Summer School on Energy **Giacomo Ciamician**

ENERGY TRANSITION, SOCIAL (IN)JUSTICE AND THE ROLE OF RENEWABLE ENERGY COMMUNITIES

LORENZO DE VIDOVICH

UNIVERSITY OF TRIESTE

KREUZBERGPASS, SEXTEN (BZ), ITALY

JUNE 5TH – 10TH, 2024

awarenergy
www.awarenergy.eu

dipartimento di ingegneria e architettura

Levi Cases

Centro Interdipartimentale
per l'Energia, l'Ambiente e i Trasporti
Giacomo Ciamician

IEEE Industrial Electronics Society
IES Italy Chapter

ALOT INNOVATION FOR SUSTAINABILITY

UNIVERSITÀ
DEGLI STUDI
DI TRIESTE

1. SOCIAL (IN)JUSTICES IN THE ENERGY TRANSITION

GILET JAUNES: *LA FIN DU MOIS AVANT LA FIN DU MONDE*

A PROTEST AGAINST THE ECOLOGICAL TRANSITION, OR A PROTEST AGAINST SOMETHING ELSE

UNIVERSITÀ DEGLI STUDI DI TRIESTE

GILET JAUNES: *LA FIN DU MOIS AVANT LA FIN DU MONDE*

A PROTEST AGAINST SOMETHING ELSE: RECOGNITION INEQUALITIES

A grassroots protest against the carbon taxation in France:

- Disproportionate burden of carbon taxation in the country
- Falling of such a a taxation on the working and middle classes from rural and suburban areas
- A taxation measure that would have increased the cost of living of those populations

- Urban *vs* non-urban inequalities in the taxation systems towards decarbonization:

URBAN *VS* SUBURBAN INEQUALITIES IN THE ENERGY TRANSITION

WHO IS MORE WILLING TO INSTALL A SOLAR PANEL ON THE ROOF?
THE OWNER OF A SINGLE-FAMILY DWELLING, OR THE TENANTS OF A PUBLIC HOUSING BUILDING?

THE SOCIO-ECOLOGICAL CRISIS

BETWEEN WELFARE AND ENVIRONMENT

Since the 1980s, the difficulties in ensuring social rights and wealth redistribution has led to the growth of socio-economic inequalities

Such a growth not only hides some vulnerabilities when facing carbon taxes, but it also accelerates the environmental degradation:
growth of deforestation rates, erosion of biodiversity, increased exposition to hydrogeological risks, etc.

ECOLOGICAL MODERNIZATION: ASSUMPTIONS

(RE)PRODUCING INJUSTICES IN THE ENERGY TRANSITION

- Technological innovation is the solution towards ecological transition

- Enterprises are the key subject of transition

- The state must promote decarbonization by encouraging enterprises and citizens to green practices through public spending, hence generating self-sustaining markets

- Cities are amongst the solution to the environmental crisis, because they allow technological scalability

- Transition weighing on rural and suburban areas: the places where energy and environmental resources are produced for the ecological transition of the cities

ECOLOGICAL MODERNIZATION: ASSUMPTIONS

(RE)PRODUCING INJUSTICES IN THE ENERGY TRANSITION

Consequences in the policy field:

- money for the energy transition delivered to cities and metropolitan areas

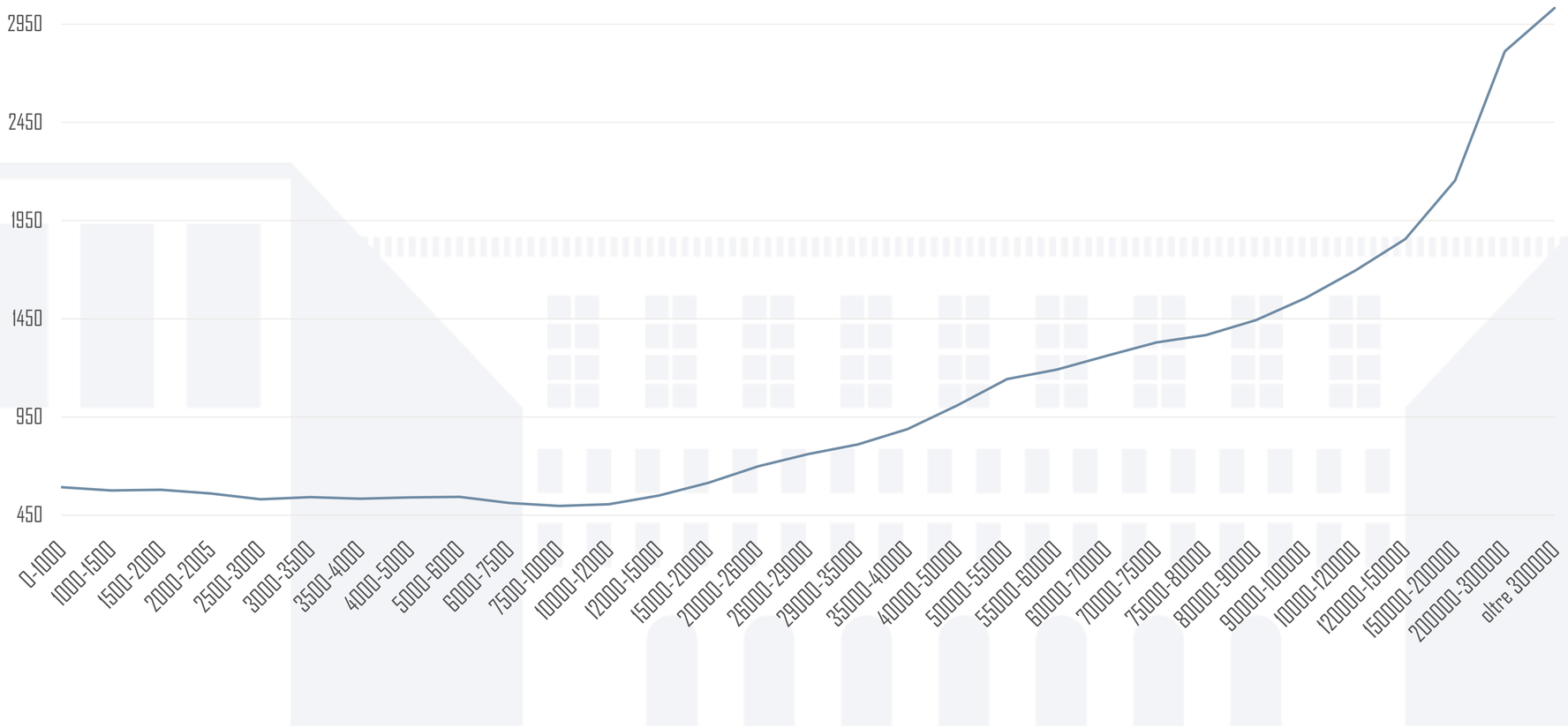
- encouraging changes of behaviours especially through "distribution policies" and economic incentives:
  to produce energy from renewable sources
  to make dwellings more efficient (65% and 110% bonuses for energy retrofit)
  to purchase electric vehicles

+ Economic disincentives to use diesel fuel (tax on diesel)

ECOLOGICAL MODERNIZATION: IMPLICATIONS

DISTRIBUTIONAL INEQUALITIES

Average amount of deductions by income class – 2008-2018 [65% bonus]*



Source: Carrosio (2021) based on Ministry of Finance and Economics

*[65% bonus]:

An individual spend to make your home more efficient and in ten years by benefiting from a 65% discharge from taxes

HOW TO INTEGRATE POLICIES WITH SOCIAL JUSTICE?
HOW TO ENSURE A JUST TRANSITION?

THREE FORMS OF INEQUALITIES TO FACE FOR A FAIR ENERGY TRANSITION

TENETS	EVALUATE	NORMATIVE
DISTRIBUTIONAL INEQUALITY	WHO ARE THOSE HIT BY INJUSTICES?	HOW SHOULD WE SOLVE THEM?
RECOGNITION INEQUALITY	WHO IS IGNORED IN THE TRANSITION PROCESS?	HOW SHOULD WE RECOGNISE THEM?
PROCEDURAL INEQUALITY	IS THERE A FAIR PROCESS?	WHAT KIND OF NEW PROCESSES?

