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UNIVERSITÀ DEGLI STUDI DI TORINO

Dipartimento Interateneo di Scienze, Progetto e Politiche del Territorio

La Foresta

CONSORZIO FORESTALE ALTA VALLE SUSA

AMICO COOPERATIVA SOCIALE

European Commission

Horizon 2020
European Union funding
for Research & Innovation

IMPLEMENTATION OF THE CSOP MODEL IN SUSA VALLEY, ITALY

June 24th, 2021

Politecnico di Torino

Sara Torabi, Jacopo Toniolo, Patrizia Lombardi

SCORE

Co-own. Prosume. Renew.

Supporting Consumer co-Ownership in Renewable Energies

This project has received funding from European Union's Horizon 2020 framework programme for research and innovation under Grant Agreement No 784960.

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Methodology

CREATION OF AN ENERGY COMMUNITY

"What elements are necessary for the birth of an energy community?"

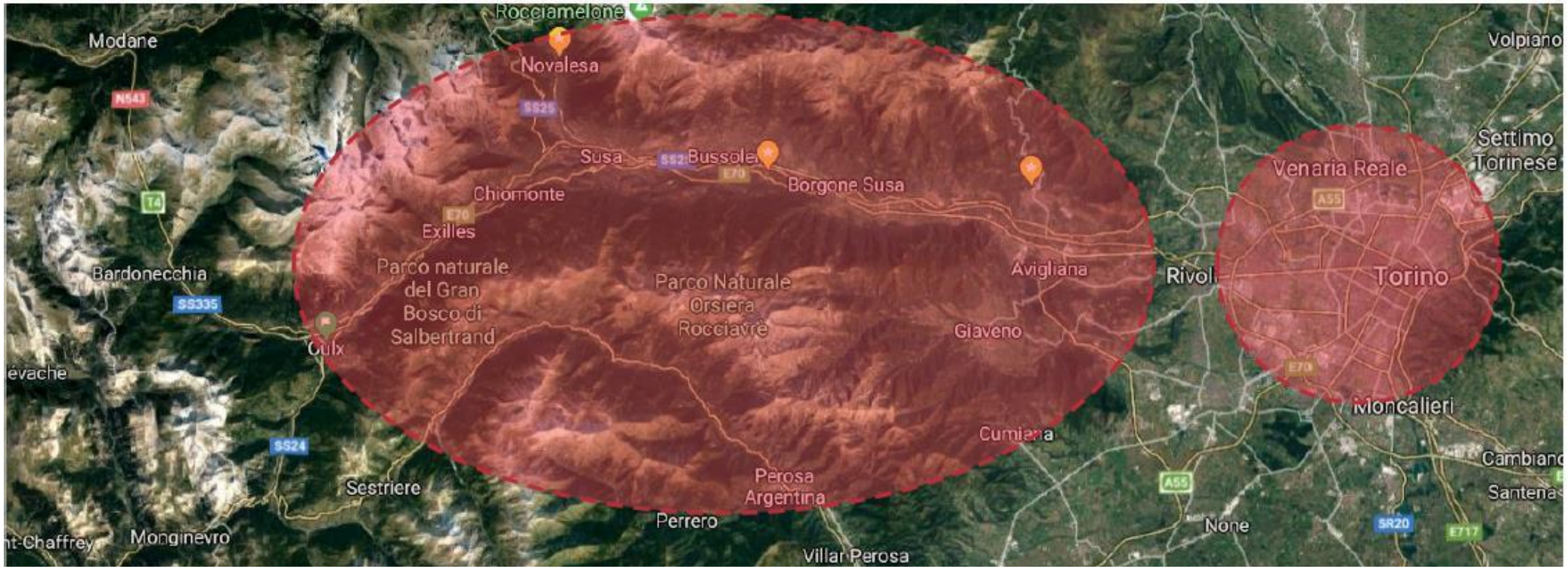
	TECHNICAL STRUCTURE		SOCIAL STRUCTURE		LEGAL AND FINANCIAL STRUCTURE	
	Phase I	Phase II	Phase III	Phase IV	Phase V	Phase VI
	Preparation	Preliminary and feasibility analysis	Identification of key persons	Target group involvement	Preparation	Implementa-tion
METHOD	2 surveys	Dossier	Stakeholders analysys, info-events, workshops	Questionnaire	Discussion with a panel of expert	Cooperative company
OUTPUT	Description of buildings and energy plant system	Energy retrofit alternatives and best scenario selection	Inform and sensitize people on energy and environmental issues	Definition of citizens cluster	Definition of the contract/ agreement	**Creation of energy community**

