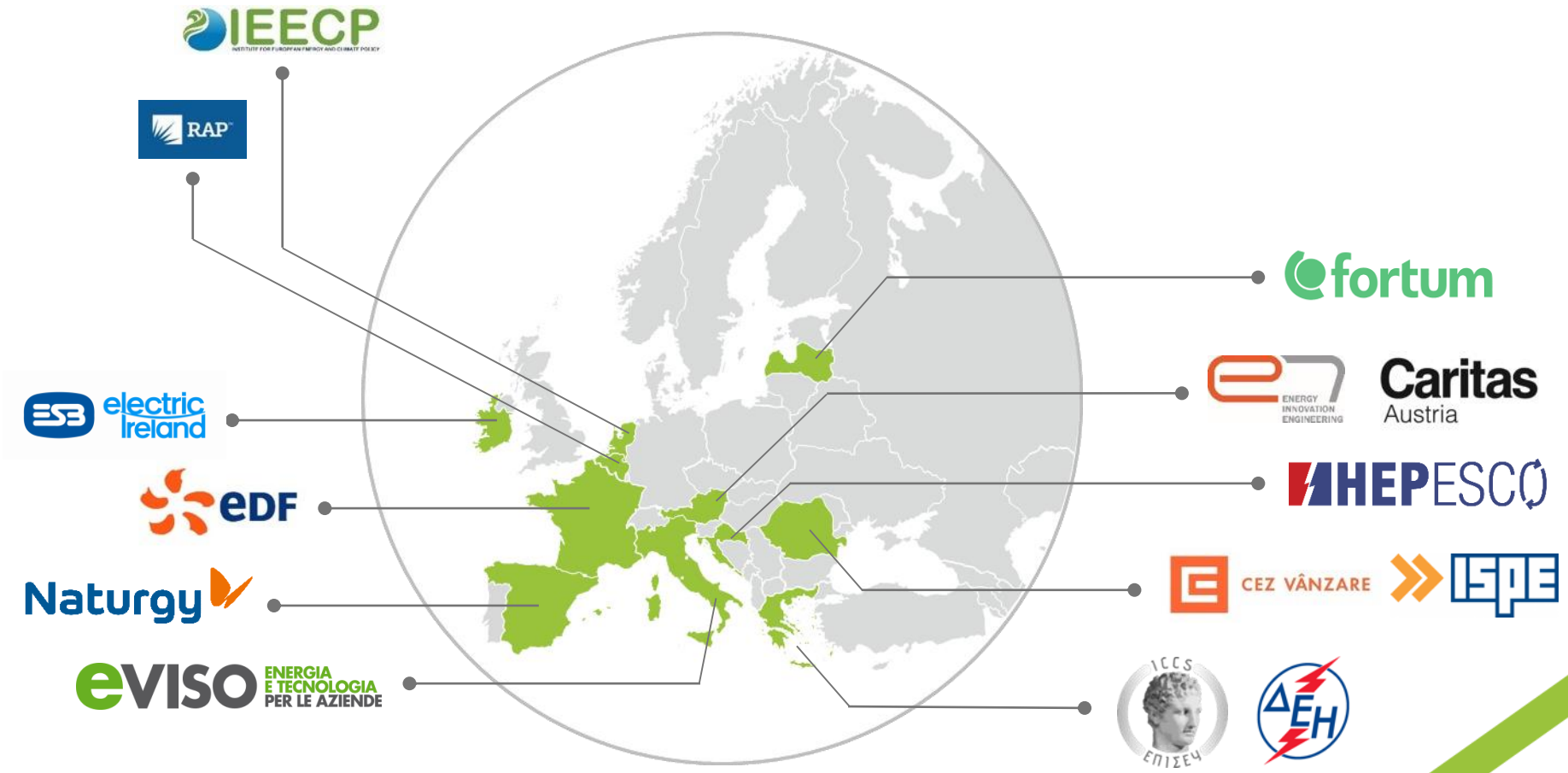
The SocialWatt project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 845905

Project Summary (1/2)

Title	Connecting Obligated Parties to Adopt Innovative Schemes towards Energy Poverty Alleviation (Social Watt)
Funding	European Union's Horizon 2020 Research and Innovation Programme
Started	September 2019
Duration	36 Months
Coordinator	Institute of Communication and Computer Systems (ICCS)
Participants	14
Budget	1,998,297.50 €
Contract No	845905 — SocialWatt — H2020-LC-SC3-EE-2018

Project Summary (2/2)

Who we are?



Scope (1/2)

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.

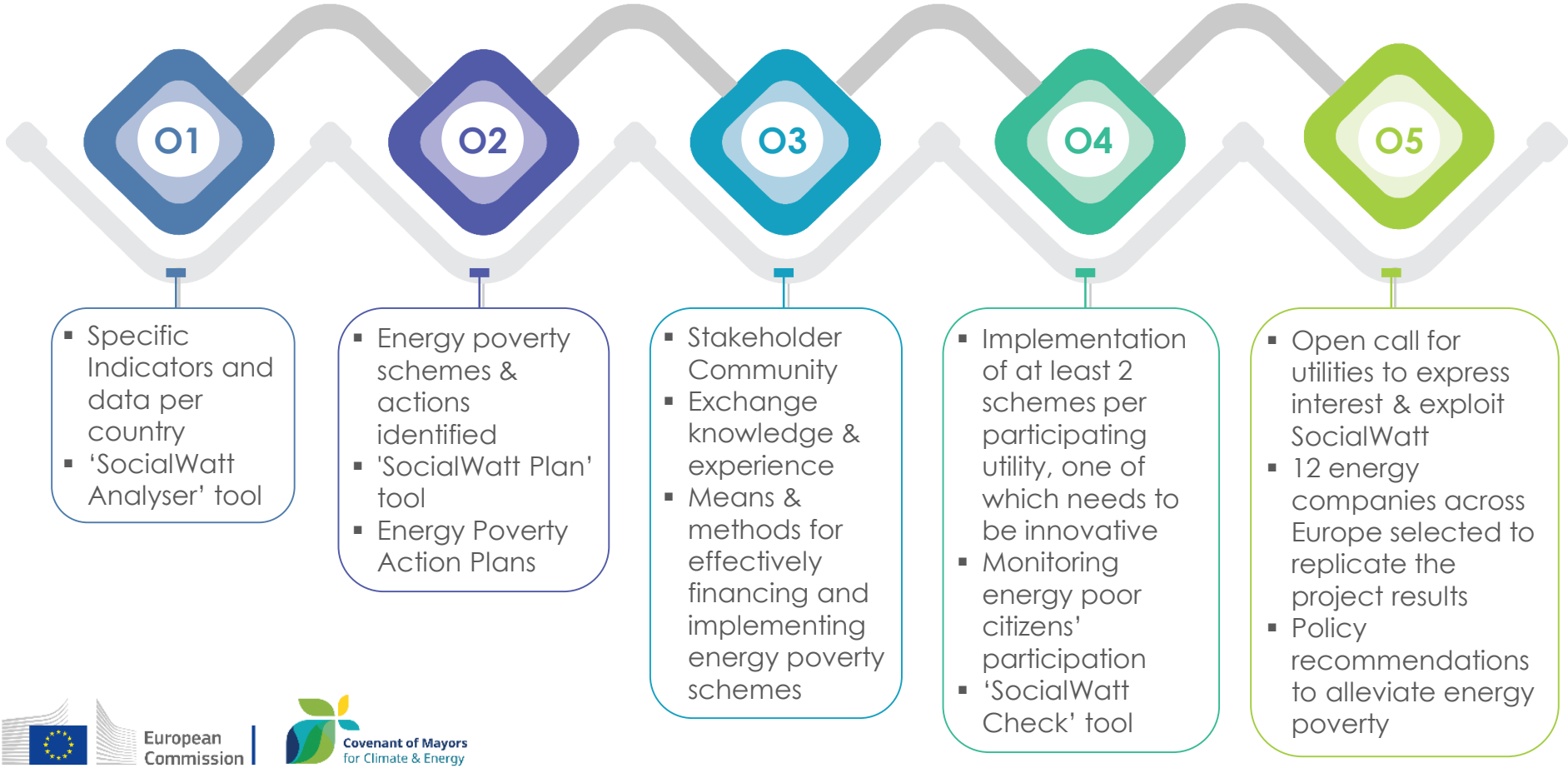
SocialWatt will enable obligated parties under Article 7 of the Energy Efficiency Directive across Europe to develop, adopt, test and spread innovative energy poverty schemes.