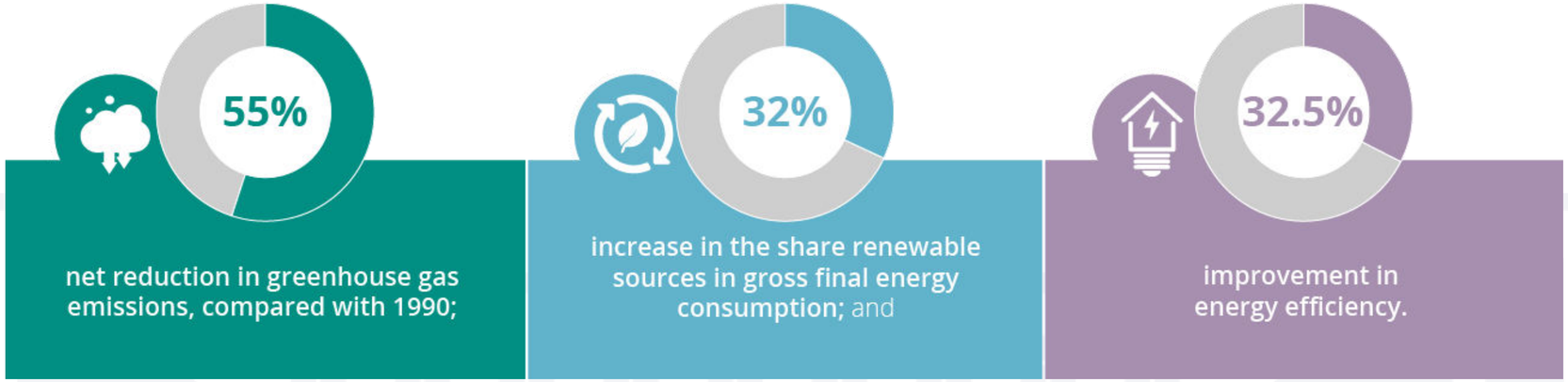
UNIVERSITÀ
DEGLI STUDI
DI TRIESTE

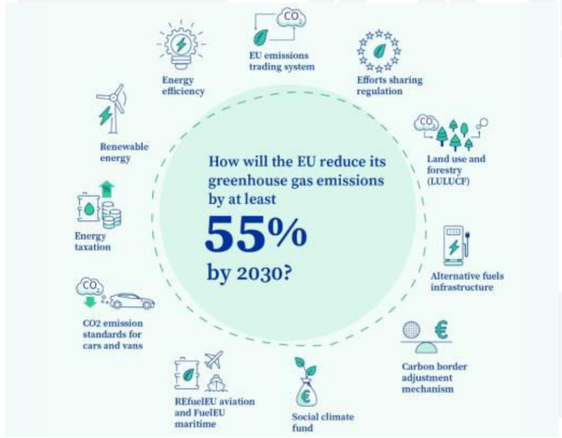
2. RENEWABLE ENERGY COMMUNITIES:
TOOLS FOR A POTENTIALLY FAIR ENERGY TRANSITION

PLACING RENEWABLE ENERGY COMMUNITIES

EUROPEAN CLIMATE AND ENERGY TARGETS BY 2030

The current 2030 minimum targets for greenhouse gas emissions, renewable energy and energy efficiency at the EU level are:



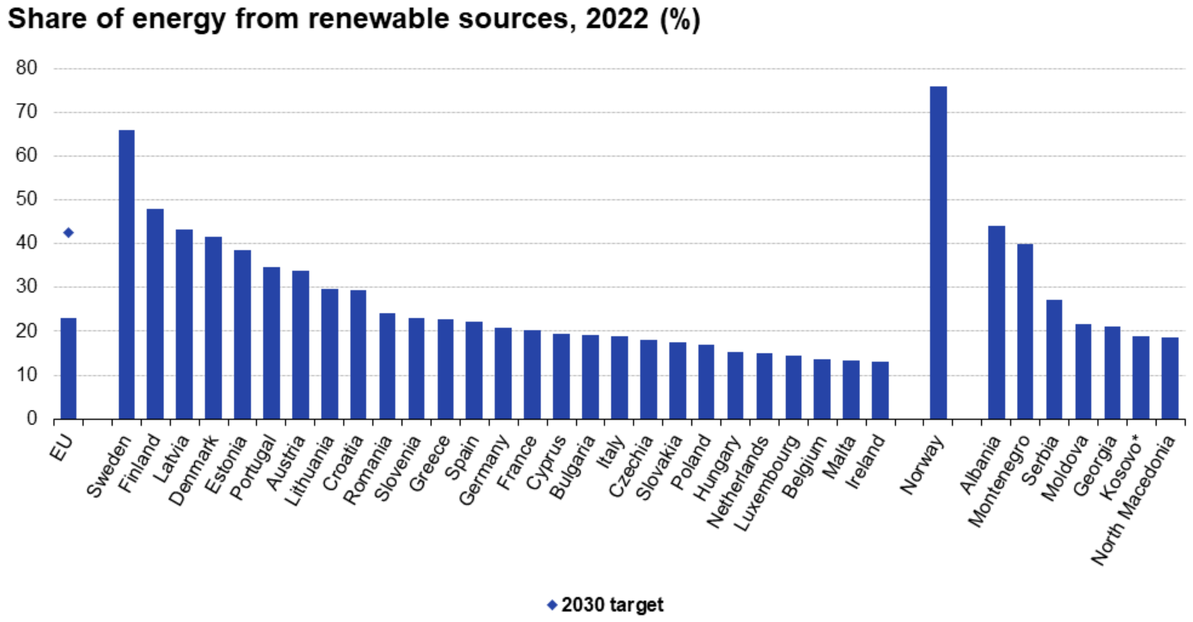


UNIVERSITÀ DEGLI STUDI DI TRIESTE

PLACING RENEWABLE ENERGY COMMUNITIES

FUNDAMENTALS AND FEATURES

Share of renewable energy in gross final energy consumption (2022)

