

Behave 2020

6th European Conference on Behaviour and Energy Efficiency

Copenhagen, 21-23 April 2021

ENERGY COMMUNITIES IN ITALY. Analysis on the internal national gap between North and South.

Monica Musolino – CNR ITAE of Messina

Erika D'Aleo – CNR ITAE of Messina

Agatino Nicita – CNR ITAE of Messina



1. INTRODUCTION AND BACKGROUND

- A comparative analysis on socio-economic, cultural and historical factors that characterize the energy communities in the two macro areas of Northern and Southern Italy and that determine their level of diffusion.
- In Italy, the parliament approved the law no. 8 on 28 February 2020, which entered into force on 1 March. This law, pending the complete transposition of Directive (EU) 2018/2001, allows activating collective self-consumption from renewable sources or creating renewable energy communities.

- The **definition of energy communities** according to the law:

«art. 42 c.3 b) in the case of energy communities, the **shareholders or members are persons, small and medium-sized enterprises, territorial or local authorities, including municipal administrations**, and participation in the renewable energy community cannot constitute the main commercial and industrial activity;

c) the main objective of the association is to provide environmental, economic or social benefits at the community level to its shareholders or members or to the local areas in which the community operates, rather than financial profits».

2. METHODOLOGY

- A comparative analysis between two large areas of the country which traditionally present an internal gap.
- Based on these structural differences, energy communities are also expected to assume different characteristics, which will be tested using a series of indicators: number of initiatives and project in relation to each area, dimensions, typology of actors involved, typology of energy communities, funders.

OVERVIEW OF THE MAIN SOCIO-ECONOMIC INDICATORS

Data on:

- **GDP**
- **Amount of factories**
- **Income**
- **Abject poverty and energy poverty**
- **Energy Consumption**

CHANGES IN GDP PER AREA

North West

GDP

2008-14: - 6,5%

2015-18: 5,4%

2019: 0,3%

GDP per capite

2019: 36,800 €



North East

GDP

2008-14: -6,2%

2015-18: 6,1%

2019: 0,4%

GDP per capite

2019: 35,500 €

Mezzogiorno (South)

GDP

2008-14: -12,6%

2015-18: 2,5%

2019: 0,1%

GDP per capite

2019: 19,200 €

INDUSTRIAL DEVELOPMENT

**North
Factories
2018: 52,6%**

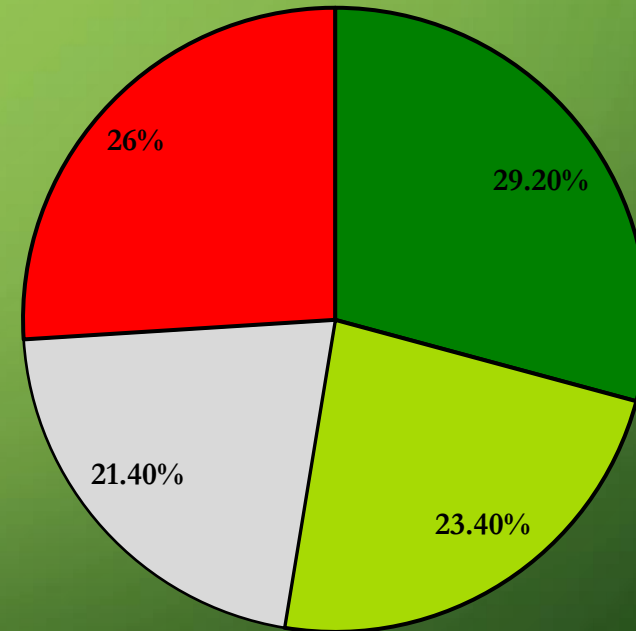
**Centre
Factories
2018: 21,4%**

**Mezzogiorno
(South)
Factories
2018: 26%**



Factories

- North West
- North East
- Centre
- Mezzogiorno (South)



Source: Istat

North West

Average income per capite:

2019: 22,600 €

Unemployment rate:

2020 6%

North East

Average income per capite:

2019: 22,000 €

Unemployment rate:

2020 5,6%

Mezzogiorno (South)

Average income per capite

2019: 14,200 €

Unemployment rate

2020 15,9%

Migratory flow

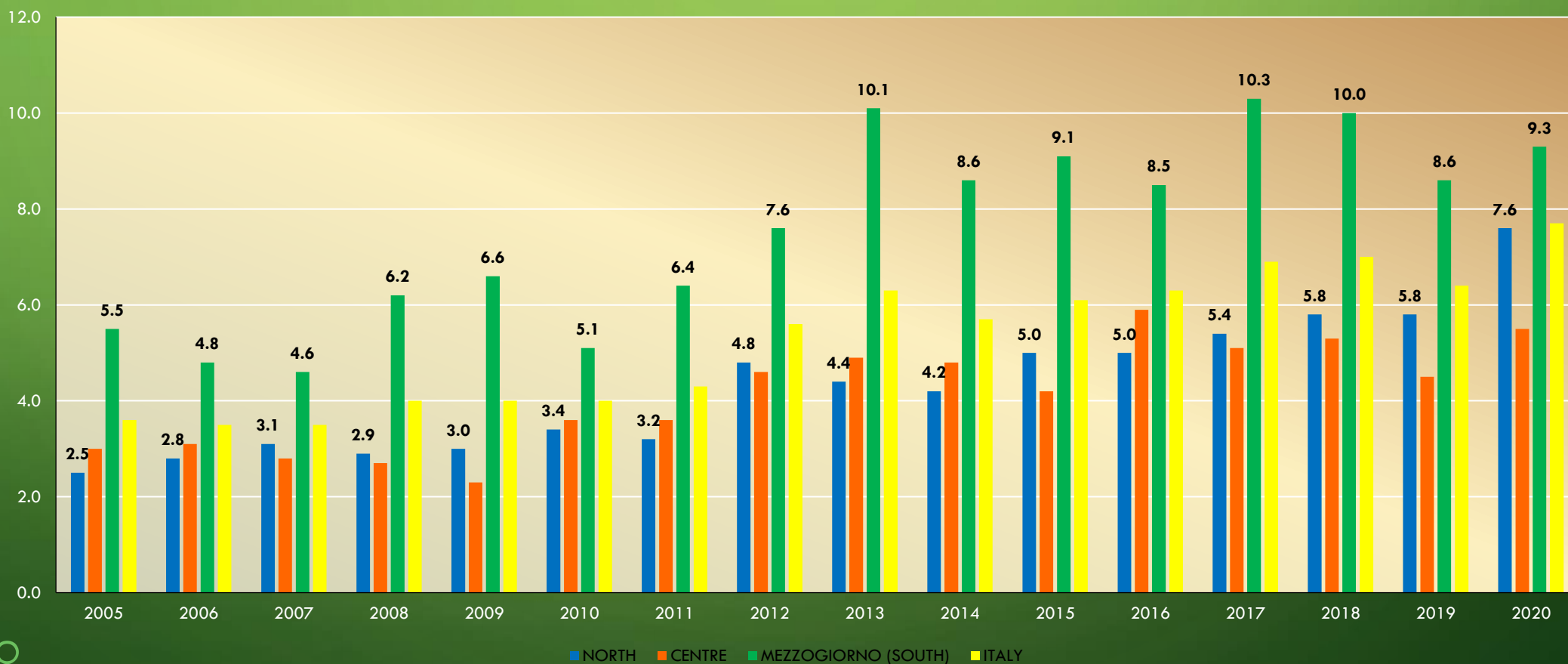
2018: 118.000 people
(+7.000 than 2017)



POVERTY INCIDENCE

There is a structural and historical gap between Northern and Southern Italy in relation to the poverty degree of the population.

