

# Teaching Decarbonisation

## Methodologies and experiences from CITY MINDED

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edited by Anna Laura Palazzo, Lorenzo Barbieri, Romina D'Ascanio,  
Federica Di Pietrantonio and Francesca Paola Mondelli



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# The background of the CITYMINDED project: urban sustainability in EU cooperation

*Federica Di Pietrantonio, Università degli Studi Roma Tre*

The CITYMINDED project was prompted by the recognition of the capital importance of urban sustainability in contemporary Europe. Nowadays, around 75% of Europeans live in cities<sup>1</sup> and this number will rise: Europe's level of urbanisation is expected to increase to approximately 83.7% in 2050<sup>2</sup>. On the other hand, cities generate about 70% of global GHG emissions. This concentration of population, infrastructure and human activities makes cities particularly vulnerable to the negative impacts of climate change<sup>3</sup>.

For these reasons, urban areas are currently the most important test-bed for energy transition and decarbonisation models. However, decarbonisation touches upon a wide variety of topics, ranging from energy to sustainable mobility, urban design, awareness raising, urban waste management, etc.

This calls for a systemic interdisciplinary approach, which, at the time the project was drafted, was not widespread in ordinary academic teaching practices, but was nonetheless deemed necessary by partner organizations to form more employable professional profiles, able to coordinate different disciplinary domains, sources of information, stakeholders and competences. Project partners were also aware that teaching practices in the fields related to urban matters often lacked real-world experiences and contacts beyond classroom activities, thus preventing students to correctly interpret contexts and interact with the

territorial actors playing a role in the achievement of urban decarbonisation objectives.

CITYMINDED intended to fill this gap, by developing and testing an innovative, creative, European-scaled learning environment called 'city decarbonisation itinerant workshop', where students, specialists and stakeholders could jointly address decarbonisation challenges through a 'learning-by-doing' method.

This approach did not appear from nowhere, but rather resulted from the capitalization of previous experiences carried on by partner organizations. On one hand, CITYMINDED built on the results of the FP7 City-Zen<sup>4</sup> project (with the University of Siena as partner), which used urban neighbourhoods as living labs, assessing their carbon footprint and designing feasible decarbonisation agendas with the direct involvement of local stakeholders and citizens in a series of brief, intense training and co-working sessions called 'Roadshows'. The field of application proposed by CITYMINDED was thoroughly innovative: the City-Zen method and tools were adapted to a Higher Education context and tested with students of urban-related disciplines (architecture, urban planning, geography, etc.). The purpose was twofold: to improve the learning experience (developing students' knowledge and soft skills, and increasing their capacities to deal with complexity), and to test and promote new teaching approach-

[1] Source: European Environmental Agency, 2021 (<https://www.eea.europa.eu/themes/sustainability-transitions/urban-environment>), last consulted on 01/09/2022). See also: Eurostat (2016) *Urban Europe - Statistics on cities, towns and suburbs - 2016 edition*. Luxembourg: Publications office of the European Union, p. 38.

[2] Source: [https://knowledge4policy.ec.europa.eu/foresight/topic/continuing-urbanisation/developments-and-forecasts-on-continuing-urbanisation\\_en](https://knowledge4policy.ec.europa.eu/foresight/topic/continuing-urbanisation/developments-and-forecasts-on-continuing-urbanisation_en) (last consulted on 29/07/2022).

[3] Ibid.

[4] [www.cityzen-smartcity.eu](http://www.cityzen-smartcity.eu)

es based on knowledge co-creation, international exchange and real-life applications. Therefore, CITYMINDED focused less on the urban sustainability agenda as a product, and more on the process leading to its definition, and on the learning environment where the process occurs.

On the other hand, the project inserted itself in the research on urban sustainability already conducted in the European academy in general and in partner universities in particular.

