



City network for Sustainable Mobility and
Transport for Liveable Cities



Climate change and challenges for urban mobility

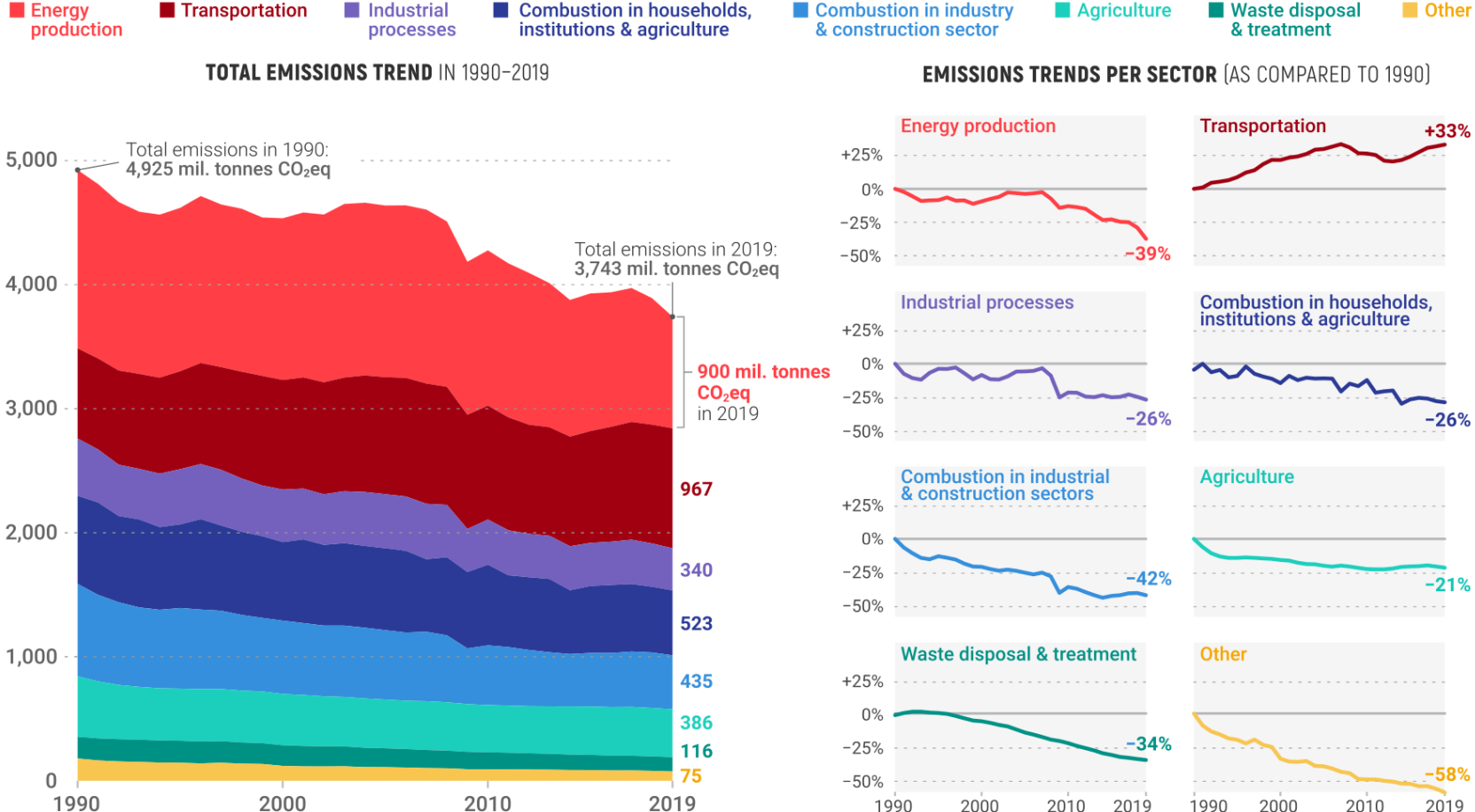
Edoardo Zanchini
City of Rome, Climate Office Director

The role of cities in the decarbonization scenario

Emissions in Eu are not decreasing at the required rate (-24% from 2019).

