Interreg NEXT MED

Co-funded by the European Union

SHAREN

SHAREN PILOT – Monterotondo (Italy)

Working with Monterotondo Municipality and technical experts





Monterotondo

Lazio Region, Italy

Metropolitan City of Rome

Altitude: 165m asl

Surface: 40,9 kmq

Inhabitants: 41047 (recently eligible for incentives)

Density: 1002 ab/kmq

Climatic Zone D (1.401 < Degree Days < 2.100)

Fractions: Monterotondo Scalo, Piedicosta, Borgonovo, Tormancina, San Martino, Grotta Marozza, La Ficorella, La Fonte

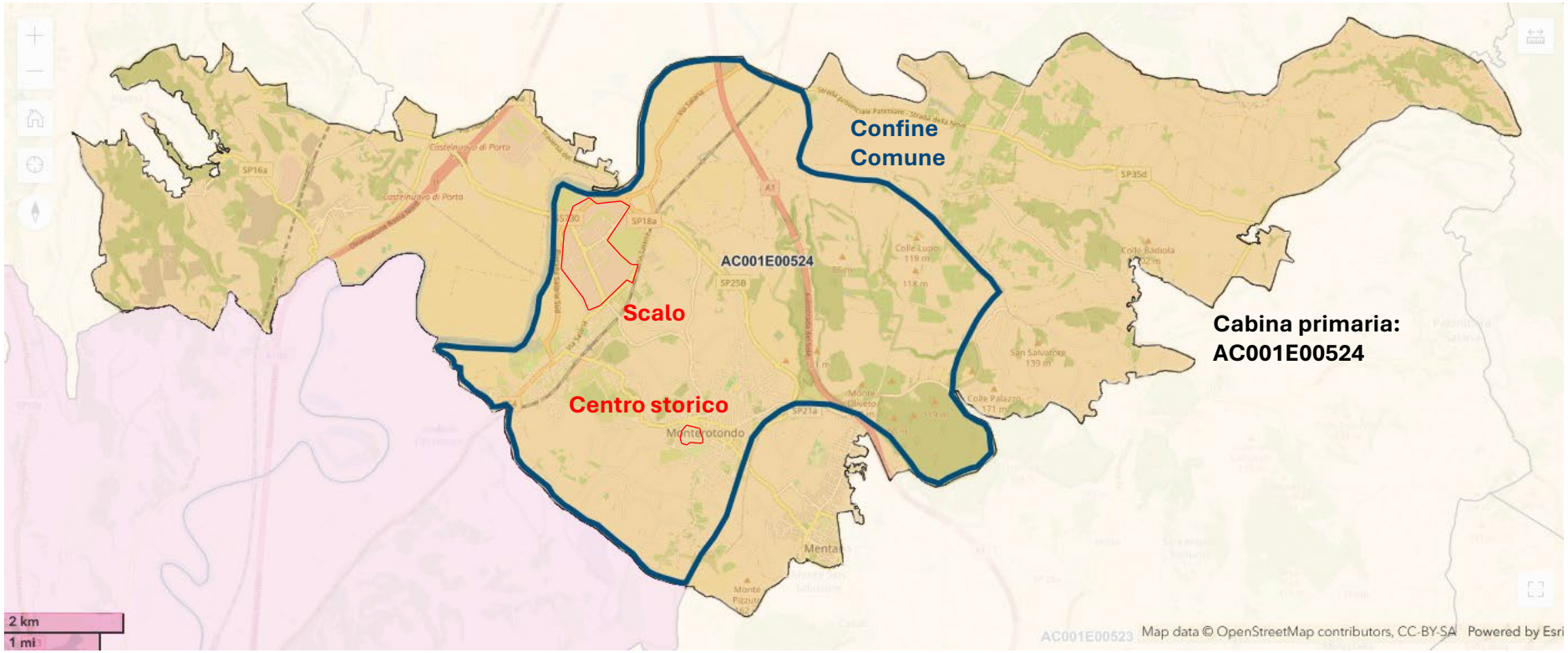
Neighbouring municipalities: Capena, Castelnuovo di Porto, Fonte Nuova, Mentana, Montelibretti, Palombara Sabina, Riano, Roma







Identificazione aree di indagine



Vista confine cabina primaria AC001E00524 – Superficie area 10 ettari ca – *GSE mappa delle cabine primarie 2025-2027*



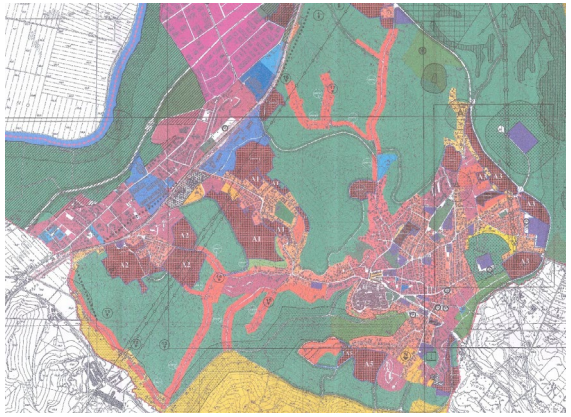
Vista confine Area Scalo

PRIMARY CABIN MAP

Conventional Areas (AC): source: Distributors / data valid from 1 October 2025

Municipalities: source: ISTAT, 2025

Distributed self-consumption configurations: data as of 31 December 2025



Vista PRG con sviluppo Area Urbana



Vista confine Area Centro Storico

Dati disponibili ed elaborazione

INPUT [source Monterotondo Municipality]