TECHNICAL STRUCTURE

SOCIAL STRUCTURE

LEGAL AND FINANCIAL STRUCTURE

Application - Susa Valley (Italy)



Oulx, Novalesa, Villar Dora, San Giorio di Susa, Almese, Susa, Bardonecchia, Bussoleno, Giaglione, Rueglio

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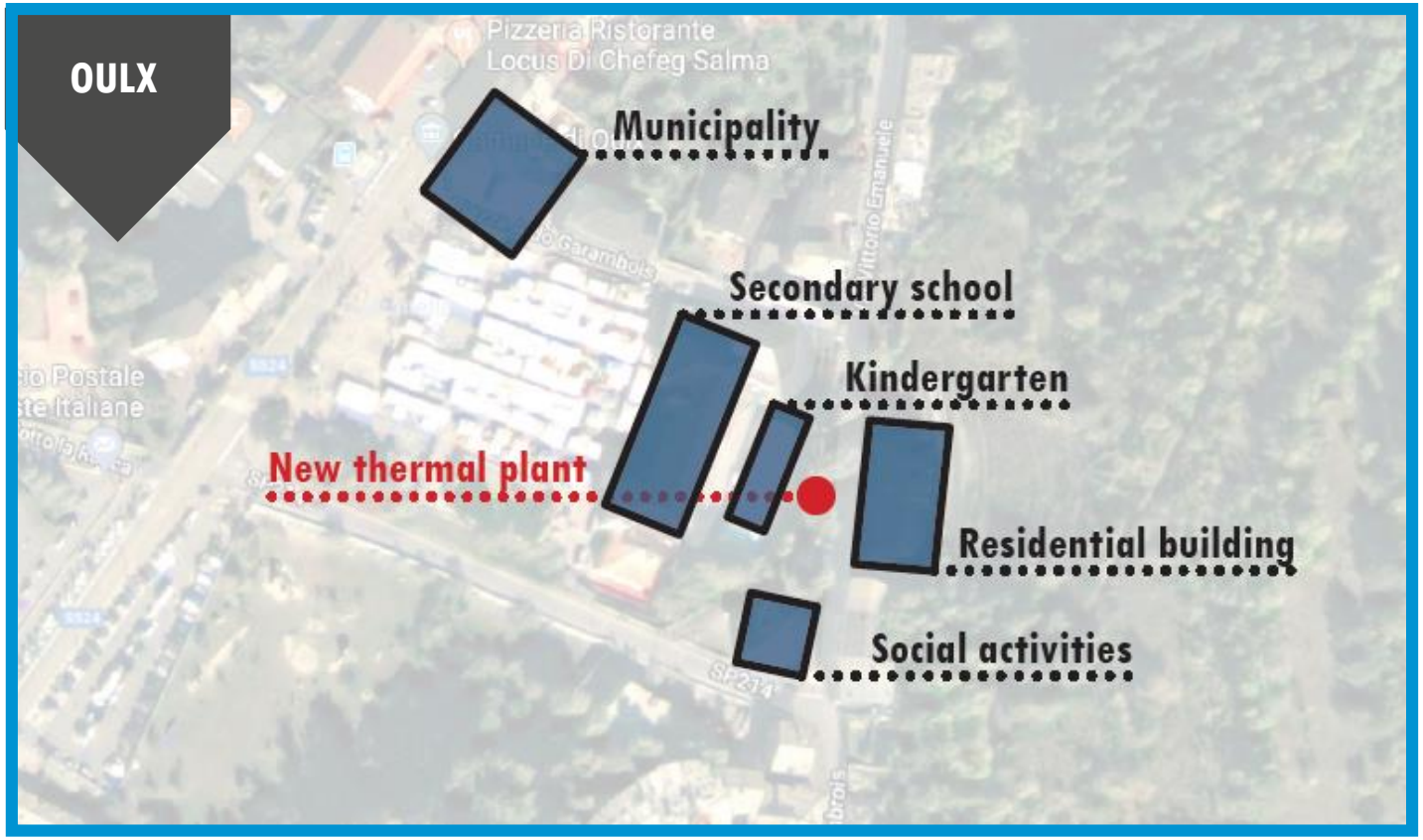
Technical structure - PHASE I