Transport is the only sector where emissions are rising

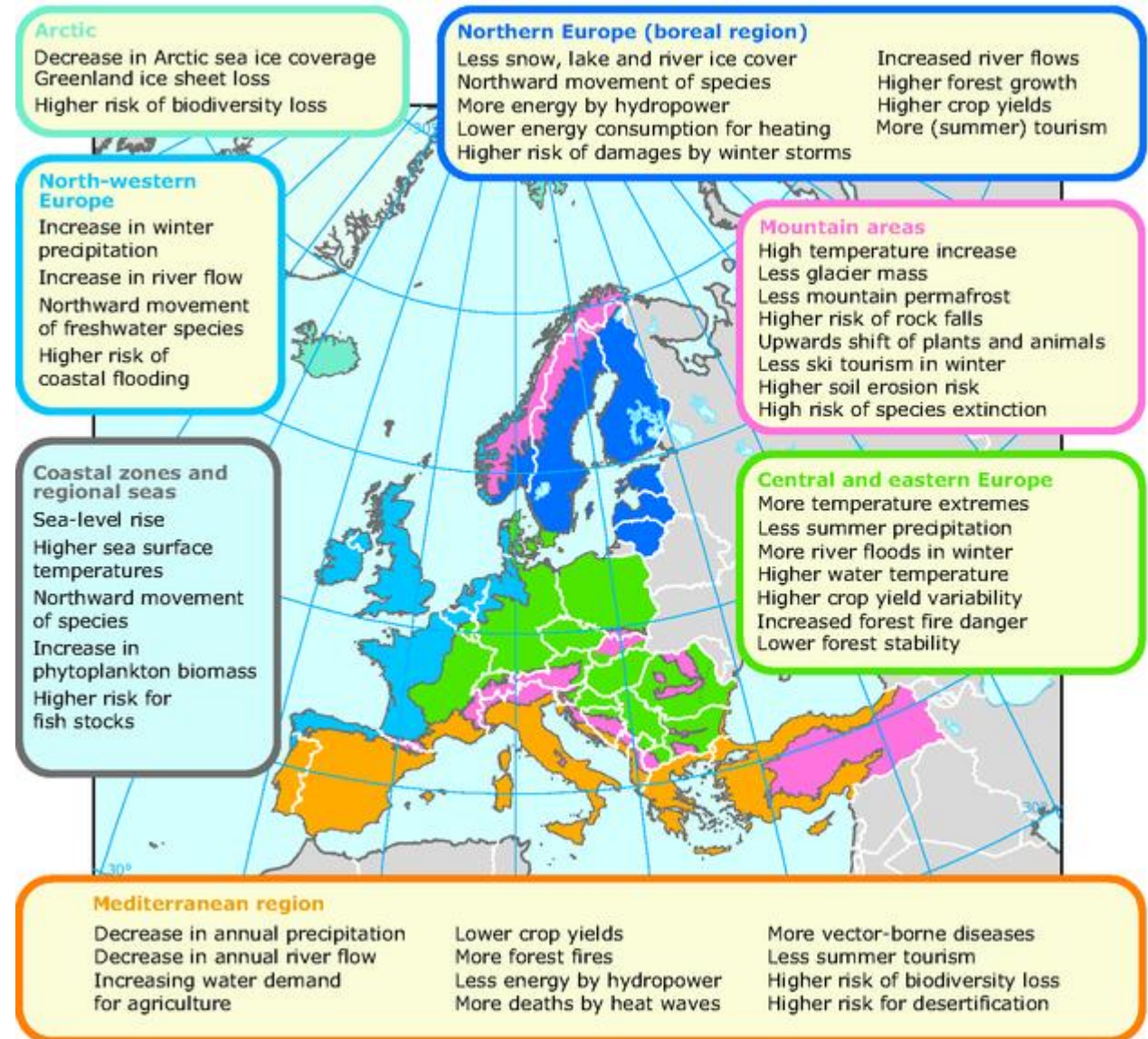
EU 27 CO₂ emissions:
 Domestic transport 23,8%
 International shipping 3,8%
 International aviation 3,2%
 (2022)



The growing impacts of climate change

EUROPE is among the area of the world with the greatest increases in temperatures and with growing impacts of floods, heat waves, periods of drought.

CITIES are on the front lines of climate impacts on public spaces, buildings, infrastructure



EU: the role of cities in the acceleration of decarbonization



The Mission Climate-neutral and smart cities by 2030 is the laboratory to understand the challenges, priorities, barriers that urban areas face towards climate neutrality set in the Climate City Contracts

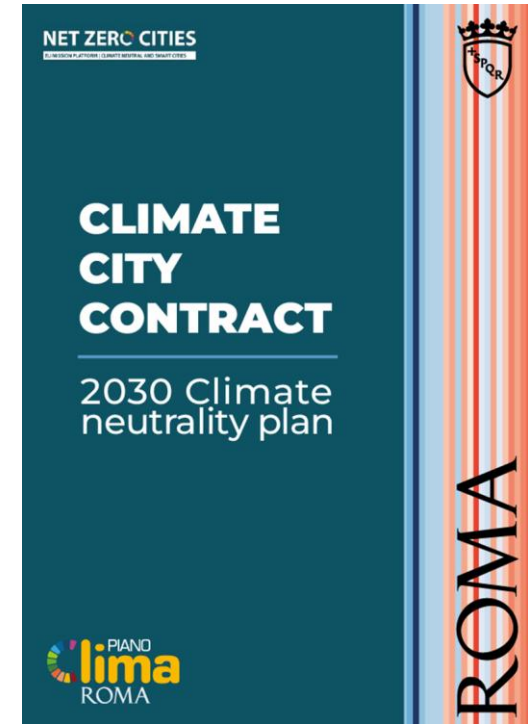
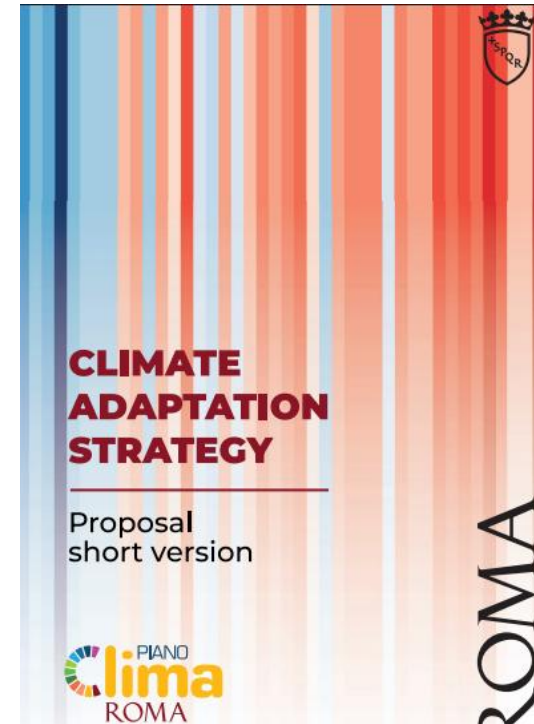
Rome's climate strategy

1) Climate change mitigation:

- Update of the *Sustainable Energy and Climate Action Plan (SECAP)*, approved November 2023
- Approval of the *Climate City Contract*, submitted December 2024

2) Climate change adaptation

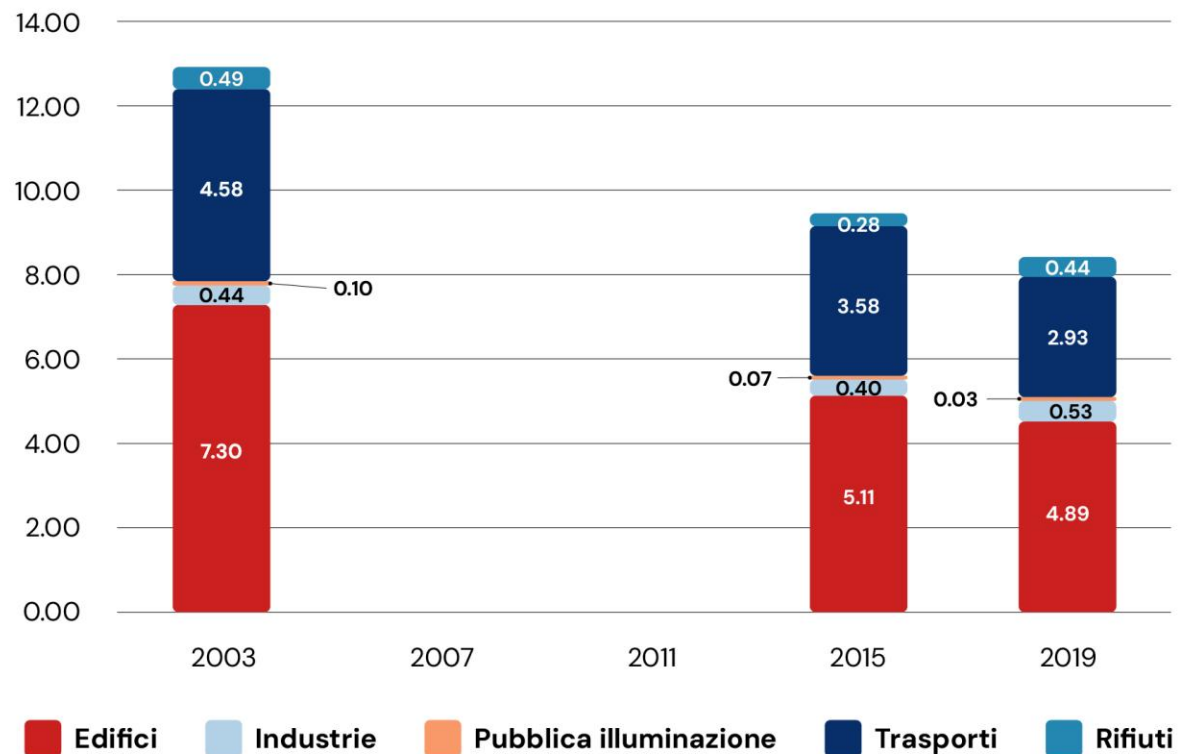
- Approval of the *City adaptation strategy*, approved January 2025



The reduction of emissions in progress since 2003

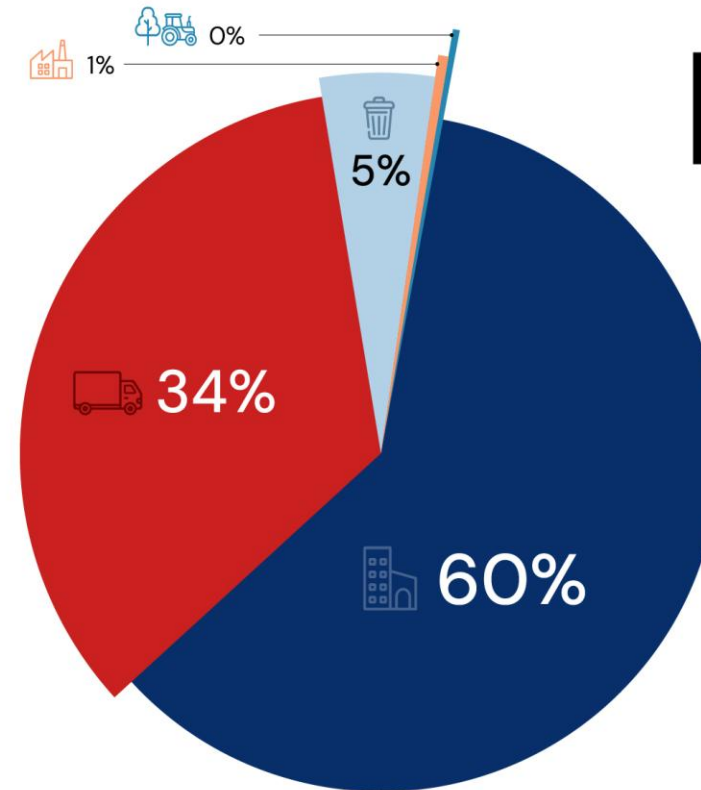
- Between 2003 and 2019, emissions decreased (-34,8%) while GDP increased (+29,5%)
- Sectors that are more responsible for the emissions are buildings (60%) and transport (34%), industry, waste, agriculture.