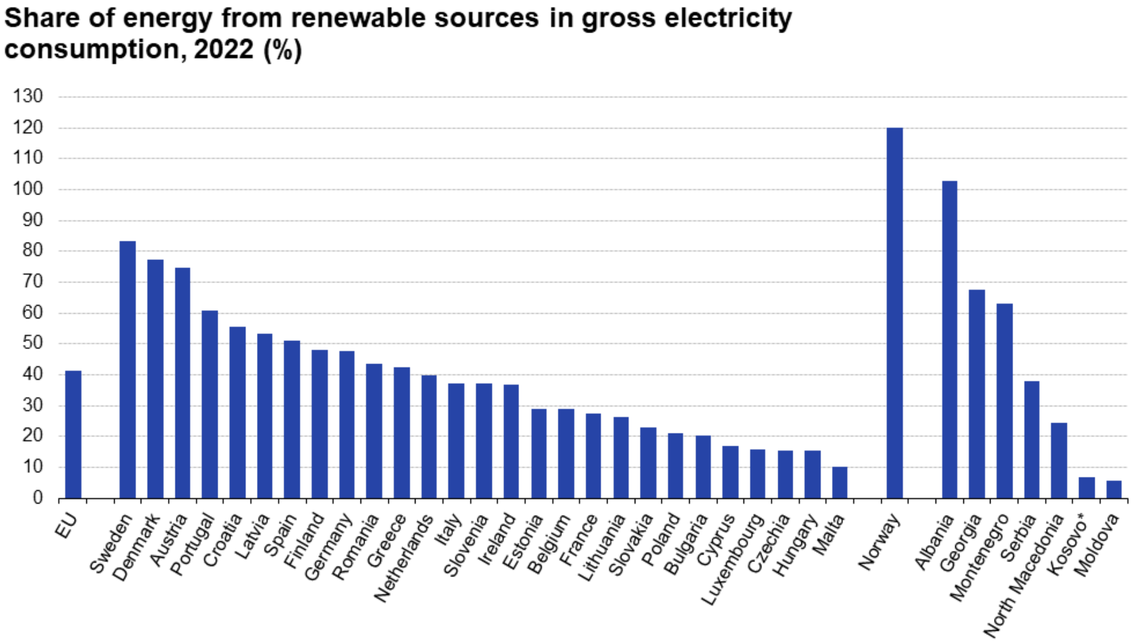


* This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

Source: Eurostat (online data code: nrg_ind_ren)

eurostat

Share energy from renewable sources in electricity (2022)



* This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

Source: Eurostat (online data code: nrg_ind_ren)

eurostat

UNIVERSITÀ DEGLI STUDI DI TRIESTE

WHAT IS A RENEWABLE ENERGY COMMUNITY (REC)?

FUNDAMENTALS AND FEATURES

Definition from the EU:

Energy communities organise collective and citizen-driven energy actions that help pave the way for a clean energy transition, while moving citizens to the fore

They contribute to increasing public acceptance of renewable energy projects and make it easier to attract private investments in the clean energy transition.

At the same time, they have the potential to provide direct benefits to citizens by increasing energy efficiency, lowering their electricity bills and creating local opportunities in social cohesion projects and labour market

https://energy.ec.europa.eu/topics/markets-and-consumers/energy-communities_en#citizens-and-renewable-energy-communities

WHAT IS A RENEWABLE ENERGY COMMUNITY (REC)?

FUNDAMENTALS AND FEATURES

Innovative modalities of collective management for co-production, consumption and sharing of energy generated from RES

Energy seen not only as a fundamental good, but also as an object of social relations and organizational innovations

3 key principles

Decarbonization

Decentralization

Localization

RENEWABLE ENERGY COMMUNITIES IN ITALY

REGULATORY FRAMEWORK

2018

Directive RED II

2019

NECP
Piano Nazionale Integrato Energia e Clima

Directive IEM

2020

Law 8/2020
First experimental definition of RECs

Deliberation ARERA 318/2020

Decree MiSE
Incentive tariffs

Technical rules by GSE: 12/2020

2021

NRRP
Mission 2: *Transizione ecologica*

Decrees 199/2021 210/2021

2022

Deliberation ARERA 727/2022

TIAD
Testo Integrato Autoconsumo Diffuso

2023

New technical rules by GSE: 02/2024

11/2023
01/2024
Decree MASE
incentives + non-refundable grants

Up to 5 GW eligible for funds, until2027

RENEWABLE ENERGY COMMUNITIES IN ITALY

REGULATORY FRAMEWORK

Decree 199/2021

- Maximum output from 200 kW to 1MW
- Revision on incentive tariffs system
- From medium-voltage substation MT/BT to primary station
- Inclusion of other actors, such as the Third Sector

RENEWABLE ENERGY COMMUNITIES IN ITALY

FEATURES

Which actors are able create a renewable energy community in Italy?

- Individuals, through associative or cooperative forms
- Local administrations and local entities
  (for e.g., by making public roofs available for PV installations)
- Local enterprises, as long as energy supply is not their core business
- Third Sector actors [after the Decree 199/2021]

RENEWABLE ENERGY COMMUNITIES IN ITALY

CONTRACTUAL FEATURES

What do you need to create a REC?

- Bylaws [*Statuto*]
- Regulations for revenue sharing
- GSE incentive contract
- Energy sale contract: agreed between entity that produces the energy and trader that buys it
- Unbundling [*Scorporo*]
- Service contracts:
  with supplier for technical-economic and administrative management
  with third party producer (or associate producer)

RENEWABLE ENERGY COMMUNITIES IN ITALY

SOMETHING MORE ABOUT RECS IN ITALY

Luiss Business School

Aim

Identifying the *modus operandi* and providing a review of the first RECs in Italy