Scope (2/2)

SocialWatt will:

- Support utilities and energy suppliers contribute to the fight against energy poverty.
- Implement and replicate innovative schemes to alleviate energy poverty.
- Bridge the gap between energy companies and social services by promoting collaboration and implementing knowledge transfer and capacity building activities that focus on energy efficiency and renewable energy actions to alleviate energy poverty.

Objectives



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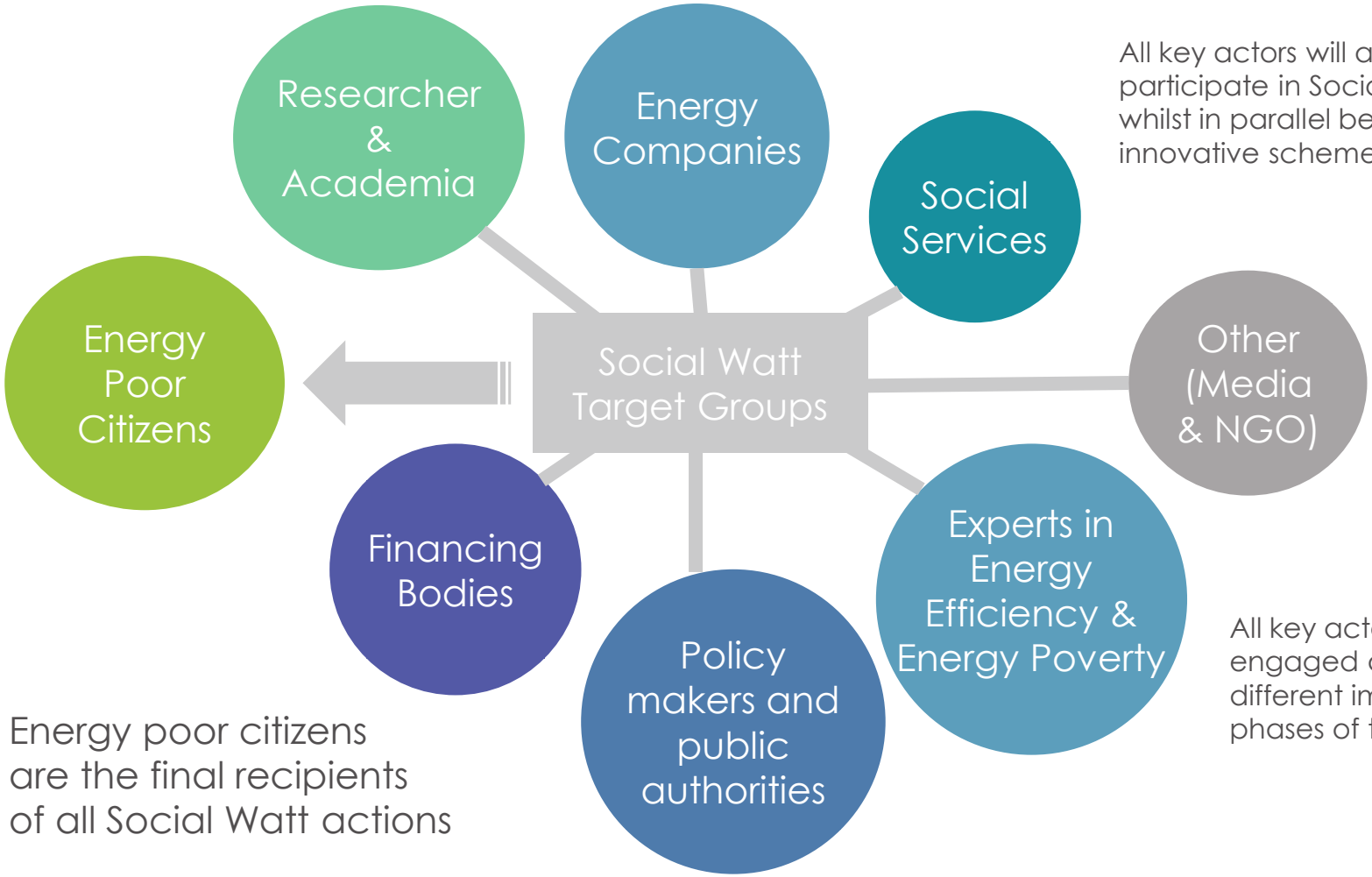
Target Groups



All key actors will actively participate in SocialWatt activities whilst in parallel benefit from the innovative schemes

All key actors will be engaged during the different implementation phases of the project