Evoluzione delle emissioni di Roma Capitale (in Mln tonn CO2e) dal 2003 al 2019 [ripartizione tra le sorgenti]



Priorities and challenges

- Accelerate the energy retrofit of buildings with the elimination of fossil fuels
- Promote and integrate public, electric and cycle mobility
- Create widespread forestation with climate mitigation and adaptation objectives

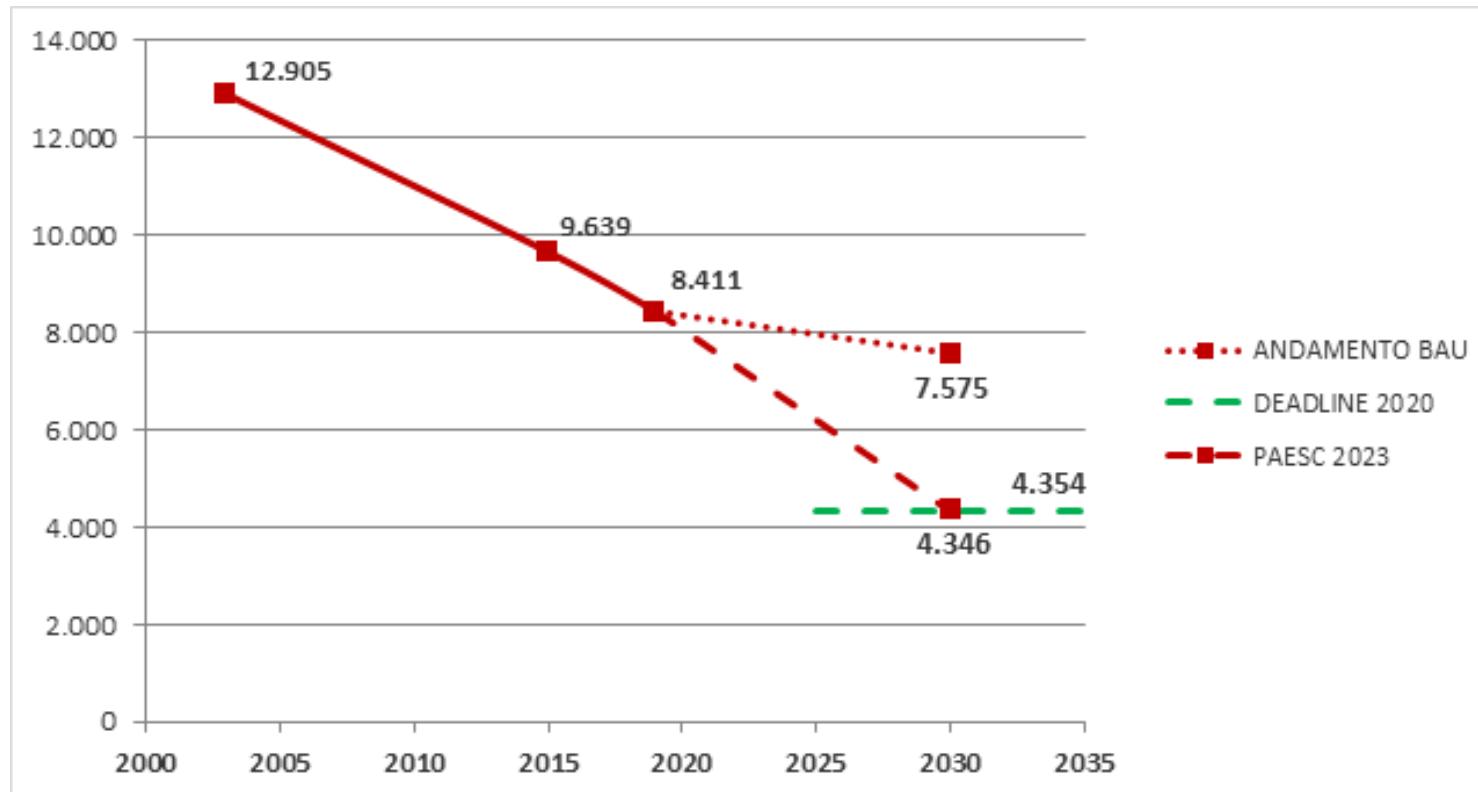


Ripartizione emissioni CO₂e per settore anno 2019 (baseline CCC)

- Edifici
- Trasporti
- Rifiuti
- Processi Industriali e Uso dei Prodotti - IPPU
- Agricoltura, Foreste ed Altri Usi del Suolo - AFOLU (valore compensato da sistemi vegetativi)

The new target and path of the climate plan

- Increase the ambition, to contribute to the 1,5 degree goal, of the Paris climate agreement.
- New strategies and actions: target -66% compared with 2003 emissions



Logo for the 'PIANO clima ROMA' climate action plan, featuring a colorful circular graphic and the text 'PIANO clima ROMA'.

Aggiornamento del Piano di azione per l'energia sostenibile e il clima

OBIETTIVO 1,5 GRADI

con il contributo scientifico di

Logos of ENEA (Ente Nazionale per le Nuove Tecnologie, l'Energia e lo Sviluppo Sostenibile), GSE (Gestore dei Servizi Energetici), and ISPRA (Istituto Superiore per la Protezione e la Ricerca Ambientale).