RSE Ricerca Sistema Energetico

UNIVERSITÀ DEGLI STUDI DI TRIESTE

RENEWABLE ENERGY COMMUNITIES IN ITALY

A RESEARCH ON RECS IN ITALY

Research questions

I. How are RECs configured in Italy?
Regulatory profiles, ownerships and partnerships

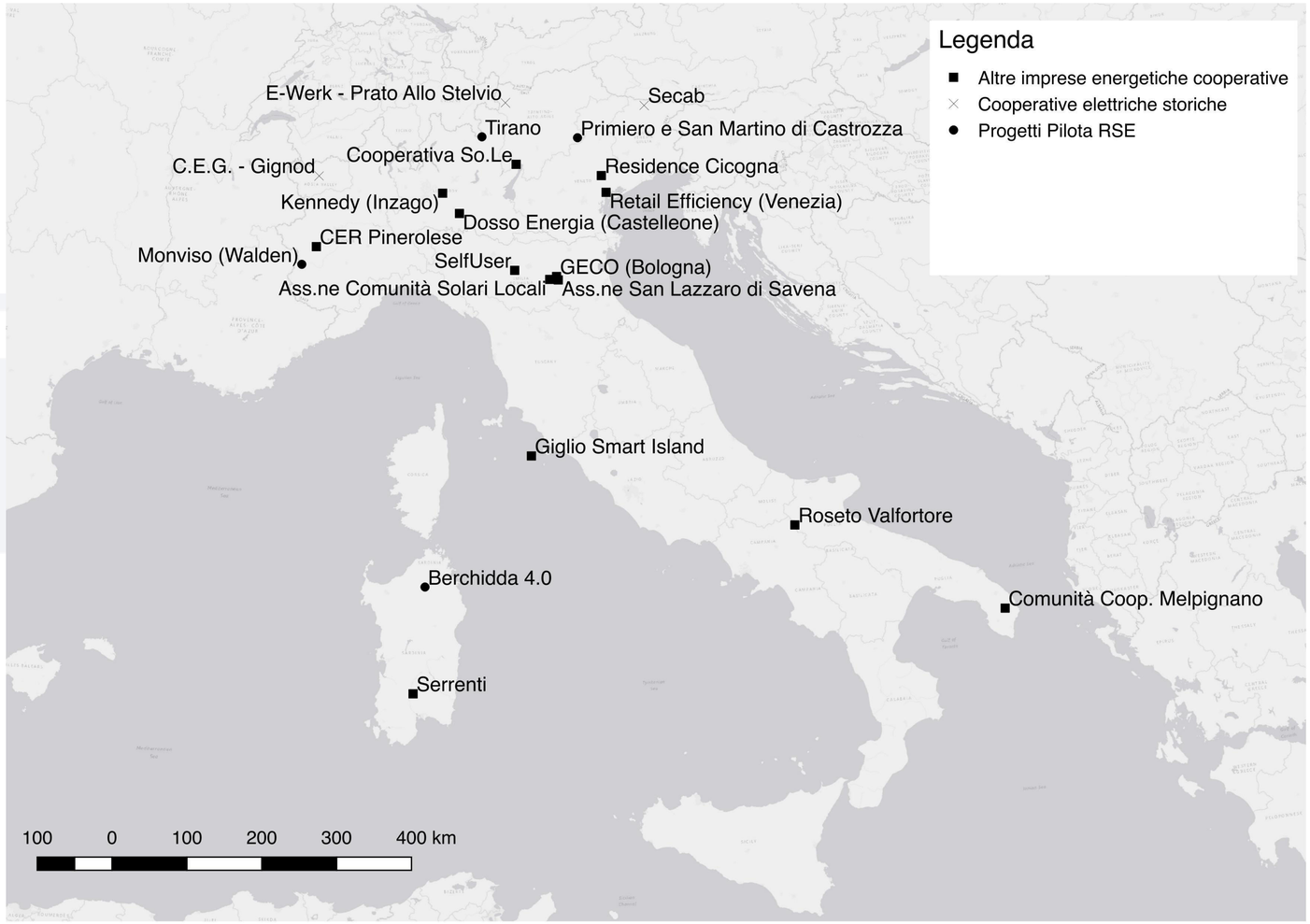
II. How is regulated the voluntary and open participatory process?
Role of stakeholders between proximity of power plants and local development

III. How are defined and managed the benefits?
Between environmental, economic and social benefits in the local context where RECs operate