Energy poor citizens are the final recipients of all Social Watt actions

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Part II

Energy Poverty & Article 7

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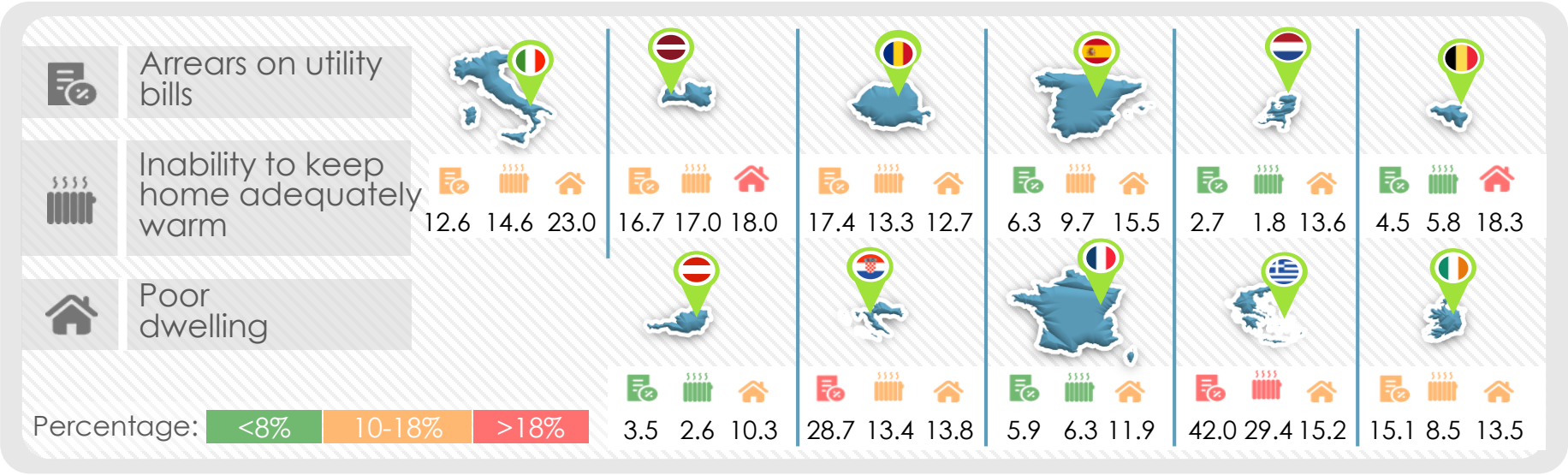
Background



- 57M people cannot keep their home adequately warm during winter
- 104M people cannot keep their homes comfortable enough during summer
- 87M people live in poor quality dwellings
- 52M people face delays in paying their energy bills

Source: Eurostat

Energy Poverty Definitions

- The large majority of European countries have a definition for energy vulnerability, which frequently relies on receipt of social benefits or on socioeconomic groups (as a proxy for income-based vulnerability), age, disability or long-term illness as eligibility criteria.

- Only 8 Member States have official or formally recognized definitions of energy poverty: Belgium, Cyprus, France, Ireland, Romania (in 2021), Slovakia, Spain and UK (5 out of the 11 SocialWatt partner countries).

Energy Poverty Indicators

Different indicators are officially used per country

- 10% indicator
- Low income, high costs
- Arrears on utility bills
- Share of energy expenditure in income twice the national .
- Self-reported EP
- Hidden EP
- Other
- No definition

Energy poverty & EEO Schemes

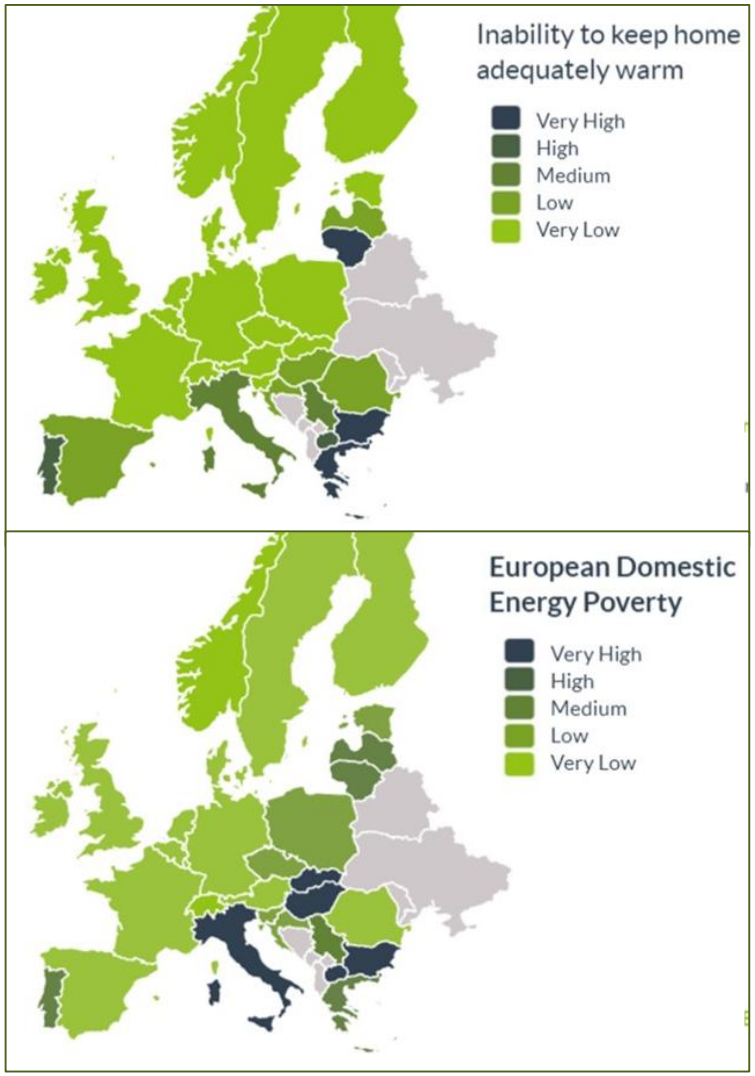
Country	
Austria	Energy efficiency savings to be counted as **50% higher, if savings are from low income households**
Belgium	Alternative policy measures
Croatia	**Energy savings in energy-poor households**, as part of the energy efficiency obligation scheme.
France	Energy efficiency **obligation related to fuel poverty added**
Greece	Alternative policy measures and an energy efficiency obligation scheme (with **measures in vulnerable households accounted for with an increase factor of 1.4**)
Ireland	Alternative policy measures and energy efficiency obligation schemes.
Italy	Energy efficiency obligation scheme
Latvia	Energy efficiency obligation scheme
The Netherlands	Alternative policy measures
Romania	Alternative policy measures
Spain	Obligated parties contribute to the National Energy Efficiency Fund the amount designated by the ministry.