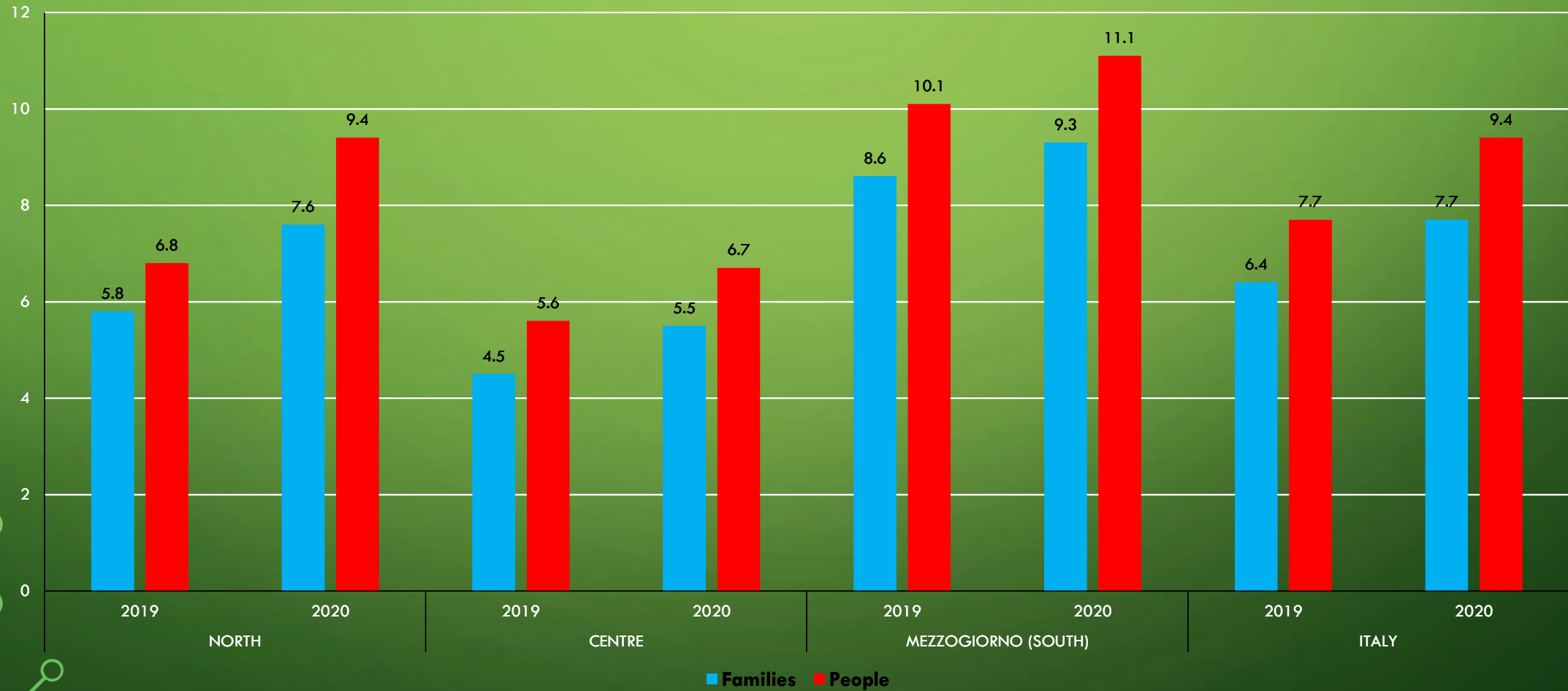
Poverty incidence in Italy (%) – (2005 – 2020)