Phase I

Preparation

2 surveys

Description of buildings and energy plant system



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Technical structure - PHASE II

Phase II
Preliminary and feasibility analysis

Dossier

Energy retrofit alternatives and best scenario selection

KEY PERFORMANCE INDICATORS (KPIS) IMPACT ASSESSMENT

BEST SCENARIO SELECTION

Category	Indicator	A.1	A.2	A.3	A.4	A.5	A.6
Environmental	Primary energy saving [kWh/y]	525269	549640	577191	581242	581254	581169
	Global emissions CO2 reduction [kgCO2eq]	137.427	143.520	150.408	151.420	151.423	151.402
	Local emissions NOX reduction [kg/y]	94,55	98,94	103,89	104,62	104,63	104,61
	Local emissions PM10 reduction [kg/y]	6,83	7,15	7,50	7,56	7,56	7,56
Economic	Payback period (PBP) [years]	3,9	5,6	8,2	8,1	8,1	8,1
	Investment cost [euro]	350.675	522.925	802.425	802.425	802.425	802.425
	Public incentives [%]	40	40	40	65	65	65
	Savings on energy expenditure [euro/year]	89296	93439	98122	98811	98813	98799
	Labor cost [euro]	80.925	120.675	185.175	185.175	185.175	185.175
	Labor cost by a social cooperative [euro]	20231	30169	46294	46294	46294	46294
	Material cost [euro]	269.750	402.250	617.250	617.250	617.250	617.250
	Material cost purchased on the territory [euro]	94413	140788	216038	216038	216038	216038
	Running cost [euro]	59127	48681	38567	36258	36251	36299
	Type Thermal Account Access (TAA) vs. Energy Efficiency Certificates (EEC)	TAA	TAA	TAA	TAA	TAA	TAA
Technical	Increase of plant system efficiency [%]			9,80%			
	Installed power reduction [kW]			175			
Social	Architectural impact [-]	3	1	1	1	1	2

Social structure - Phase III

How can people be included to participate actively, becoming prosumer and/or plays an active role in society?