Technical Regional chart 2007

Dataset urban area, GIS 2024

Current Masterplan

Aerial phtogrammetry, various scales

INPUT

2024 Solar Photovoltaic Statistical Report – Italian Energy Services Manager (GSE) Public Document
Report "Average electricity consumption per household" - ARERA, ENEL, ISTAT
Analysis of residential customer consumption by province - ARERA

Tailored land registry searches

OUTPUT

Extent of surfaces suitable for photovoltaic panel installation, organized by installation scenario.

Railyard Area Specifications: GIS data + analysis of track layout and spatial footprint based on aerial photogrammetry.

Urban Area Characteristics: GIS data + Analysis of building footprints and outlines from aerial photogrammetry + General Master Plan

Historic Center Building Stock: GIS data + analysis of footprints and building envelopes via aerial photogrammetry + land registry records and analysis

Strumenti di calcolo

PARAMETRI	quantità	u.m.
Surface area required for 1 kWp	6,0	**[mq / kWp]**
Specific yield – annual kWh per kWp – tabulated value	1.250	**[kWh / kWp x anno]**
Power capacity per household assuming a 25% saving on the electricity bill – ARERA estimate	1.5	[kWp]
Packing – Portion of the roof area actually covered by modules (accounts for module placement on the flat roof surface)	0,6	

FORMULE	
Peak power = Area of installed modules / Module density per m^2	[kWp]
Energy produced = Peak power / specific yield	[kWh/anno]
Power per household = CER estimate «a 8 minuti dal Sole»	[kWp]

Railyard Monterotondo area - Scalo Monterotondo

Railyard area of Monterotondo: PV potential on flat industrial roofs (free of shadings and other obstructions	
suitable [sqm]	335.433,0
suitable 50% [sqm]	12.853,5
Suitable area [sqm]	**348.286,5**



Esempio «idoneo»



Esempio «idoneo 50%»



Confine Area Scalo

Scenario	Available area [sqm]	Packing	Module area [sqm]	Peak power [kWp]	Energy [kWh/year]	Number of households (25% savings) [kWp]
packing 0,6 (average)	348.287	0,60	208.971,9	34.828,7	43.535.812,5	**23.219**

Urban area (public buildings)

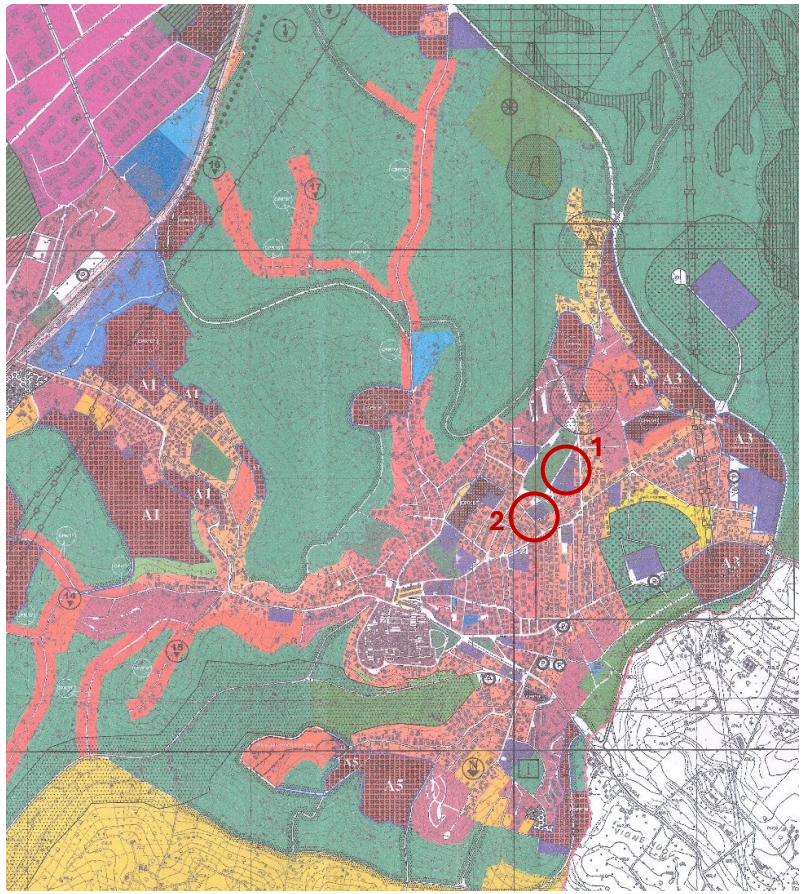
Urban area: PV potential on flat roofs	
Available area [sqm]	13.404,1