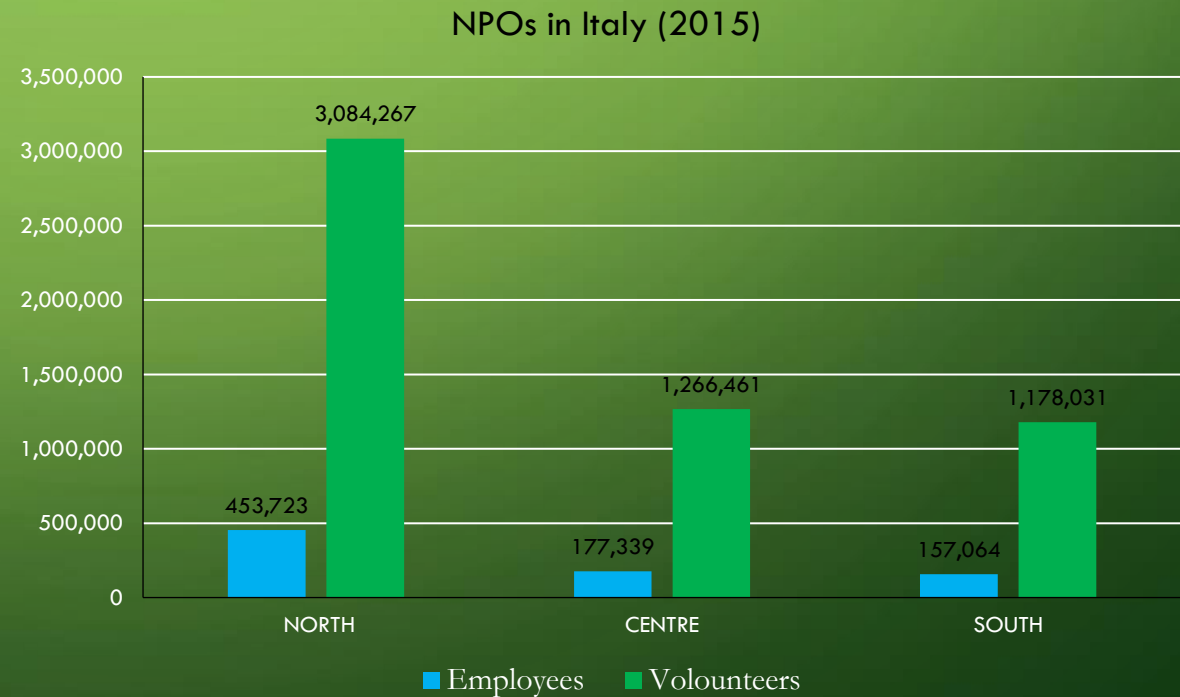
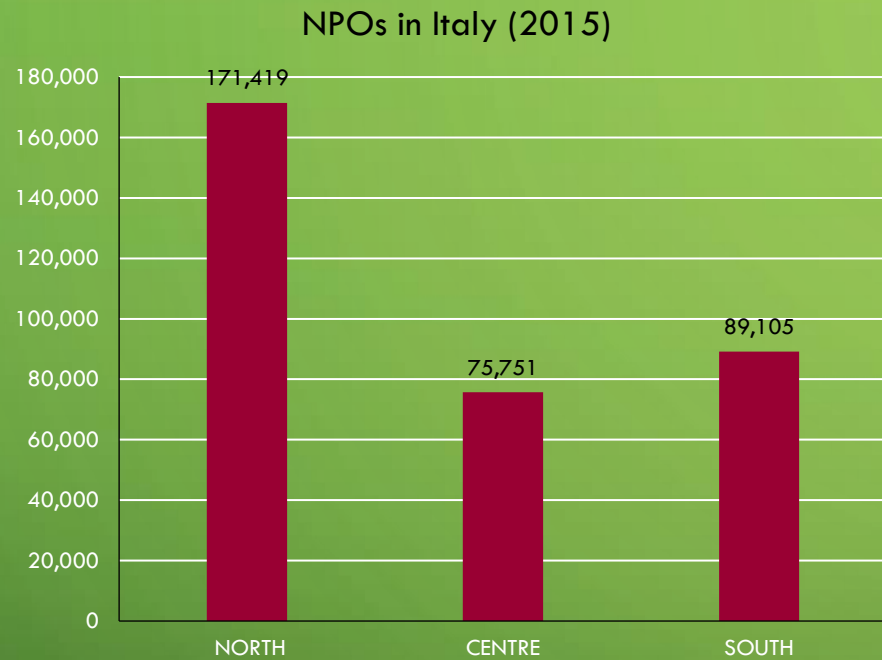
Source: Istat