- **A** Stakeholders' analysis
- **B** Informative events
- **C** Workshops

Phase III

Identification of key persons

Stakeholders analysys, info-events, workshops

Inform and sensitize people on energy and environmental issues

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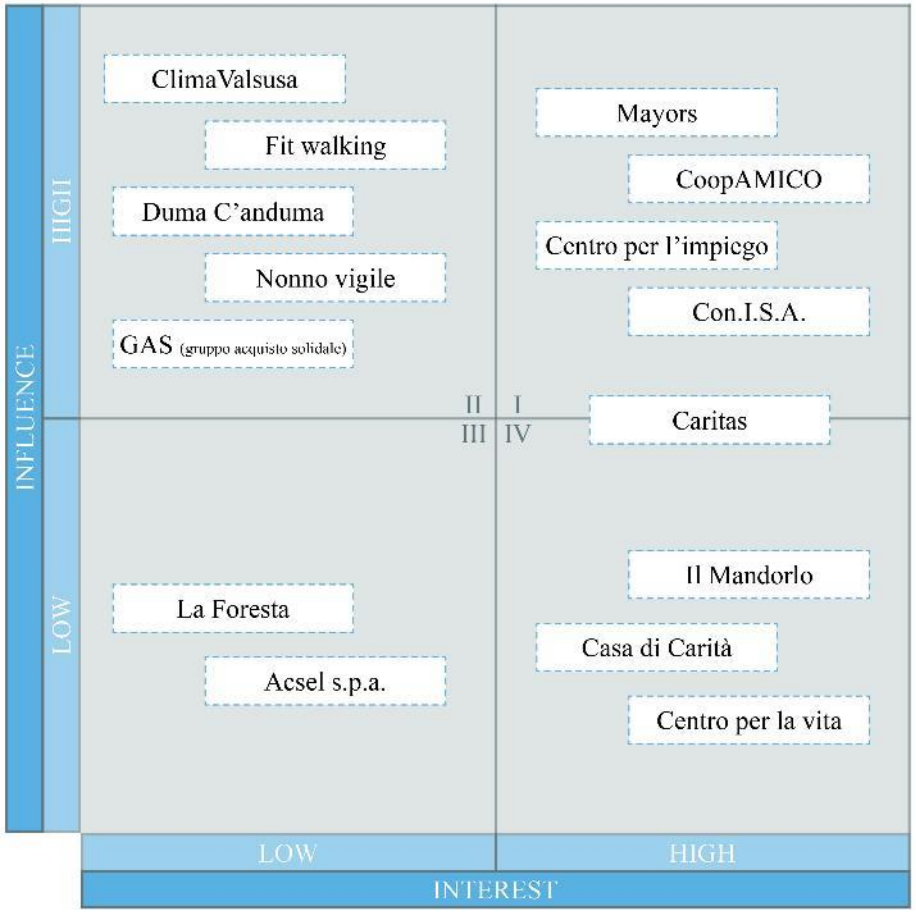

- **MAYORS**
- **COOPAMICO (social cooperative)**
- **ACTIVE CITIZENS**
- **LA FORESTA (cooperative)**

1. **Email**
2. **Telephone**
3. **In person**

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STEP 1

MEETING WITH LOCAL INSTITUTION

- To disseminate the energy community principals;
- To define how to involve all citizens.

STEP 2

MEETING WITH CITIZENS

- To disseminate the energy community principals;
- To make them interested in renewable energy community project.

12 events organized in Susa Valley

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WORKSHOP WITH VULNERABLE CITIZENS
To understand obstacles and problems in participating in energy community project.
> **PREFERENCE ACTIVITY**

WORKSHOP WITH CITIZENS IN GENERAL AND MAYORS
To co-create the future energy community scenario.
> **STORYTELLING**

WORKSHOP WITH STUDENTS
To plan the future energy community in their municipality.
> **LECTURING**

➢ THEORITICAL MOMENTS
Some fundamental notions about the project topic: the meaning of energy transition, the use of energy from renewable sources, the energy community and the share ownership plan by consumers.

➢ PRACTICAL MOMENTS
Moments of learning verification through answers to questions and specific activities in order to express their thoughts and create a constructive debate.

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WORKSHOPS
7th Feb 2020

WORKSHOP WITH VULNERABLE CITIZENS

«Participation in local renewable energy projects»

Part A

- most of citizens are **not satisfied with the energy expenditure** since the heating bills are too high;
- **Low condition of efficiency of the envelope** (windows, presence of wall insulation, etc.). It is the factor that has the greatest impact on energy consumption.

Part B

- "small source of income" (11.4%).
- "environmental issues" and "low investment" (28.5%)
- "the trusted administrator helps and represents consumers" (8.5%)
- "independence from the national energy supply" (22.8%).

Part C

- **Distrust** because, being an innovative project, there is no one who can say if the project will be successful. In this case no one can give feedback on the success of this type of project;
- **Control and verification** due to the disparity of investment of the various actors. This is to avoid that if an entity invests a great amount of money, it is more represented;
- **Bureaucracy,** the topic and the necessary documentation could be complicated for simple citizen not working in the legal field.