ROMA

CLIMATE CITY CONTRACT

2030 Climate
neutrality plan



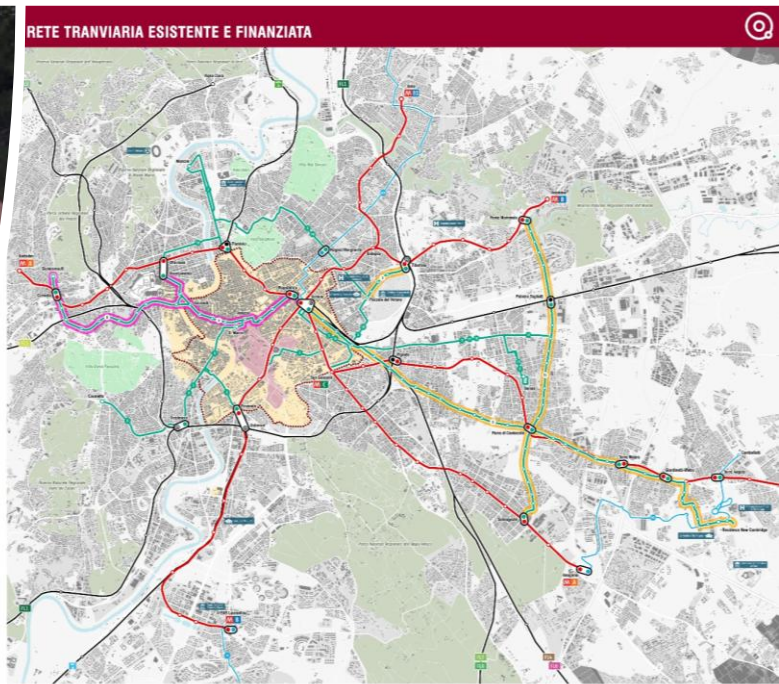
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- ACTION PLAN
- INVESTMENT PLAN
- STAKEHOLDER COMMITMENT

The strategic area of intervention for decarbonization:

1. production from renewable sources (self-consumption, sharing..),
2. efficiency of buildings and electrification of thermal systems,
3. **integrated zero-emission mobility,**
4. decarbonization of the tertiary sector and industry,
5. adaptation and resilience of the electricity grid,
6. sustainable management of waste and materials,
7. green procurement.

Projects in progress:
4 new tram lines,
metro C, cycling
paths, electric
buses, sharing
mobility.



The increasing challenge of adaptation for urban mobility

In Rome, there are significant increases in temperatures and changes in precipitation patterns

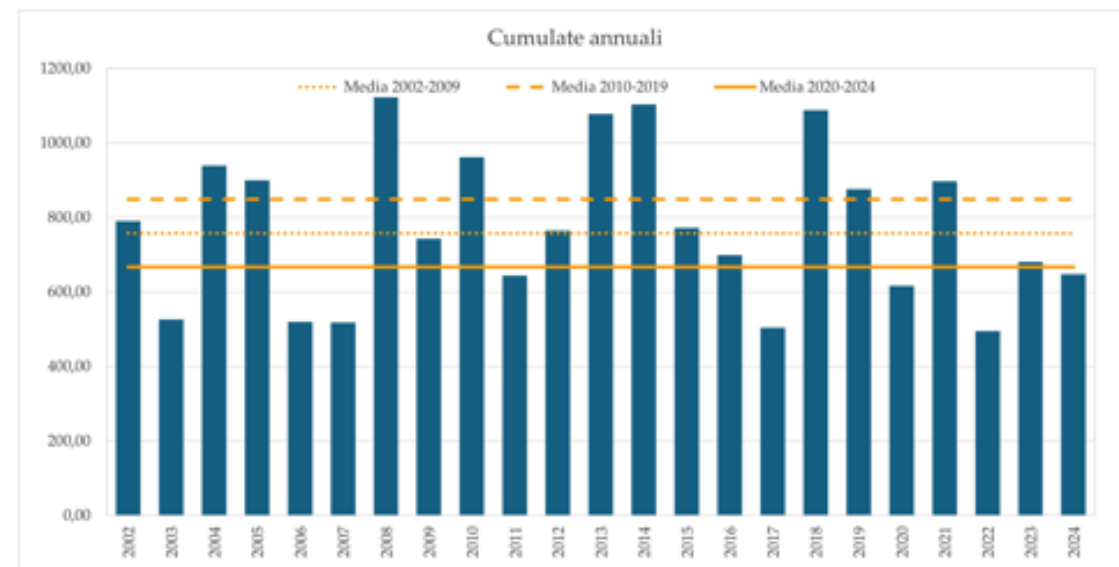
Rome is the city in Italy that is suffering the greatest impacts on infrastructure from heavy rains and heat waves (number of days with interruption of service)