ABJECT POVERTY

Abject poverty (%) per area (2019-2020)



NONPROFIT ORGANIZATIONS (2015)



Source: Istat

ENERGY CONSUMPTION (2018)

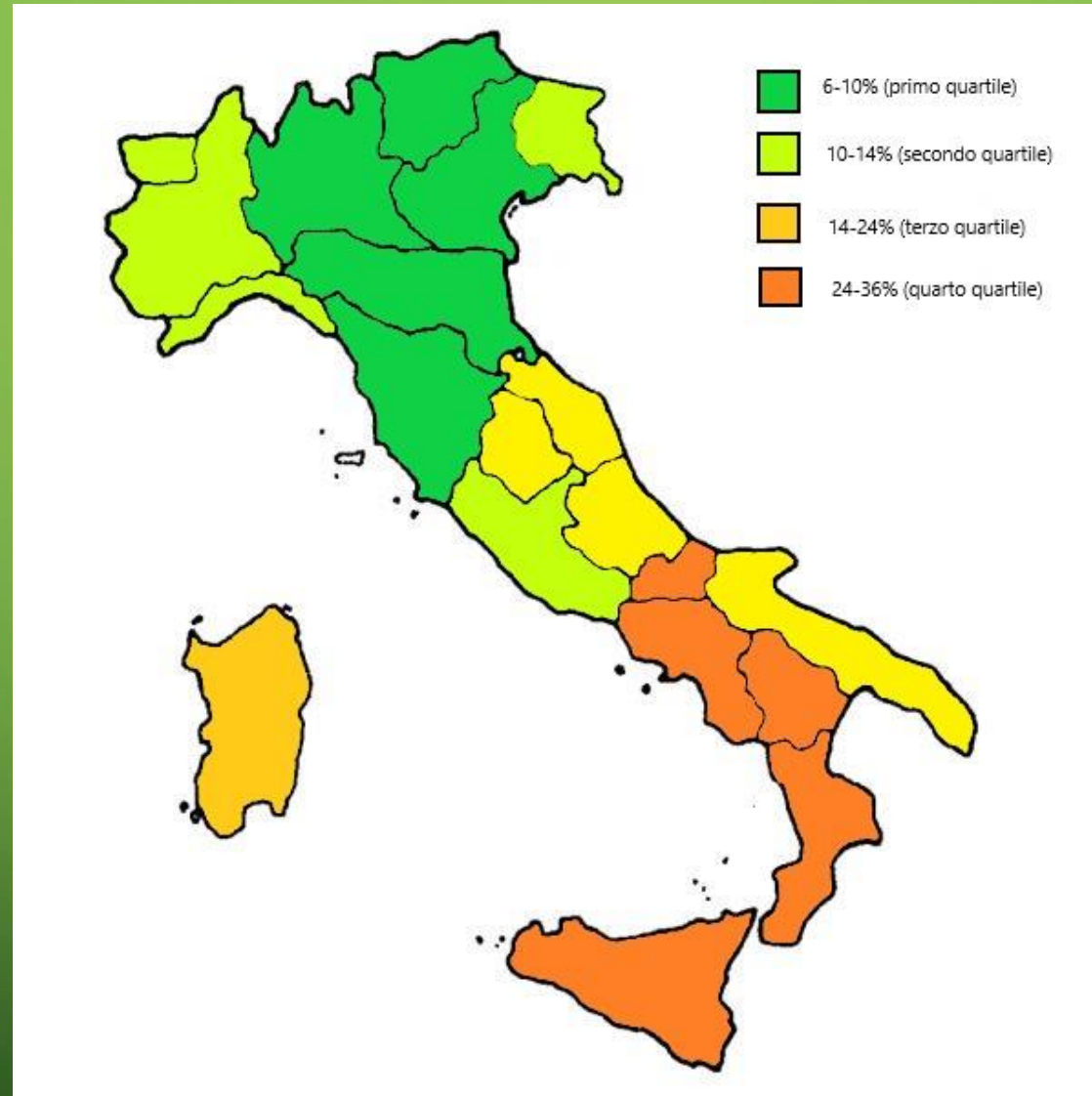
Four Northern Regions (Lombardia, Veneto, Emilia Romagna, Piemonte), which are the most productive of the country, consume an amount of electricity (151,2 KW) corresponding to 50% of the total energy consumption in Italy (303,4 KW)

The biggest Regions of the Southern Italy (Sicilia, Campania, Puglia, Calabria) consume 55,7 KW in total.