Esempio edificio 1



Esempio edificio 2



Aree di interesse (viola) evidenziate nel PRG (stralcio)

Scenario	Available area [sqm]	Packing	Module area [sqm]	Peak power [kWp]	Energy [kWh/year]	Number of households (25% savings) [kWp]
packing 0,6 (average)	13.404,1	0,60	8.042,5	1.340	1.675.513	**893,3**

Historic Centre urban area (public buildings)

Historic centre: PV potential of public buildings with flat/sloped roofs		
Governance	**Roofing typology**	
pubblico	Flat	2.056,0
pubblico	Sloped	799,8
Area disponibile [sqm]		**2.056,0**



Esempio «Copertura piana»



Esempio «Copertura a falda»



Confine Area Scalo

Scenario	Available area [sqm]	Packing	Module area [sqm]	Peak power [kWp]	Energy [kWh/year]	Number of households (25% savings) [kWp]
packing 0,6 (average)	2.056,0	0,60	1.233,6	206	256.998	**137,3**

Sum up

Railyard (private)

Scenario	Available area [sqm]	Number of households (25% savings) [kWp]
packing 0,6 (average)	348.287	**23.219**

Urban area (Public)

Scenario	Area disp. [mq]	Number of households (25% savings) [kWp]
packing 0,6 (average)	13.404,1	**893,3**

Historic centre (public)

Scenario	Area disp. [mq]	Number of households (25% savings) [kWp]
packing 0,6 (average)	2.056,0	**137,3**

Σ

Scenario	Number of households (25% savings) [kWp]
packing 0,6 (average)	**24.249,6**

Stima CER per Monterotondo in relazione agli obiettivi nazionali

National PNRR target for June 2026:

- 2,000 MW installed capacity;
- 2,500 GWh annual production;
- 15,000 active Renewable Energy Communities (CERs).

Incentive end date: 31/12/2027; target: 5,000 MW installed capacity.

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The actual situation in Italy as of 31/12/2025 was (source: GSE):

- 94.96 MW installed capacity (target: 2,000 MW)
- 904 CERs (1,429 plants, 8,653 utility connections) (target: 15,000 active CERs)

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Role of the Municipality of Monterotondo: Monterotondo accounts for 0.07% of the national population, but a slightly lower share of income (0.05–0.06%).

- When scaled against national targets, its goals for June 2026 and December 2027 would be:
  - 1,400 kWp installed capacity by June 2026
  - 3,500 kWp installed capacity by December 2027
    - Regarding the 15,000 CERs, this equates to activating 10–11 communities; however, since they share the same primary substation, this could be interpreted as—for example—14 different configurations within a single CER, such as:
      - 14 configurations of 100 kWp by June 2026
      - 35 configurations of 100 kWp by December 2026

Proposal of scenarios to achieve national objectives

With the Municipality of Monterotondo we came up with a two phase roadmap for the development of Renewable Energy Communities (RECs) in Monterotondo:

- launching a pilot REC;
- stimulating private RECs with the support of the municipality.

Within the framework of the Interreg NEXT MED SHAREN project, and upon receiving feedback from the municipality, the CNR can develop the feasibility study for the pilot REC (Local Action Plan) and carry out related communication activities.

Proposal of scenarios to achieve national objectives

Phase 1 – Municipality-funded pilot Renewable Energy Community (REC) made available to citizens

- The municipality develops an initial pilot REC consisting of four systems—each ranging from 60 to 80 kWp—for a total capacity of 300 kWp, corresponding to an initial investment of approximately €300,000.
    - This capacity represents 21% of the installed capacity targets set for June 2026.

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    - This capacity represents 21% of the installed capacity targets set for June 2026**.**

The municipality identifies four suitable buildings (schools? Palazzo Orsini?) **based on factors such:**

- as solar exposure,
- available surface area,
- and planning constraints

to be used for a CNR feasibility study. This study will simulate the potential installed capacity and, after deducting estimated self-consumption by the schools, determine the number of households that could participate in the Renewable Energy Community (REC).

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Phase 1 – Municipality-funded pilot Renewable Energy Community (REC) made available to citizens

- The municipality develops an initial pilot REC consisting of four systems—each ranging from 60 to 80 kWp—for a total capacity of 300 kWp, corresponding to an initial investment of approximately €300,000.
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The sharing of self-consumption will be managed through a municipal call for expressions of interest addressed to citizens wishing to participate. The municipality is responsible for issuing the call for participation in the REC and may also choose to target the initiative specifically at vulnerable groups of citizens.

Phase 2 – Following the pilot Renewable Energy Community (REC), the municipality encourages the creation of additional, privately funded RECs organized on a "bottom-up" basis.

- The municipality makes sites available to mobilize private capital.
- The municipality issues a call for tenders for REC management (aiming to develop an additional 1,100 kWp to meet 2026 targets and 3,200 kWp for 2027).
- The municipality organizes information activities for private parties, including an information desk, brochures, a webpage, etc.

Next Steps



- Currently waiting for Municipality identification of buildings
- Already prepared a questionnaire for deepening our understanding on the available schools
- Start preparing communication materials
- Develop the in-depth analyses on chosen buildings

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