Status Quo on Energy Poverty

Report on the Status Quo of Energy Poverty and its Mitigation in the EU (www.socialwatt.eu)

- Energy Poverty definitions and indicators
- Causes, impacts, prevalence and levels of energy poverty in the 11 SocialWatt countries
- Good practice policies, actions and programmes to alleviate energy poverty:
  - Bill support and disconnection prevention
  - Energy saving and energy bill advice
  - Low cost energy efficiency measures
  - Energy efficiency & renewable energy measures & investments

SocialWatt Interactive Map



Challenges Identified

Early stage challenges to design and implement innovative schemes:

- How to finance support for energy poor households
- What measures are both fundable and provide a significant energy poverty alleviation impact
- How to define and target priority groups of energy poor households
- How to achieve take up and reach
- Bureaucracy

Example of an Innovative Scheme (1/2)

An example of an innovative scheme being considered by the Public Power Corporation S.A. (PPC):

- Involved parties: PPC, Regional Government and Energy Technologies Industry (i.e. construction industry, technology retailers or associations)
- Target group: **energy poor households**
- Provision of **energy technologies on a competitive price by the retailers (i.e. a discount)**, along **with a grant provided by PPC.**
- A bank with the guarantee of the Region would provide **soft loans** to customers in order to pay the remaining amount for the technologies/project
- Energy poor households will **pay back** the loan **through** their **energy bills**

Example of an Innovative Scheme (2/2)

PPC considers the development of a rolling fund for supporting energy efficiency projects for energy poor Households

Energy poverty "A situation where a household or an individual is **unable to afford basic energy services to guarantee a decent standard of living** due to a combination *of low income*, high energy expenditure and low energy efficiency of their homes"

Rolling Energy Fund

Repayments

Funding Cycle

Invest in ES, EE, RES

Savings

SEED CAPITAL
1) Deposits & Loans Fund (funds from Municipalities & the European Investment Bank)
2) PPC

BENEFICIARIES
Energy Poor Households

savings
kW
Capital pool
€
kWh

WHO
Municipalities & PPC (within the framework of Obligation Schemes)

WHAT
- Promoting Energy Savings
- Promoting Energy Efficiency
- Renewable Energy Systems - Microgrids

HOW

MUNICIPALITIES & UNIVERSITIES
- **Energy Poverty Registry**

Households Record
Technical & Social Data
- **INTEGRITY**
- **RESEARCH**
- **INNOVATION**
- **POLICY**
- **PARADIGM CHANGE**
- **TECHNOLOGY ADAPTATION**

***Work in Progress by PPC & West Attica University**

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Part III

SocialWatt Decision Support Tools

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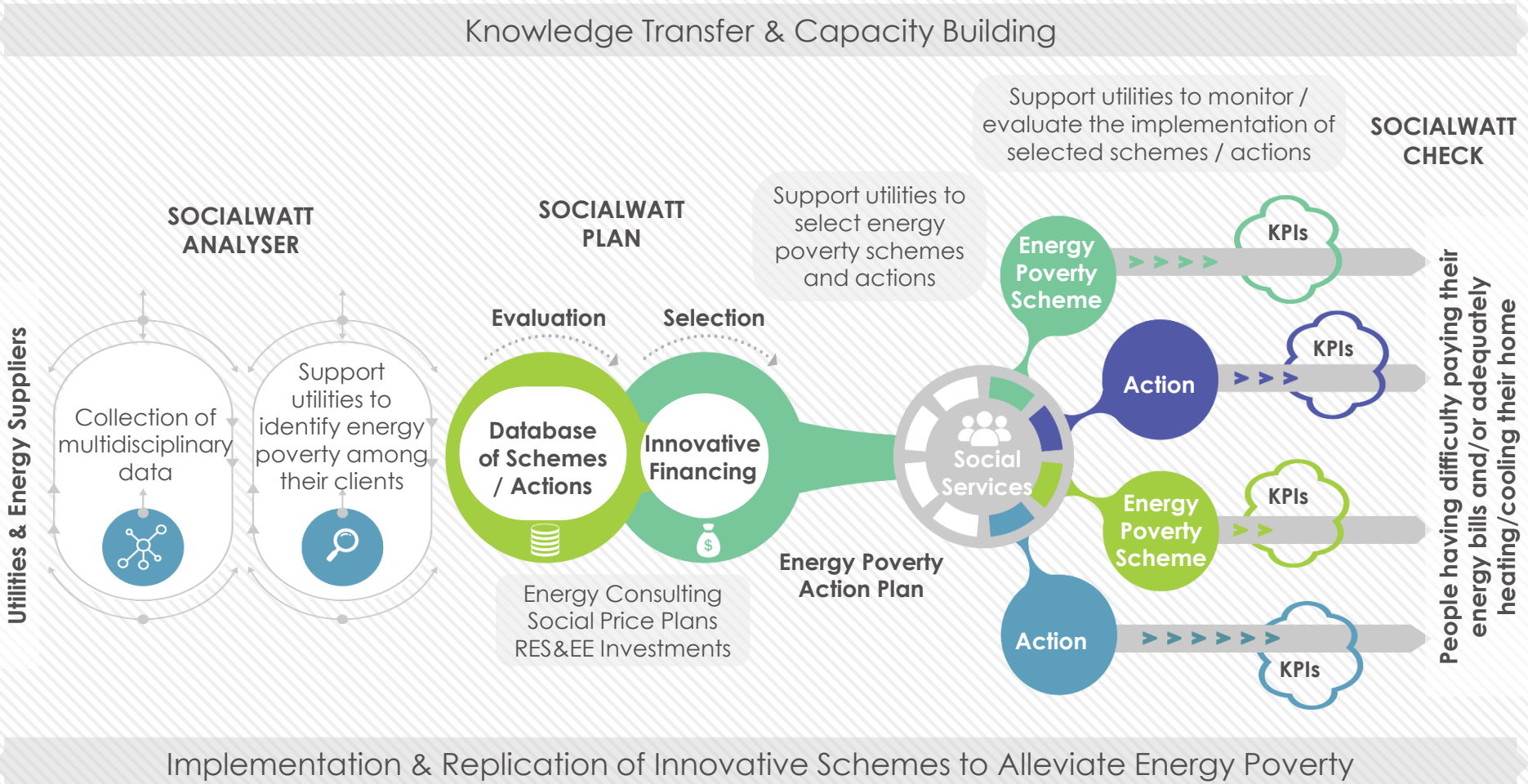
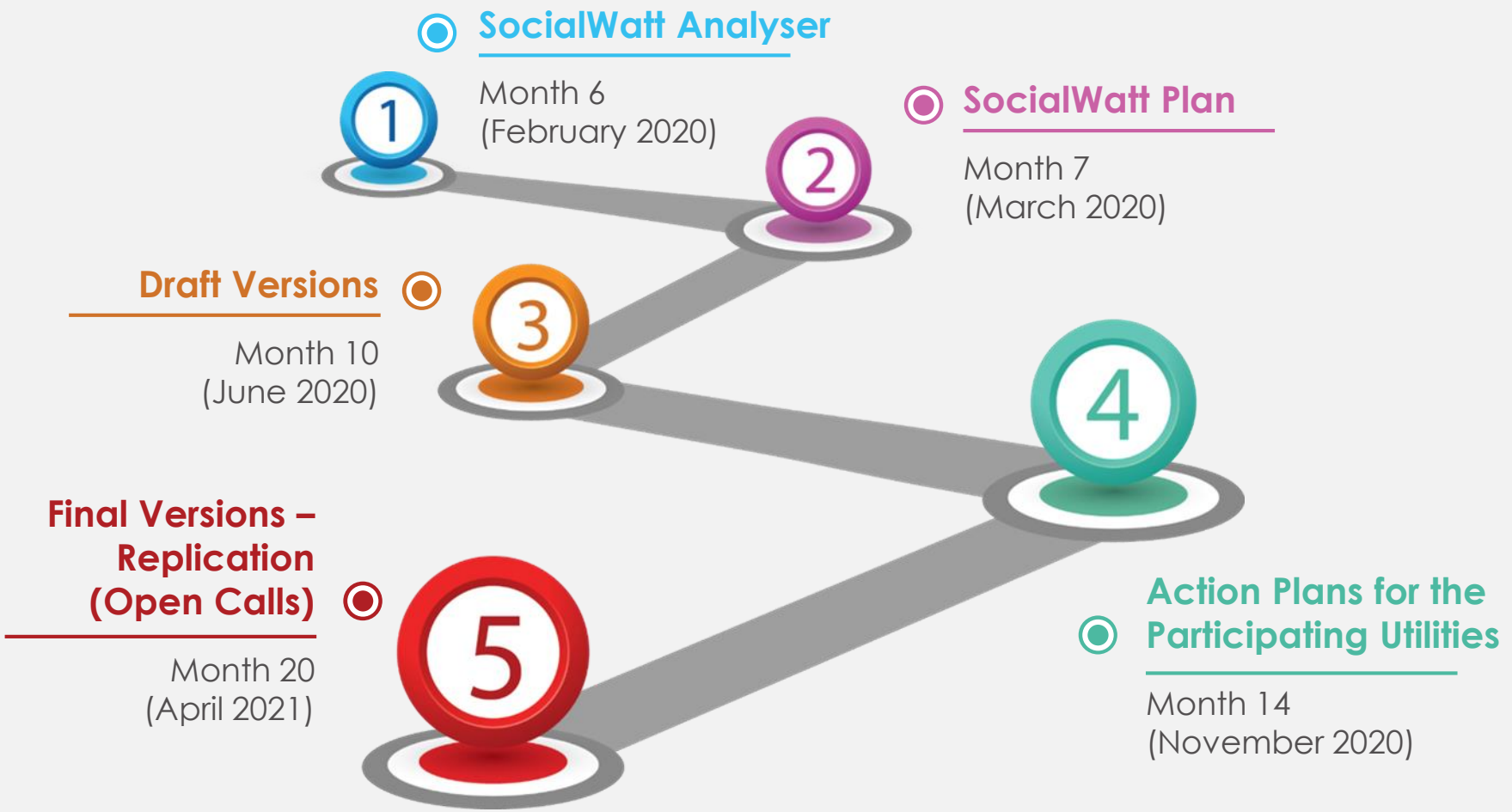
Decision Support Tools (1/3)