UNIVERSITÀ DEGLI STUDI DI TRIESTE

RENEWABLE ENERGY COMMUNITIES IN ITALY

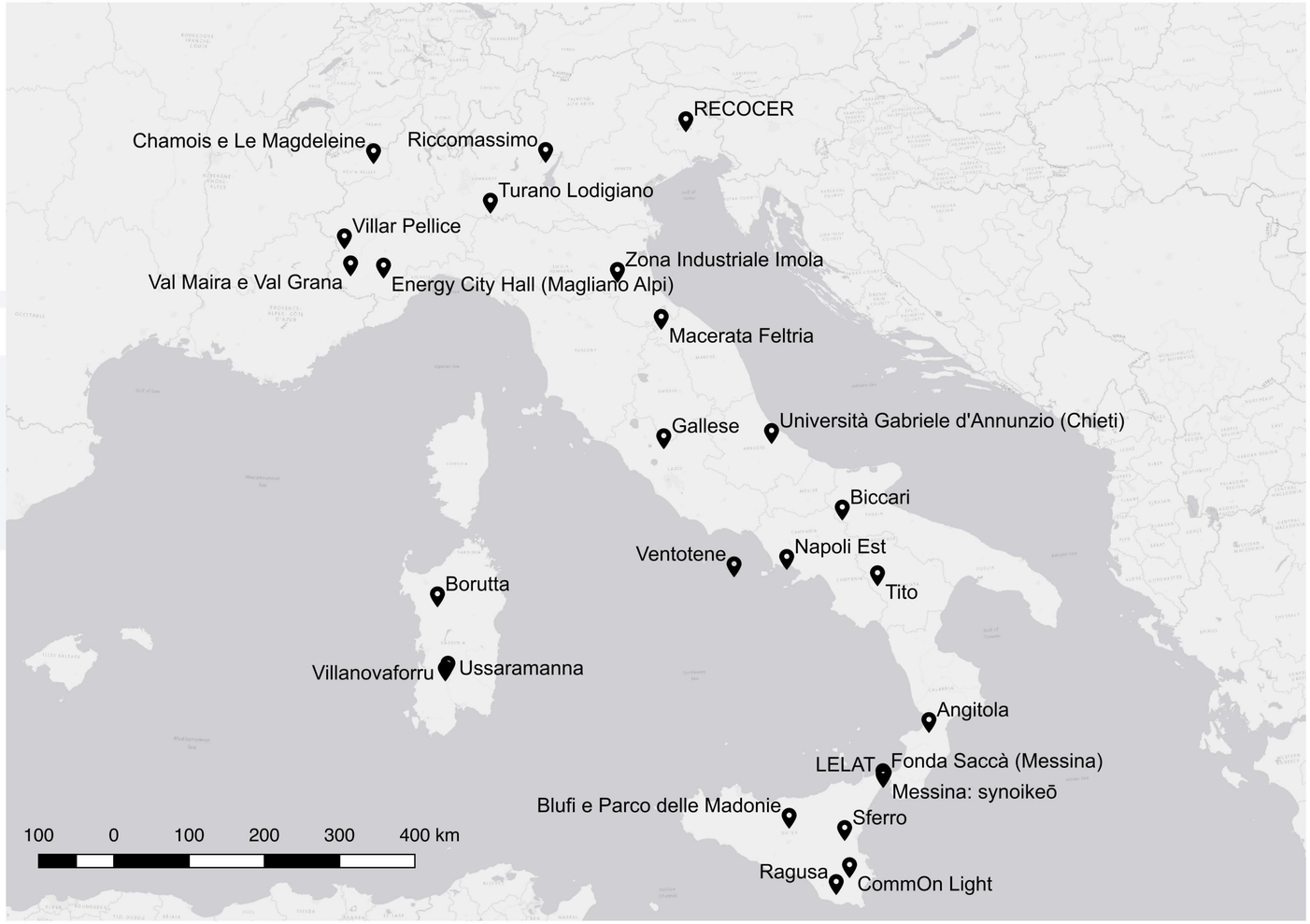
ENERGY ENTERPRISES NON-COMPLIANT WITH THE CURRENT MODEL



UNIVERSITÀ DEGLI STUDI DI TRIESTE

RENEWABLE ENERGY COMMUNITIES IN ITALY

FIRST RECS LAUNCHED AFTER THE LAW 8/2020



UNIVERSITÀ DEGLI STUDI DI TRIESTE

RENEWABLE ENERGY COMMUNITIES IN ITALY

Public Lead model

Project proposers: Mainly public administrations

Aims: create local development opportunities, energy saving strategies, and combat energy poverty

Pluralist model

Project proposers: large community of different stakeholders

Aims: social cohesion within a localized energy transition process

Community Energy Builder (CEB) model

Who they are? Intermediary actors between local projects and individual prosumers, to facilitate RECs' development (start-ups, ESCOs, university spin-off and research clusters, energy cooperatives)

Aims: support the development of RECs with consultancy activities

RENEWABLE ENERGY COMMUNITIES IN ITALY

ANALYTICAL CLUSTER	CASE STUDY
PUBLIC LEAD MODEL	COMUNITÀ ENERGETICA DI MAGLIANO ALPI (CN)
	COMMON LIGHT, COMUNITÀ ENERGETICA DI FERLA (SR)
	KENNEDY S.R.L. (INZAGO, MI)
PLURALIST MODEL	COMUNITÀ ENERGETICA DI NAPOLI EST (SAN GIOVANNI A TEDUCCIO, NA)
	COMUNITÀ ENERGETICA DI TIRANO (SO)
	GECO (*GREEN ENERGY COMMUNITY*), PILASTRO-ROVERI (BOLOGNA)
COMMUNITY ENERGY BUILDERS	ENERGY CENTER POLITECNICO DI TORINO (REFERRED TO «RECOCER PROJECT»)
	ÈNOSTRA (REFERRED TO THE «COMUNITÀ ENERGETICA DI BICCARI», FG)
	ENEL X (REFERRED TO THE PROJECT OF «COMUNITÀ ENERGETICA AGRICOLA», RAGUSA)