ROME: average maximum annual temperatures



ROME: changes in rainfall

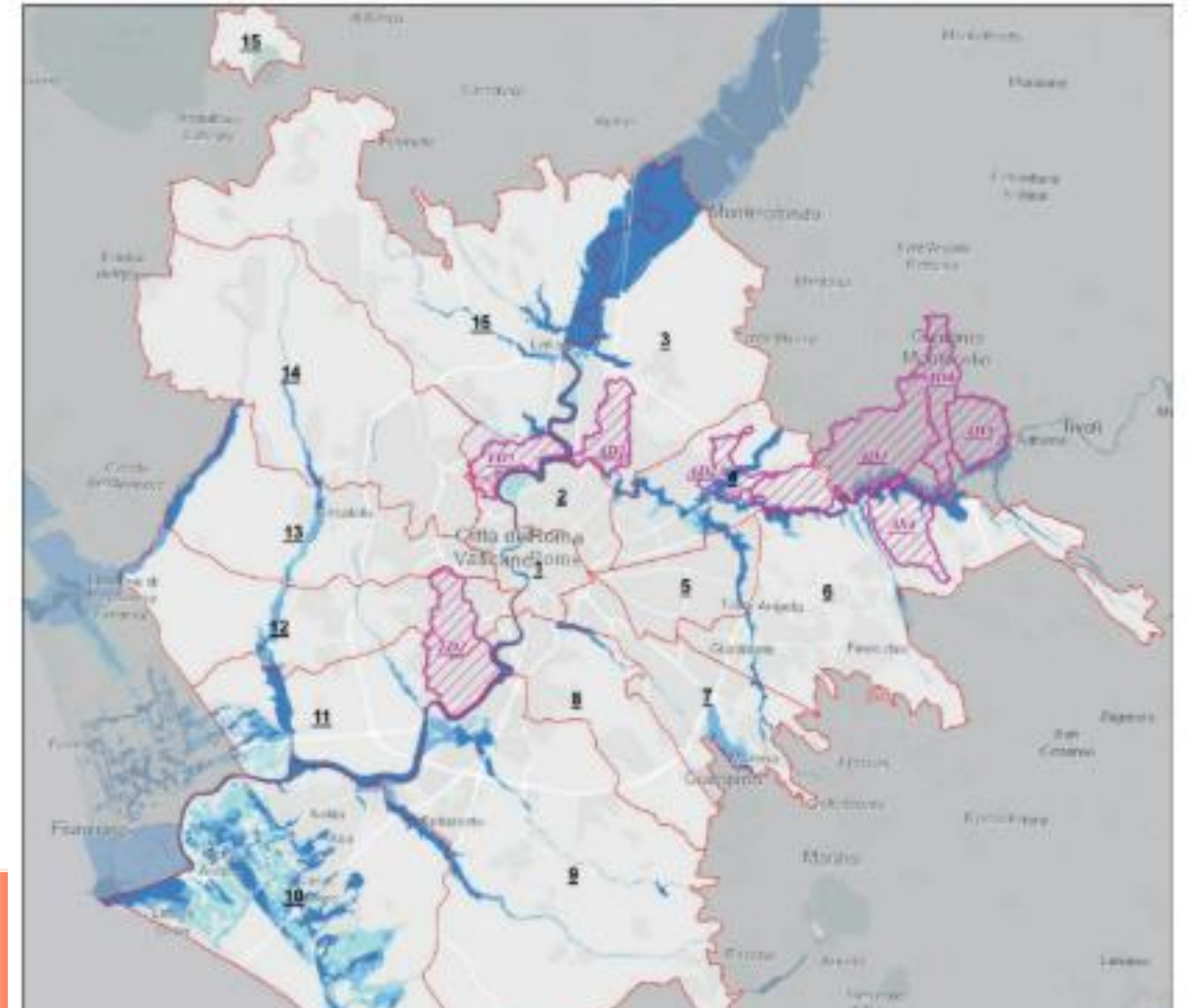


CLIMATE VARIATIONS IN ROME EXPECTED BETWEEN 2036 AND 2065

	 Temperatura media	 Indice di durata dei periodi di caldo	 Indice di disagio termico (Categoria 4)	 Giorni di gelo
Mitigazione aggressiva	+1,1 °C ($\pm 0,3$ °C)	+22 giorni (± 14 giorni)	+8 giorni (± 4 giorni)	-7 giorni (± 4 giorni)
Forti mitigazione	+1,5 °C ($\pm 0,3$ °C)	+34 giorni (± 15 giorni)	+10 giorni (± 4 giorni)	-9 giorni (± 5 giorni)
Ad elevate emissioni	+1,9 °C ($\pm 0,3$ °C)	+48 giorni (± 17 giorni)	+12 giorni (± 4 giorni)	-12 giorni (± 7 giorni)

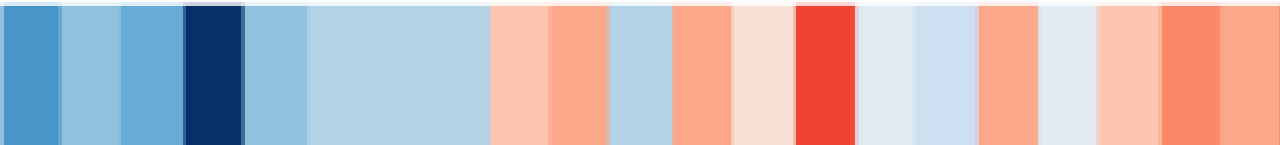
Annual climate variations (ensemble mean and standard deviation reported in brackets) expected on some indicators considered for the period 2036-2065, compared to the reference period 1981-2010, for the RCP2.6, RCP4.5 and RCP8.5 scenarios. The values are

1) **THE GREATER INTENSITY AND FREQUENCY OF HEAVY RAIN AND FLOODS**, with consequences for infrastructures and urban spaces, greater risks of river flooding.