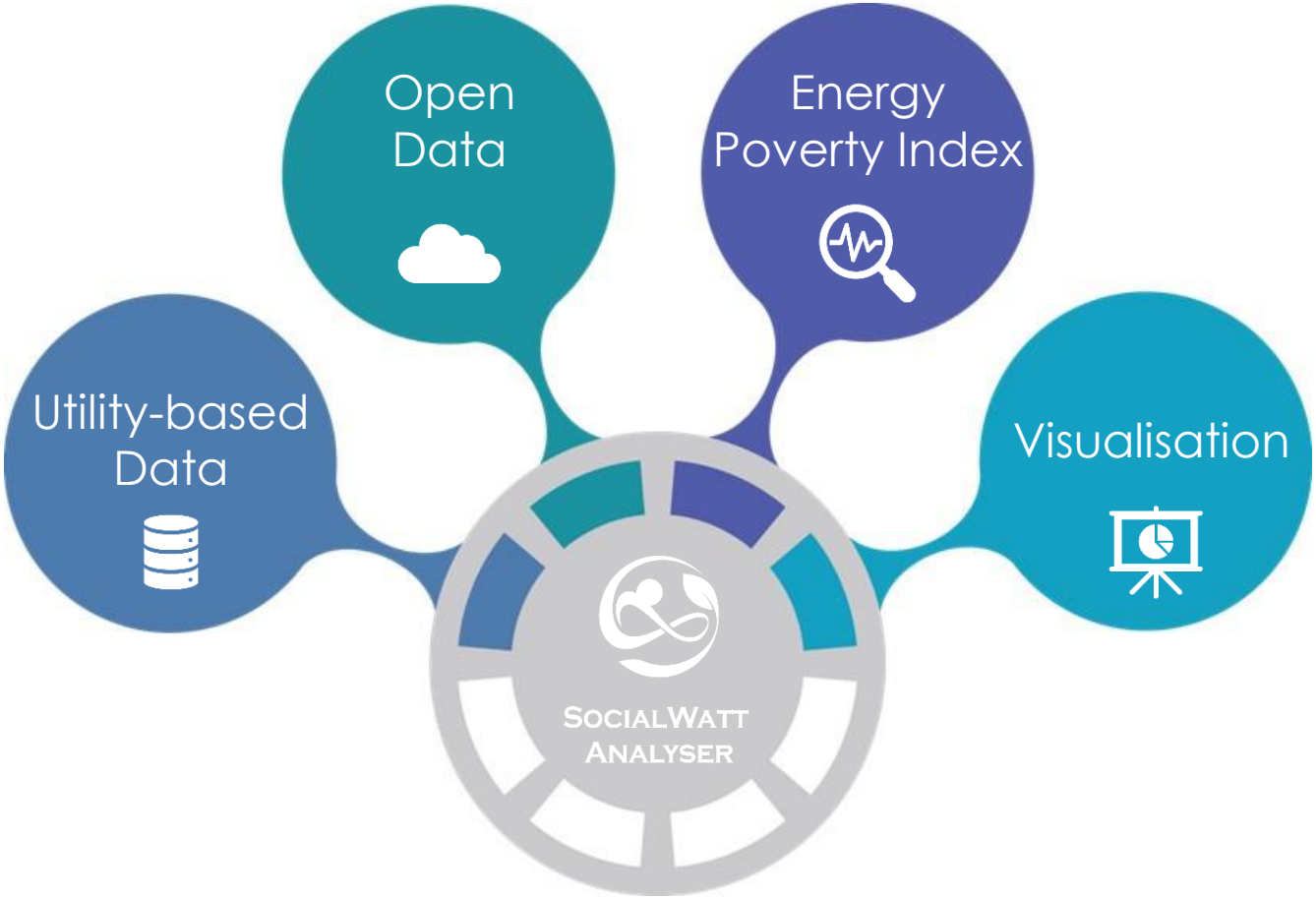
Decision Support Tools (2/3)