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WORKSHOPS
17 Apr 2020
23 Apr 2020

WORKSHOP WITH CITIZENS AND PUBLIC ADMINISTRATION

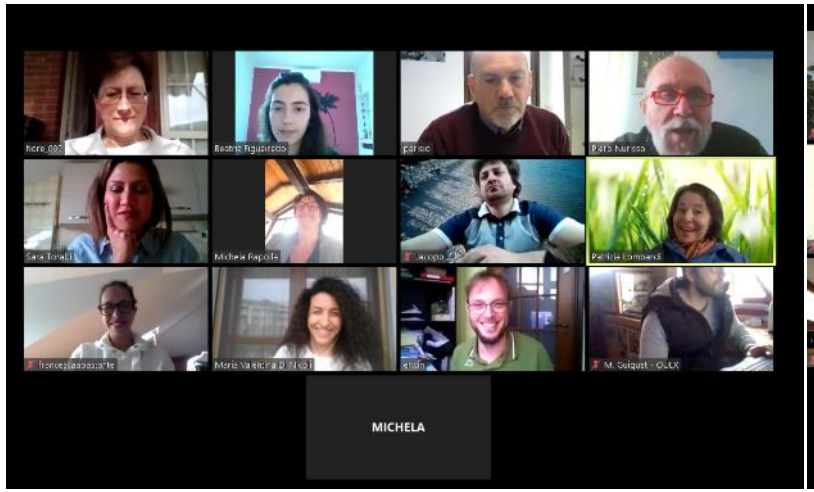
«Creation of energy community in Susa Valley»

PURPOSES

- Implementation of "Storytelling", which will provide the guiding framework for the scenarios whilst remaining flexible to which end users/type of action is of interest for the participants. Participants create their project story from an end-user perspective.
- Creating Spatial Database mapping different scenarios based on GIS methodology.

Part A

Public administration



Part B

Citizens

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«Creation of energy community in Susa Valley»

STORY SPINE 01 - Current Scenario

STORY SPINE_1: Definition of the current scenario on the basis of individual experiences, aimed at creating an energy community in the Susa Valley.

WORKSHOP | La creazione della comunità energetica in Valle di Susa

Story Spine 1 - Stato Attuale
23/04/2020

*Campo obbligatorio

Indirizzo email *

Il tuo indirizzo email

C'era una volta, un (cittadino/esperto)_____ che viveva in Val di Susa. *
Descrivi il personaggio in termini di età, professione, condizione lavorativa ecc. Massimo 5 righe

La tua risposta

Da punto di vista dell'utilizzo dell'energia termica, la sua giornata tipo è... *
Descrivi la giornata tipo del personaggio illustrato in precedenza focalizzando la storia sulle sue abitudini energetiche rispetto al sistema di riscaldamento. Massimo 10 righe

La tua risposta

Per _____ (nome del personaggio) le principali problematiche (max 5) che riscontra in merito all'utilizzo e gestione dell'energia sono... *
Elenca un massimo di 5 problematiche che ritieni sarebbe importante risolvere dal punto di vista dell'energia per il riscaldamento. Ad esempio: spese, trasporto dell'energia ecc.

La tua risposta

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23 Apr 2020

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«Creation of energy community in Susa Valley»

STORY SPINE 02 - Future Scenario

STORY SPINE_2: Co-creation of a future scenario for the definition of an energy community in the Susa Valley shared by all participants.

WORKSHOP | La creazione della comunità energetica in Valle di Susa

Story Spine 2 - Co-creazione di scenari futuri
17/04/2020

*Campo obbligatorio

Un giorno, nella Val di Susa, viene realizzata una comunità energetica e _____ (nome del personaggio definito in precedenza) è diventato co-proprietario della gestione energetica. Di conseguenza la sua giornata tipo sarà così. *

Immaginiamo uno scenario futuro in cui la comunità energetica sia una realtà e descriviamo la giornata tipo di un personaggio facente parte della comunità energetica. Cosa ci si aspetta dalla comunità energetica?