OPEN QUESTIONS AND UNSOLVED KNOTS

BACK TO SOCIAL (IN)JUSTICES: THE POSSIBLE FUTURE IMPACT OF RECs

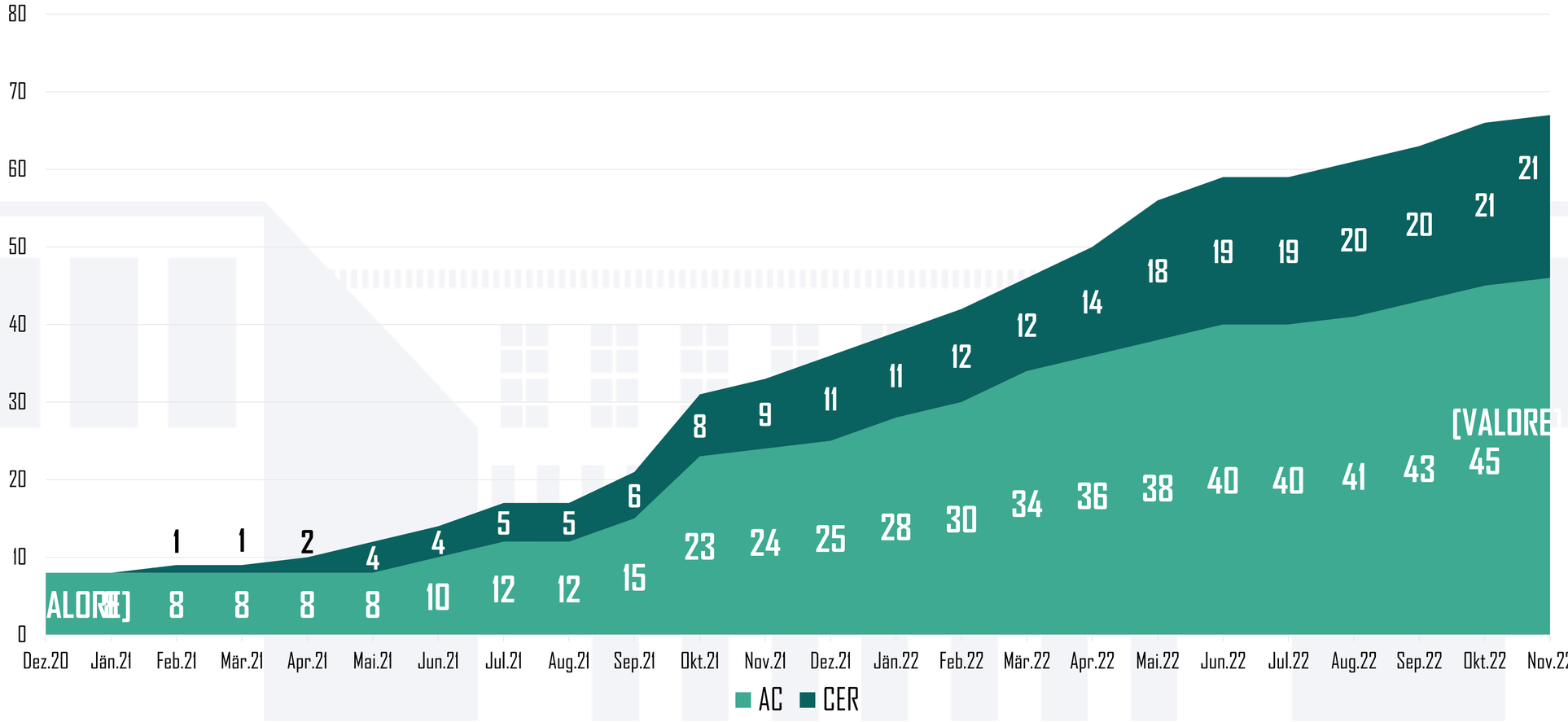
1. The impact of RECs on **distributional** effects:
   Tools to tackle issues of justice in energy transition and energy provision

2. The impact of RECs on **recognition**:
   Many individuals (such as poor population) can be recognized as local actors of energy transition through RECs and self-consumption initiatives' development (e.g.: RECs to combat energy poverty)

3. The impact of RECs on **procedural** issues:
   RECs can create fairer access to energy generated from renewables,
   if market rationales stand outside of the development process