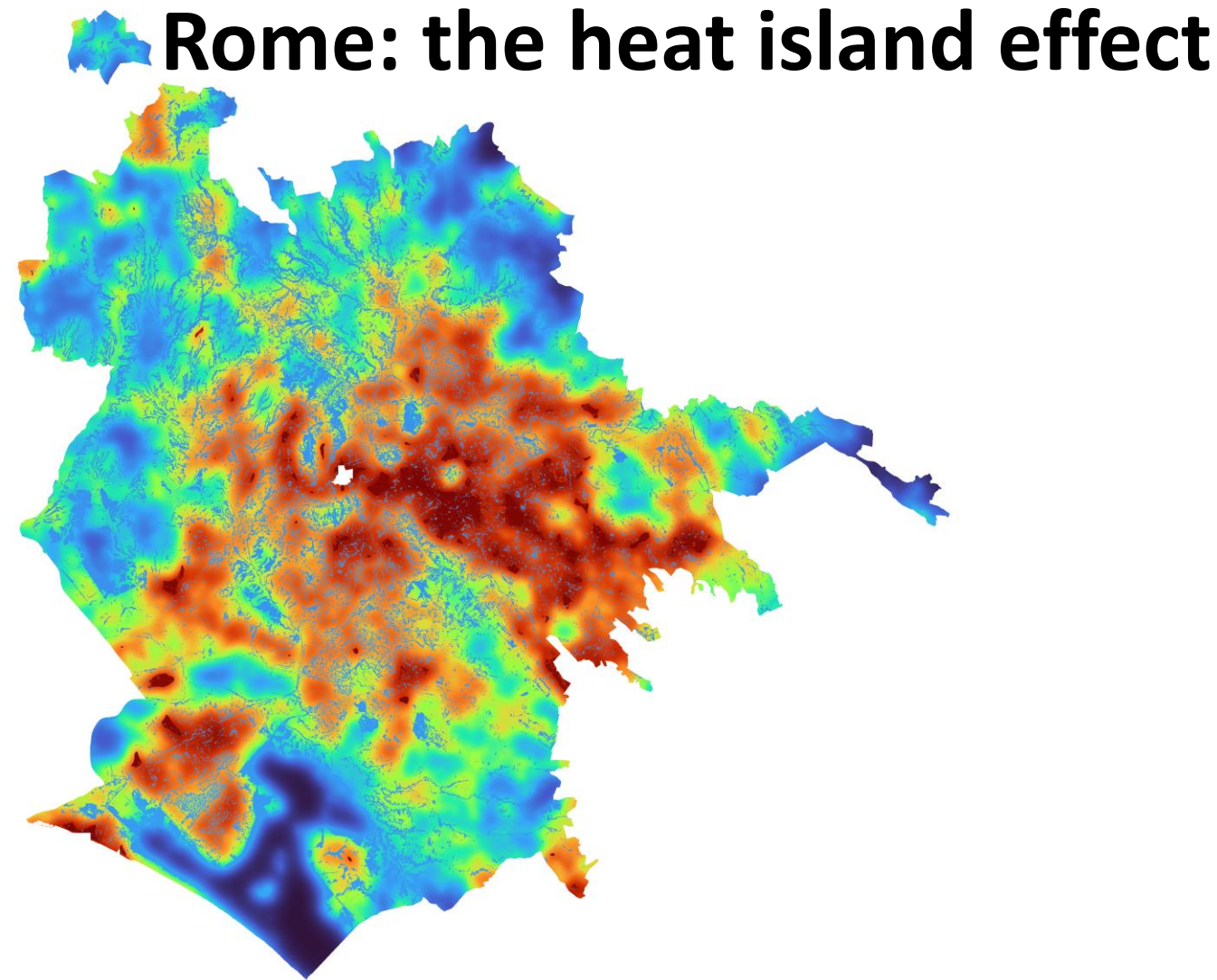
THE PRIORITIES OF ADAPTATION IN ROME

THE GREATER INTENSITY AND FREQUENCY OF HEAVY RAIN AND FLOODS, with consequences for infrastructures and urban spaces, greater risks of river flooding.

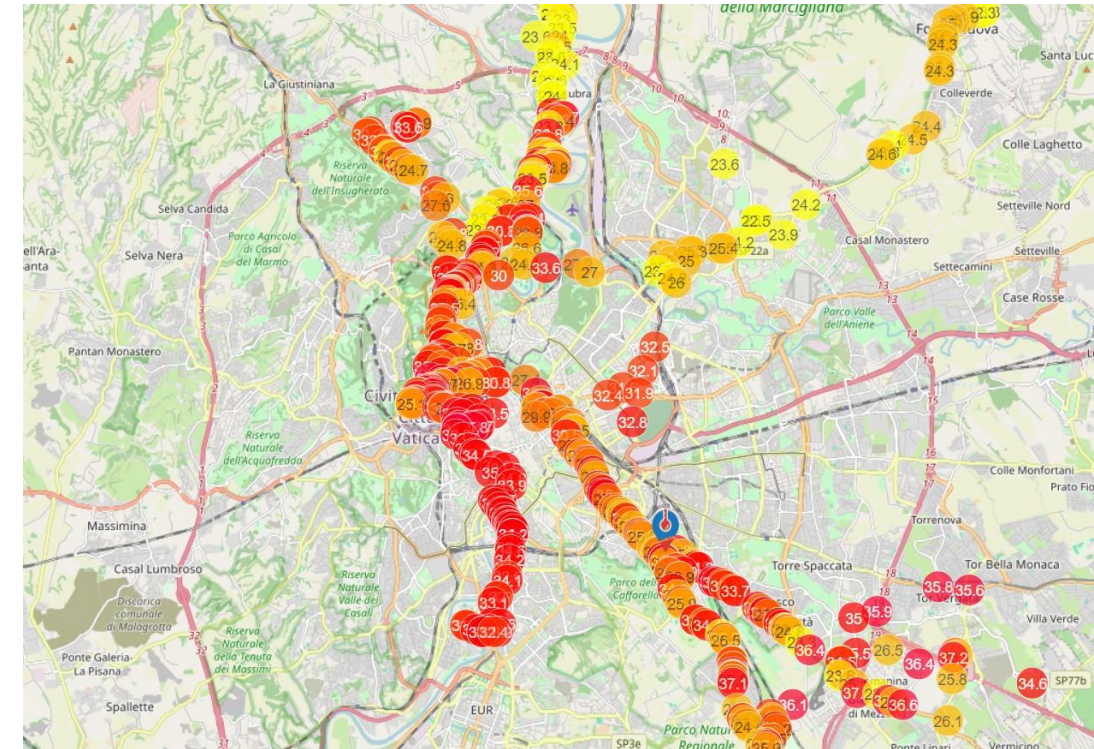
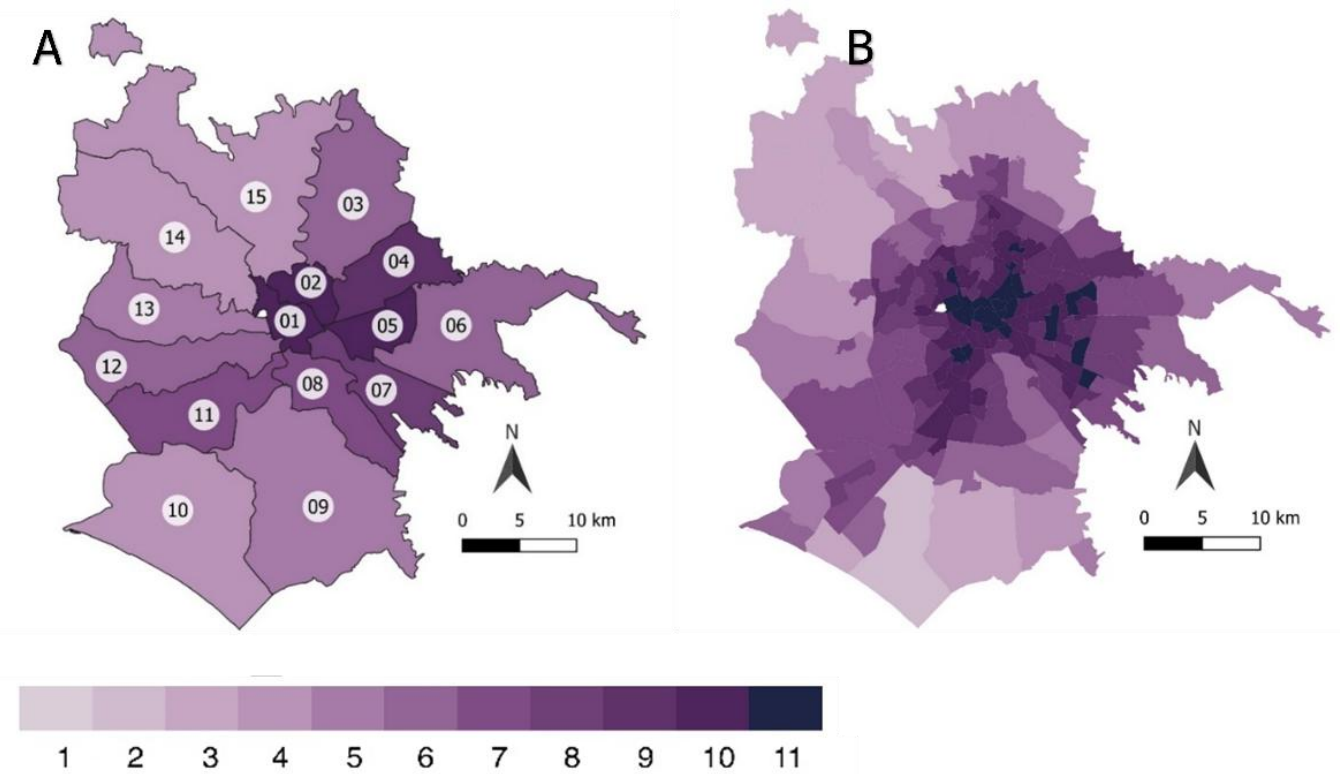