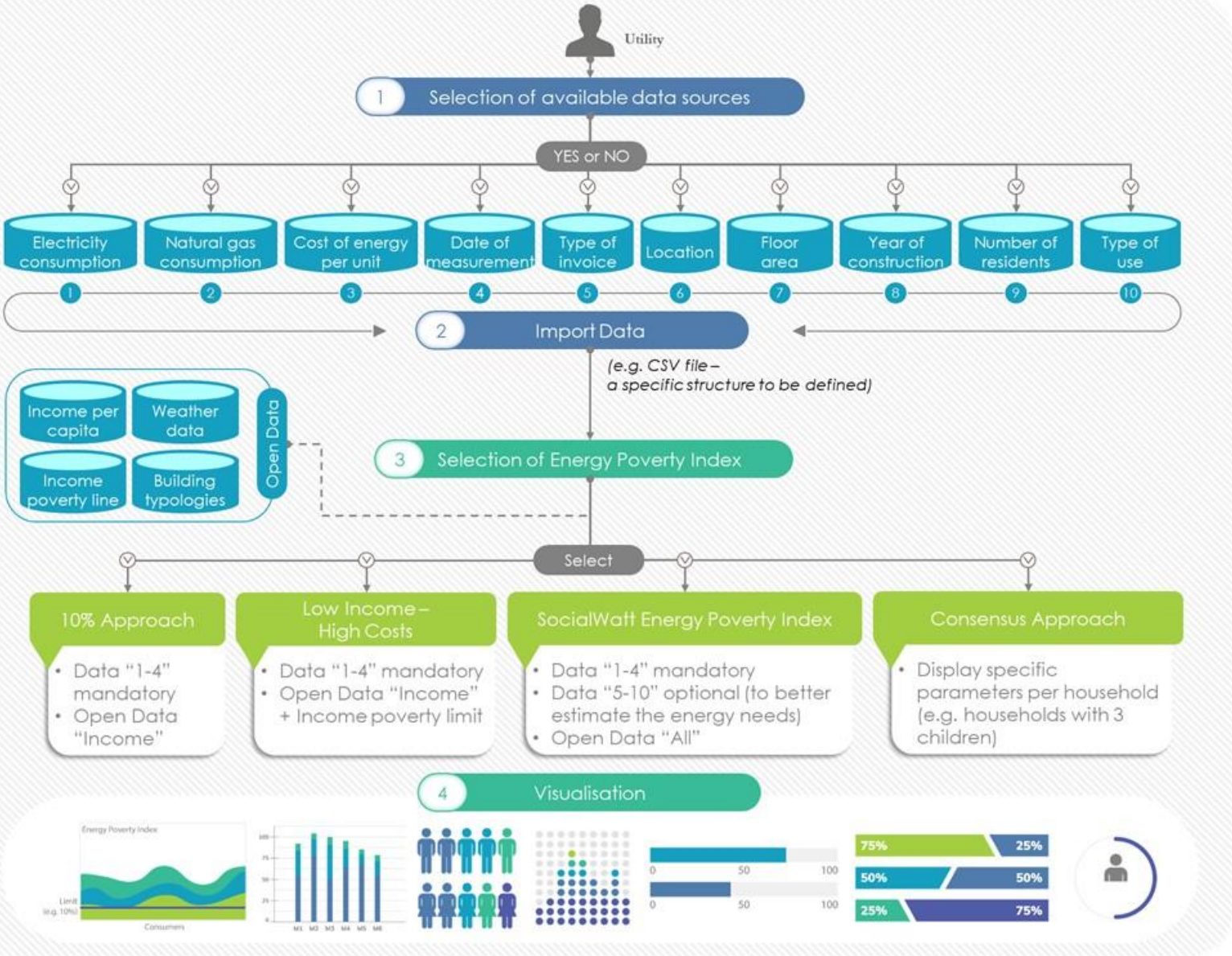
Decision Support Tools (3/3)



SocialWatt Analyser (1/7)



SocialWatt Analyser (2/7)



SocialWatt

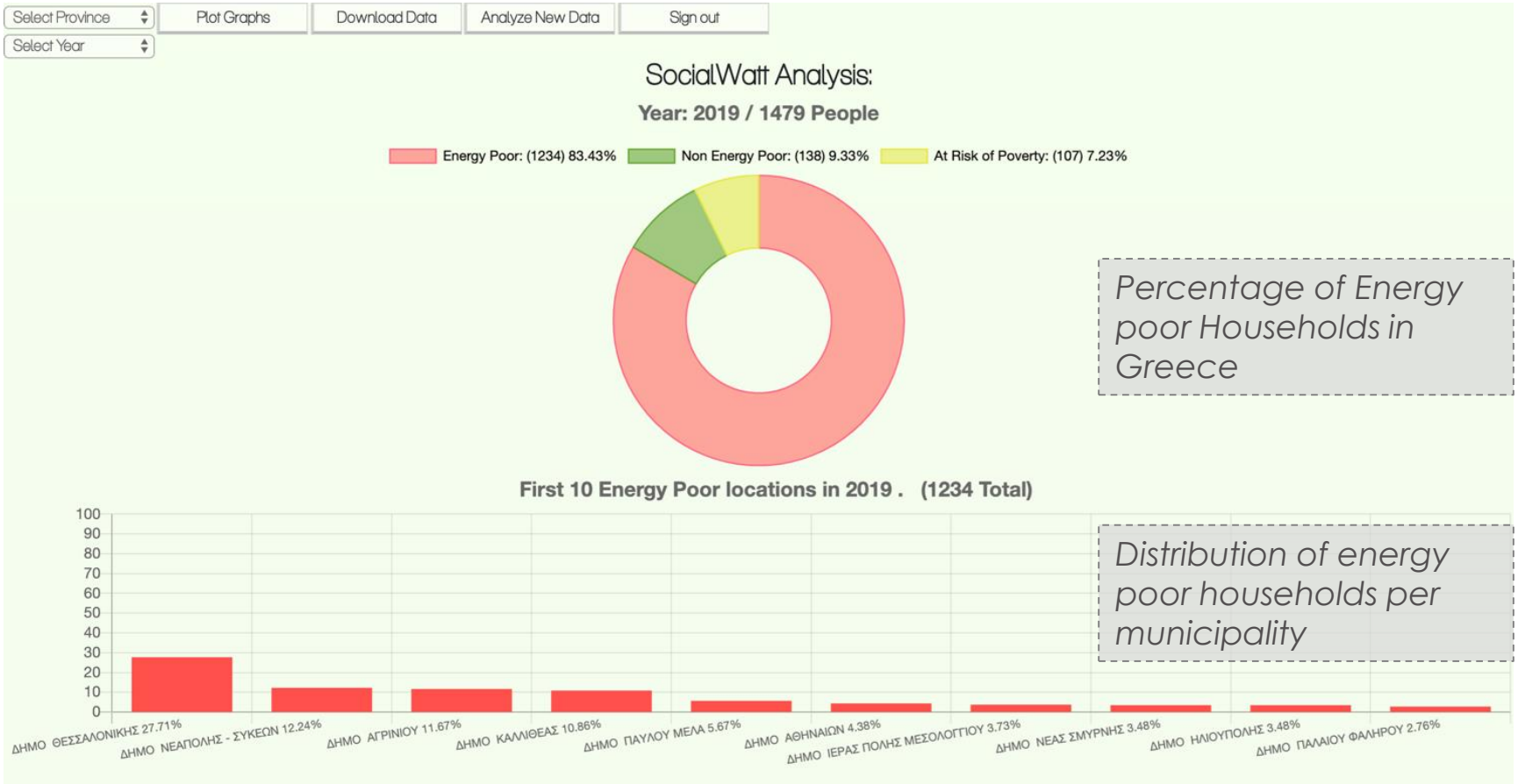
SocialWatt Analyser (3/7)