La tua risposta

Evidenziamo i Punti di Forza che tale comunità energetica potrebbe avere nella gestione dell'energia: *

La tua risposta

Evidenziamo i Punti di Debolezza che tale comunità energetica potrebbe avere nella gestione dell'energia: *

La tua risposta

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WORKSHOPS
14,15,18 Dec 2020
14, 19 Jan 2021

WORKSHOP WITH STUDENTS

«An energy community for Oulx»

Phase 1	Phase 2	Phase 3	Phase 4
Fill the questionnaire	Context analysis	Urban project	Presentation and discussion

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«An energy community for Oulx»

Presentation and discussion

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Social structure - Phase IV

Phase IV
Target group involvement

Questionnaire

Definition of citizens cluster

a) What factors determine the human behavior related to energy use/consumption and engagement in RE projects?

PURPOSES

- To collect different opinions of citizens on the issue of energy communities
- To understand the relationship with the community/territory in which they live
- To collect building's technical data
- To collect economic, social and demographic characteristics' interviewees.

i) Design phase - 4 macro-sections

FIRST PART
INFORMATION ON ATTITUDES AND WILLINGNESS

SECOND PART
INFORMATION ON FEELINGS AND COMMUNITY IDENTITY

THIRD PART
TECHNICAL INFORMATION

FOURTH PART
SOCIO-DEMOGRAPHIC INFORMATION

Long version
- 40 questions
- 20' for compilation

Susa Valley (ITA)

Reduced version
- 30 questions
- 15' for compilation

Litomerice (CZE)
Essen (GER)

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Social structure - Phase IV

Phase IV
Target group involvement

Questionnaire

Definition of citizens cluster

Susa Valley (ITA)

%	
36	CLUSTER 1 Let's start!
38	CLUSTER 2 Almost convinced but a little scared.
20	CLUSTER 3 Quite undecided.
6	CLUSTER 4 I don't care.

111 users

Litomerice (CZE)

%	
9	CLUSTER 1 Let's start!
22	CLUSTER 2 Almost convinced but a little encouragement needed.
34	CLUSTER 3 Low interest but a training should be necessary.
3	CLUSTER 3 I don't care.

75 users

ESSEN (GER)

%	
57	CLUSTER 1 Let's start!
13	CLUSTER 2 Almost interested but improve the inclusion.
21	CLUSTER 3 Low interest but a training should be necessary.
2	CLUSTER 3 I don't care.

102 users

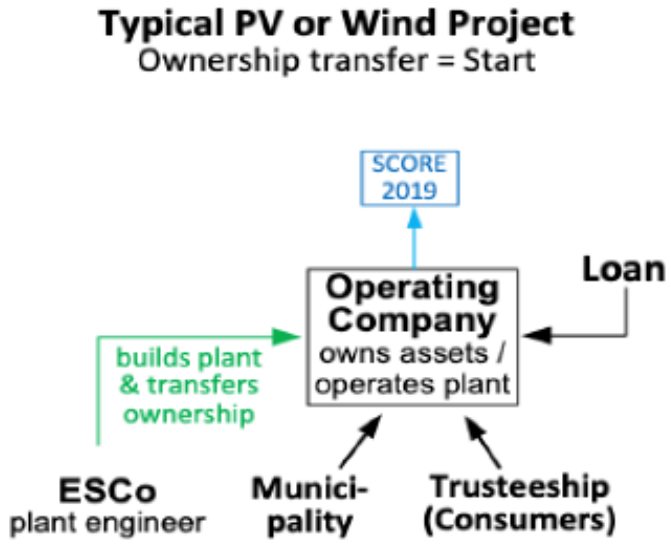
Financial structure - Phase V & VI : challenges in implementation in CSOP