THE PRIORITIES OF ADAPTATION IN ROME

**THE RISE IN TEMPERATURES
AND INCREASE IN HEAT WAVES,**
in a city where the degree of heat
has already increased and where
there are neighbourhoods with a
worrying island effect of urban heat.



IDENTIFICATION OF AREAS OF HIGH CLIMATE AND SOCIAL VULNERABILITY



Valori medi di vulnerabilità ambientale e climatica per distretto sanitario (A) e per zona urbanistica (B).



ACTIONS: YEAR 2025-2026

- Green and blue approach in the project of the Piazze for the Jubilee 2025 Catholic Church.
- Revision of the urban planning and project standards in line with adaptation targets



Integrated climate approach to renovation of urban areas. TSU EU funded project: historic center and Centocelle.



Reform and Investment Task Force

Framework contract REFORM/2021/OP/0006 Lot 1

Request for services TSIC-RoC-24766

Climate adaptation – The Urban Heat Island effect in the city of Rome

Report on the heat island effect in the city of Rome
and identification and characterisation of pilot areas

January 31st 2025



Analysis of the most attractive locations



Mapping of museums, churches, schools, senior centers, sports centers

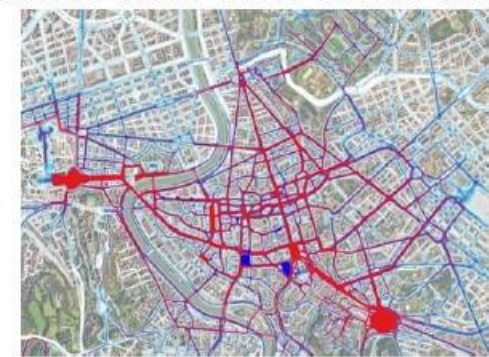


Mapping of access to drinkable water

Evaluation of mobility patterns



Analysis of existing and future stops of TPL



Mapping of key pedestrian flows

Climate change and challenges for urban mobility

Opportunities:

ETS2, Emission trading scheme (2027)

Revenues for climate action in transport

Social Climate Fund (2025 national plans)

Revenues to tackle transport poverty

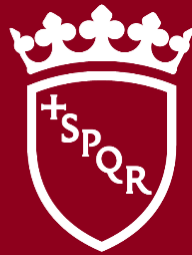
New TEN-T regulation

Resources for urban areas to become hubs for innovation of transport and decarbonization

Challenges:

- **Resources** for more public transport, zero-emission and sharing mobility
- **The electrification of electric mobility:** flexibility of the grid, digitalization, integration of renewable sources.
- **Integrated adaptation and mitigation solutions in urban areas:** to ensure safety and attractiveness of public transport in a scenario of increasing climate impacts.

ROMA



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