A SLOW AND GRADUAL DEVELOPMENT

AC and ERC cumulative trend in operation as of 31 December 2022. Source: GSE

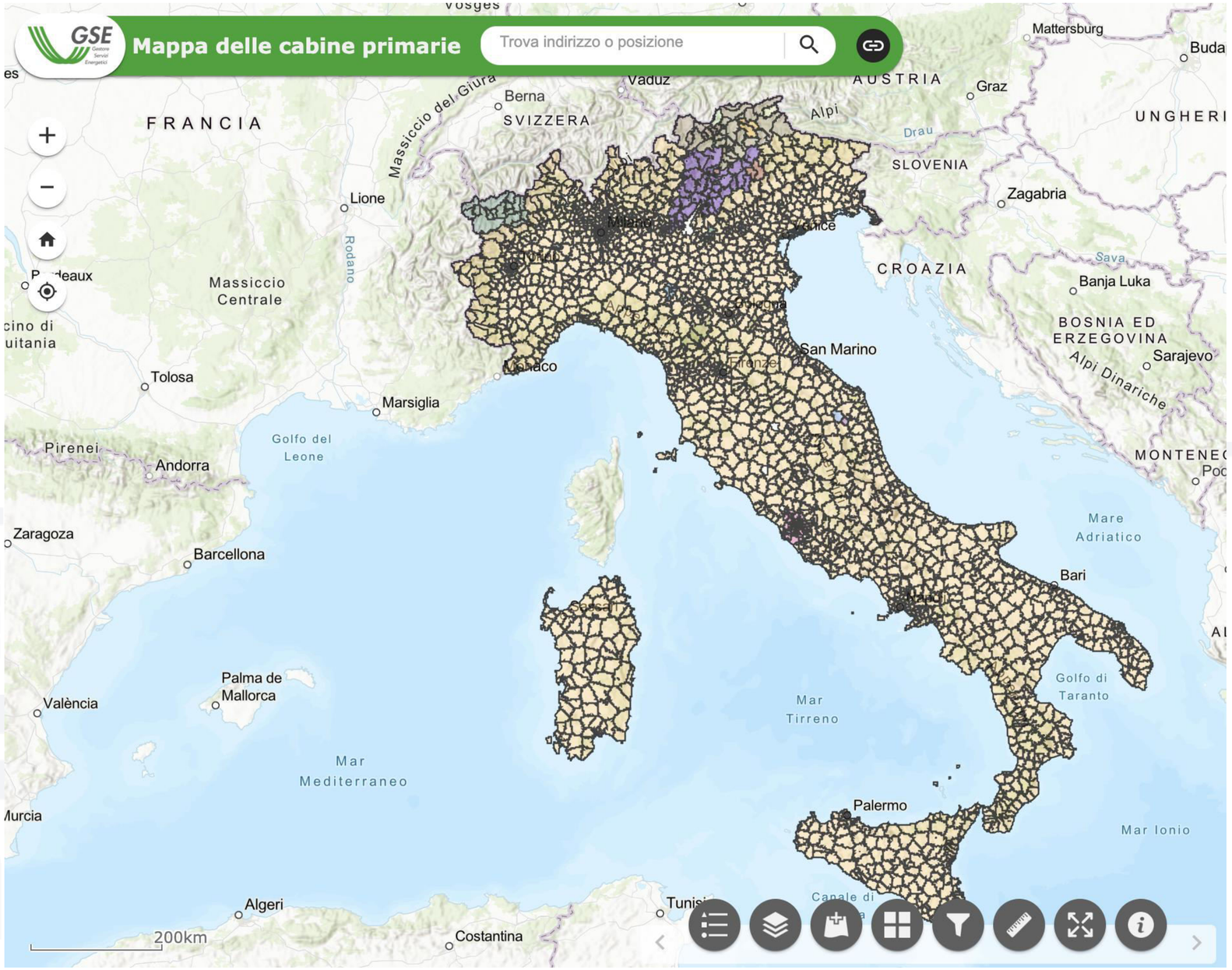


Accumulated power: 1,4 MW from photovoltaic technology

UNIVERSITÀ DEGLI STUDI DI TRIESTE

TERRITORIAL MAPPING

CONVENTIONAL AREAS SUBTENDED BY PRIMARY STATIONS



https://www.gse.it/servizi-per-te/autoconsumo/gruppi-di-autoconsumatori-e-comunita-di-energia-rinnovabile/mappa-cabine-primarie

TERRITORIAL MAPPING

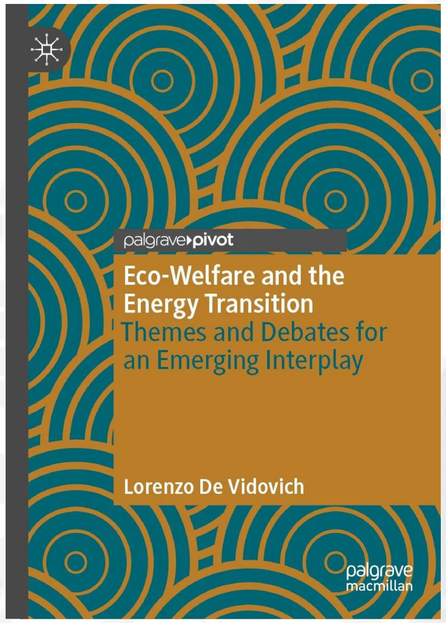
A GAP THAT REPRODUCES TERRITORIAL INEQUALITIES

Source: © Legambiente, *Rapporto 2024*
https://www.legambiente.it/wp-content/uploads/2021/11/Comunita-energetice_report_2024.pdf

THANKS!

lorenzoraimondo.devidovich@dispes.units.it

Community Energy Map: https://series.francoangeli.it/index.php/oa/catalog/book/740



Eco-welfare and the energy transition: https://doi.org/10.1007/978-3-031-55028-7


ENVIRONMENTAL SOCIOLOGY
https://doi.org/10.1080/23251042.2023.2207707
Routledge
Taylor & Francis Group
Check for updates

Towards eco-social policies to tackle the socio-ecological crisis: energy poverty as an interface between welfare and environment

Giovanni Carrosio and Lorenzo De Vidovich
Department of Political and Social Sciences, University of Trieste, Trieste, Italy

https://doi.org/10.1080/23251042.2023.2207707