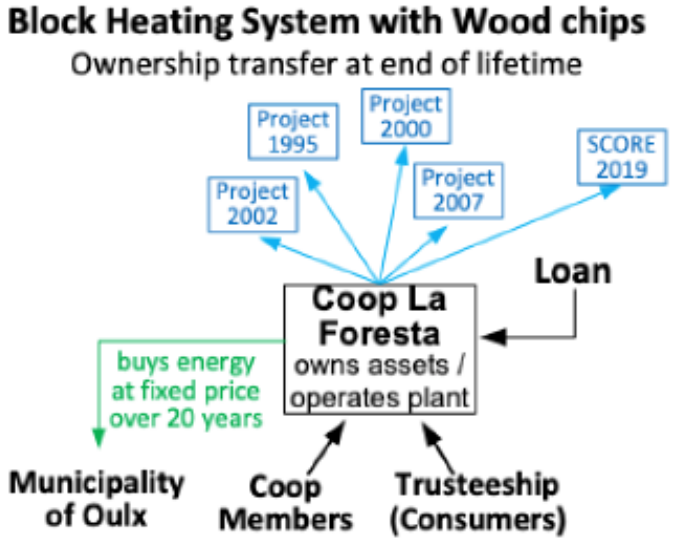
1. Developments that were not foreseeable at the project start

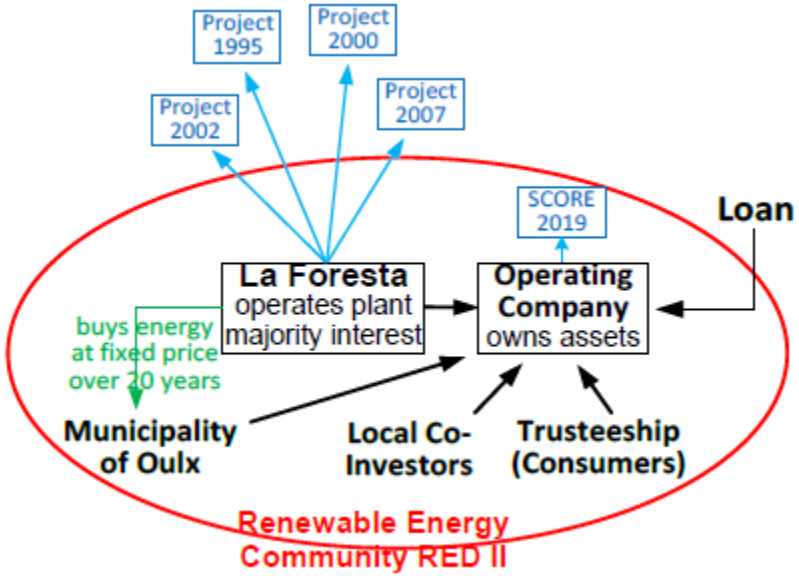
a) Energy community regulation

b) Situation under the Covid pandemic

c) Interdependency between RE-Technology and Business model







Financial structure - Phase V & VI : challenges in implementation in CSOP

2. General difficulties faced during the project

a) Administrative elections in 2019

b) Demonstrate a “changing with the predecessor”

c) During 2021 national legislation allowed the use of the frozen funds from previous years

Main achievements

- Numerous dissemination and coordination events have been held in the territory to inform citizens such as meeting groups, questionnaires, workshops, focus groups and lectures in the school.

- The agreement, signed by **37 municipalities** of the valley, on the creation of an energy community is presented to a public call, organized by the Piedmont Region, and it won the call receiving a public funding of around **€ 10.000.**

- The energy community agreement (CEVS) has succeeded to engage **31 Municipalities** with around **80,000 inhabitants.** CEVS has participated in a specific national call (National Recovery and Resilience Plan) proposing the project counting for a total investment of **EUR 60 million.**

- **New public administration** of the value of the concept of Renewable Energy Communities (RECs), which eventually led to the CEVS proposal and the **PNRR** project presentation.

- **New Pilots** have been activated due to the high visibility of the project in the area.

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The three following pilots will be done before of the end of the project

- The installation on thermal implant system of Oulx pilot within the end of the project;
- PV pilot of 20 kW in Oulx;
- PV pilot of 20 kW in Villardora.

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Thank you
for your kind attention!

IMPLEMENTATION OF THE CSOP MODEL IN SUSA VALLEY, ITALY

June 24th, 2021

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