SocialWatt Energy Poverty Index:

- If the actual energy consumption (e.g. electricity, natural gas, etc.) of a household is lower than the theoretically required for maintaining thermal comfort (heating/cooling), the household is classified as energy poor. Otherwise, the ratio between energy cost and income (in a monthly or annual basis) is taken into consideration (10%, LIHC, etc.).
- The novelty of the proposed index is the integration of two dimensions for analysing energy poverty (A. Income; B. Thermal comfort (energy needs)), compared to the income-based existing energy poverty definitions.

SocialWatt Analyser (4/7)

SocialWatt Analyser (5/7)



Percentage of Energy poor Households in Greece

Distribution of energy poor households per municipality

SocialWatt Analyser (6/7)

Comparison between national results for Greece and for a specific area (e.g. Municipality of Thessaloniki)

SocialWatt Analyser (7/7)

Customer	Year	Annual Energ	Annual Energ	Poverty Inde	Location
1	2013	1072	201	EP	Saluzzo
1	2014	1160	203	EP	Saluzzo
1	2015	1104	196	EP	Saluzzo
1	2016	1314	220	EP	Saluzzo
1	2017	1270	262	EP	Saluzzo
1	2018	1186	260	EP	Saluzzo
1	2019	862	207	NEP	Saluzzo
2	2014	3082	720	EP	CASALGRASSO
2	2015	448	181	NEP	CASALGRASSO
2	2016	297	157	NEP	CASALGRASSO
2	2017	356	208	NEP	CASALGRASSO
2	2018	104	55	NEP	CASALGRASSO
3	2015	348	82	NEP	VILLAFALLETTO
3	2016	3971	866	EP	VILLAFALLETTO
3	2017	4166	817	EP	VILLAFALLETTO
3	2018	4273	876	EP	VILLAFALLETTO
3	2019	3551	738	EP	VILLAFALLETTO
4	2015	5880	1735	EV	CAVALLERLEONE
4	2016	6620	1684	EP	CAVALLERLEONE
4	2017	6204	1262	EV	CAVALLERLEONE
4	2018	6657	1439	EP	CAVALLERLEONE
4	2019	5347	1180	EP	CAVALLERLEONE
5	2014	471	125	NEP	CARAMAGNA PIEMONTE
5	2015	4496	1087	EP	CARAMAGNA PIEMONTE
5	2016	5970	1449	EV	CARAMAGNA PIEMONTE
5	2017	6408	1283	EV	CARAMAGNA PIEMONTE
5	2018	6011	1285	EV	CARAMAGNA PIEMONTE
5	2019	6468	1401	EV	CARAMAGNA PIEMONTE

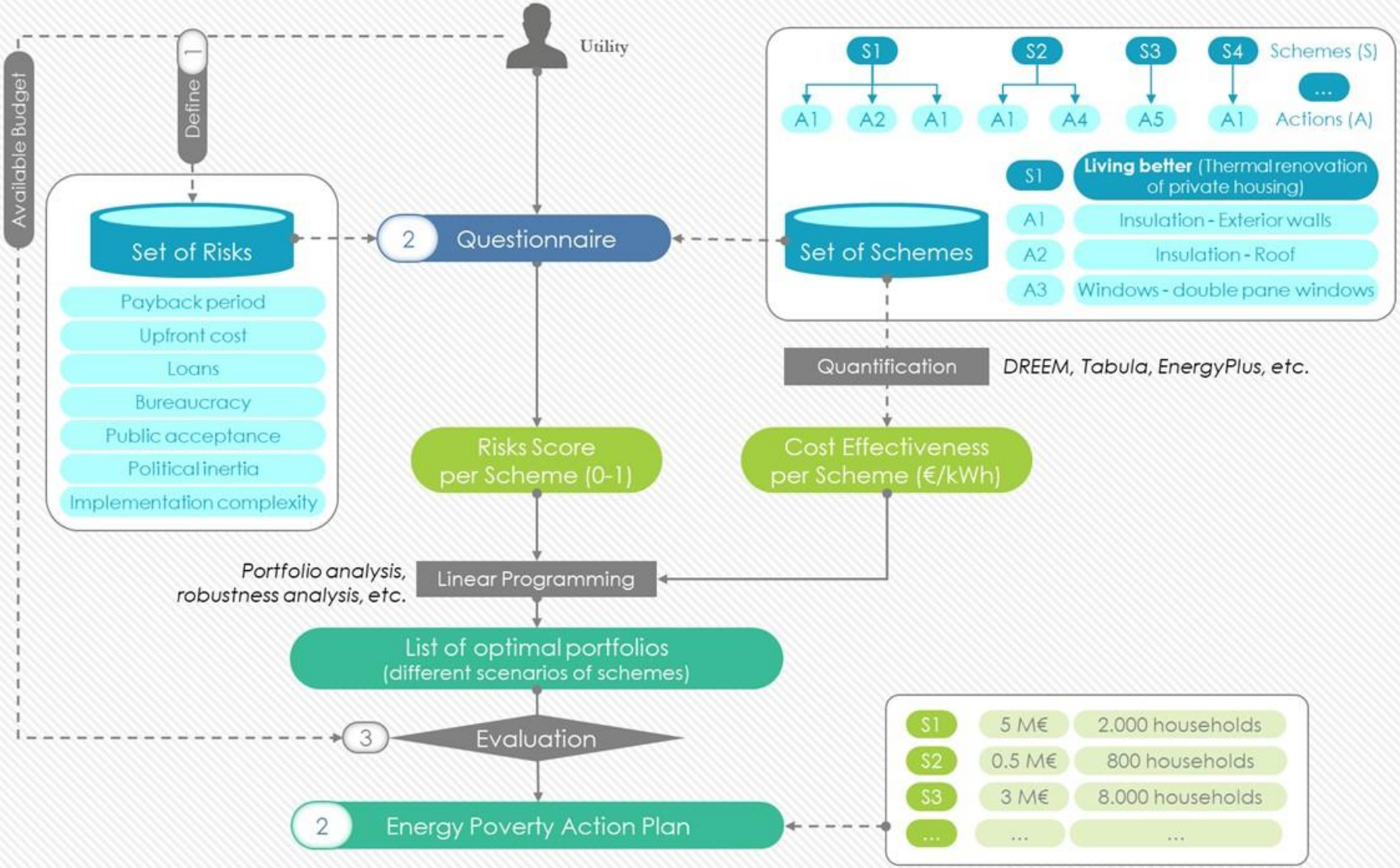
Report with personalised information about each customer:

- *Anonymised Household 1 was energy poor until 2018 but not on 2019.*
- *Anonymised Household 4 fluctuates between energy poverty and being at risk of energy poverty.*

SocialWatt Plan (1/3)

- Different energy poverty schemes are being evaluated and incorporated in the SocialWatt Plan tool.
- The schemes comprise both low (behavioural) and high cost actions.
- The tool will provide utilities with a set of optimal portfolios, comprising different combinations of energy poverty schemes, along with a budget allocation for each scheme and expected number of customers to be involved.
- The optimisation is based on set targets and constraints. More specifically, the proposed portfolios will be evaluated against the objectives of minimising both investment cost and associated risks.