Source: Terna

ENERGY POVERTY FREQUENCY



Source: OIPE Report - 2020

| Area Indicators | Number of Energy Communities | Typology of ECs | Dimensions (number of people involved and area concerned) | Typology of actors | Funders (Public, Private, Mix) |
|----------------------------------|-------------------------------------|---|---|--|--|
| Northern Italy | 10 | Top down (All) | Great dimensions | Local authorities + companies and/or research institutes and universities | Mix of Public/private |
| Southern Italy | 7 | 5 Top down (Sardegna, Sicilia) 2 Bottom up (related to the energy poverty issue - Campania, Sicilia) | Smaller dimensions (both in relation to the extension of the area and to the number of members) | Local authorities + NGOs (foundations) | Mix of Public/private |

Table 1 – Energy communities in Italy

Northern Italy
10 ECs

Top down
Great dimensions
Local authorities
+ companies
and/or research
institutes
Mix of funders



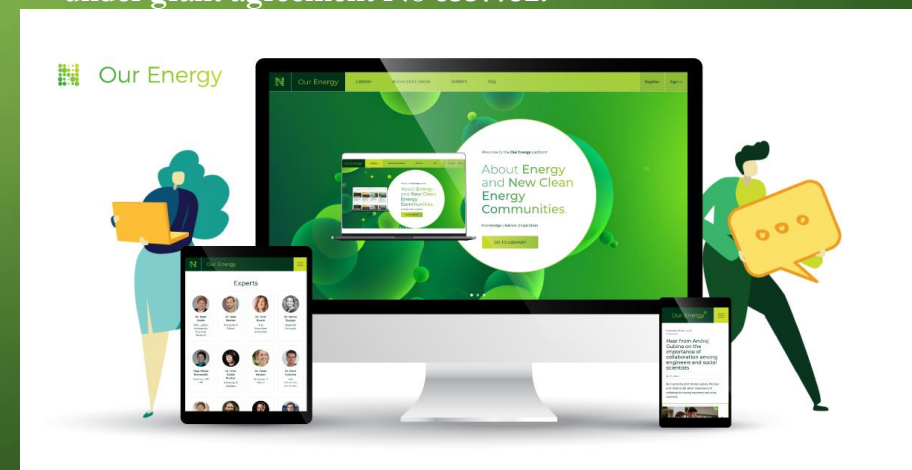
**Southern Italy
(Mezzogiorno)**
7 ECs

Top down/bottom up
Smaller dimensions
Local authorities + NGOs
Attention to the energy
poverty
Mix of funders

- One of these bottom up energy communities, based on Messina (Sicily) is the main Italian case study within the NEWCOMERS Project – Horizon 2020 that analyses new clean energy communities from various angles.
- The project involves six EU member countries (the Netherlands, Sweden, Germany, Great Britain, Slovenia and Italy), is coordinated by the Free University of Amsterdam and is developed thanks to the involvement of important research institutions at international level: University of Oxford, Lund University of Lund, Leibniz Institut of Essen, the University of Ljubljana and the Institute of Advanced Technologies for Energy "Nicola Giordano" of Messina, as well as two Slovenian companies, Consensus and GEN-I. renewable energy.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 8337752.



<https://www.newcomersh2020.eu>

<https://our-energy.eu/>

The background is a solid green color. In the four corners, there are decorative white line-art patterns resembling circuit traces or neural network connections. These patterns consist of straight lines of varying lengths and angles, ending in small white circles.

Thank you for your attention!

musolino@itae.cnr.it