SocialWatt Plan (2/3)



SocialWatt Plan (3/3)

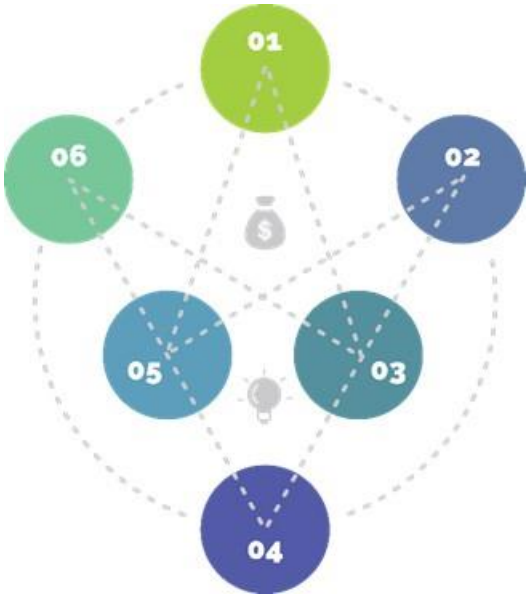
SocialWatt Plan will consider at least **25 different schemes**

Schemes & Actions

S1 Greening home
Actions: Insulation-exterior walls; insulation- roof; windows-double pane windows

S2 Renovate your home
Actions: Leaking Roofs; Plumbing insulation; Fixing Air leakages; Efficient lighting (LED); White appliances

S3 Smarter home
Actions: Smart Meters; Thermostats; Sensors



Financing Mechanisms

F1 Subsidy
F2 Partial subsidy
F3 Scalable Subsidy
F4 Financial Incentive
F5 Direct Payment
F6 Eco-Loans
F7 TAX reduction
F8 Collaboration with the private sector
F9 Supporting fund
F10 ESCO or co-investors

SocialWatt Check (1/2)

Key monitoring indicators

Energy reduction

CO_2 reduction

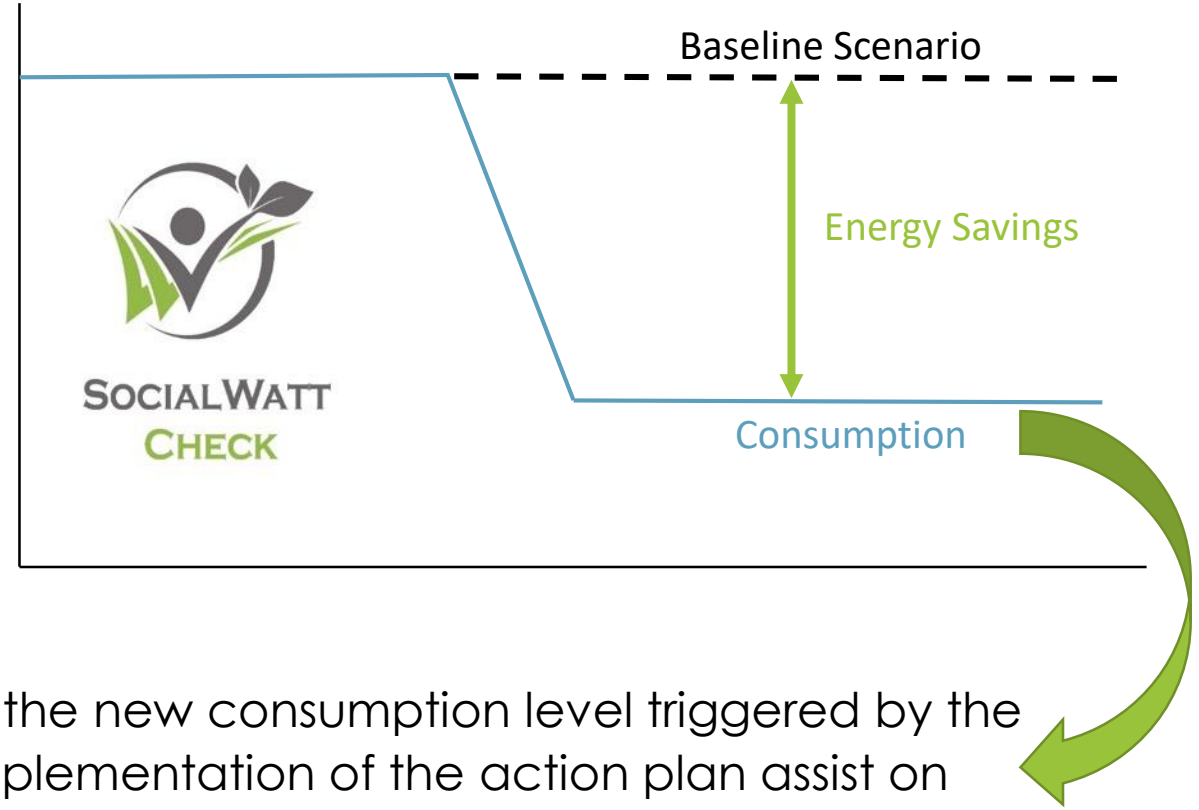
Energy cost reduction

Increase of RES production

The tool will enable utilities to track progress, identify in a timely manner risks/threats, exploit opportunities and meet targets

SocialWatt Check (2/2)

Verification Process



An analytical methodology will enable utilities verify energy savings, taking into consideration Article 7 of EED

Does the new consumption level triggered by the implementation of the action plan assist on decreasing the number of energy households?

Lessons Learnt

- Access to accurate housing and income data is crucial for the personalised analysis of energy poverty. Utilities need to establish effective communication lines with customers and other key stakeholders (e.g. social services) to be able to help them through targeted schemes.
- Correct targeting might be more important than defining a strict energy poverty definition.
- Energy poverty is a sensitive issue, therefore special focus should be given on protection of personal data.

Contact

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Questions for discussion

- Do you have examples of cities or municipalities partnering with utilities to improve the energy efficiency of energy poor households? What could we learn from this experience?
- Do you have examples of financing models for energy poverty programmes?