The partners of CITYMINDED already had a history of commitment in research and teaching on urban sustainability. Such commitment had already given way to collaboration in several Erasmus+ projects prior to the CITYMINDED experience. For instance, the 2015 projects E-RESPLAN (a Strategic Partnership including MIEMA, IRENA, and Universities “Pablo de Olavide” and Roma Tre as partners) and ENEPLAN (a Capacity Building project involving the Universities of Siena, Roma Tre and UPO, along with MIEMA) had already taken on the challenge to represent, manage and teach the complexity of decarbonisation through concept maps, by testing their educational use in energy planning within a multi-disciplinary partnership. Both projects had capitalized on the results of the Erasmus+ project EH-Cmap (funded in 2014 and participated by IRENA and MIEMA), which applied concept mapping to the energy refurbishment of heritage buildings.

At the same time, partners have continued exploring and developing the multi-disciplinary approach used in CITYMINDED, by promoting other Erasmus+ projects where such approach was broadened and applied to climate adaptation in cities. In 2020, for

instance, University of Roma Tre, UPO and MIEMA have joined forces again in the project InCLIMATE - Integrating climate resilience in EU higher education, focusing on urban resilience to climate change.

The ‘activism’ of CITYMINDED partners on such matters is certainly not unprecedented in the European academy. In general, European Universities are widely involved in projects on urban sustainability, funded by the EU Commission under a variety of Programmes. Such involvement entails both inter-university collaboration and partnerships with non-academic organizations. However, at the time the proposal was developed, such projects were not as abundant as it may be expected, and urban sustainability in a climate change context was thus considered by the CITYMINDED consortium as a promising topic, especially if seen through the lens of academic teaching practice.

A rapid search of EU-funded projects in the whole 2014-2020 programming period reveals, indeed, that the urban sustainability topic, despite its declared relevance at EU level<sup>5</sup>, has been quite underexploited in Programmes focusing on research and higher education.

This emerges, for instance, from a quick analysis of the proposals funded under the Erasmus+ Programme, and especially of the Strategic Partnerships for Higher Education, which entail inter-university collaboration for the development, transfer and/or implementation of innovative practices in higher education. On over 2900 funded projects, only 1% are explicitly dedicated to urban sustainability issues, such as sustainable energy, climate change adaptation, blue and green infrastructure, water and waste management, etc.<sup>6</sup>

Even fewer proposals focusing on such

[5] See for instance the Urban Agenda for the EU, launched in 2016 with the Pact of Amsterdam (<https://futurium.ec.europa.eu/en/urban-agenda/library/pact-amsterdam>).

[6] Source: project search database of the official website of the Erasmus+ Programme <https://erasmus-plus.ec.europa.eu/projects/search> (last consulted on 29/07/2022).

matters were funded in the same period by the Horizon2020 Programme, the most important EU Programme on research: only 11 (involving around 24 EU Universities), which can be considered as a negligible share of the hundreds of projects funded<sup>7</sup>.

Urban sustainability has not been a much more successful topic in territorial cooperation programmes: less of the 4% of the total number of projects funded in 2014-2020 address urban sustainability topics, such as energy refurbishment, sustainable mobility and climate resilience<sup>8</sup>. Half of them have universities as partners, for a total of around 200 universities involved.

It is worth noticing that all these projects are largely focused on specific themes, perhaps lacking an overall reflection on the physical re-shaping of urban settlements and a comprehensive vision of urban planning and design oriented to sustainability.

It is therefore desirable that European universities, having engaged in diverse Programmes and established linkages with the non-academic world in the last programming period, capitalize these experiences and transfer them into academic practice and research, in order to innovate higher education on urban matters and pursue a collective multi-disciplinary reflection on urban sustainability, within the framework of the new EU Urban Agenda<sup>9</sup> and the New European Bauhaus<sup>10</sup>.

The success of the CITYMINDED proposal could be considered as a promising indication that there are still margins to increase the incidence of urban sustainability issues (and of an integrated, more comprehensive approach to them) in EU-funded academic research and teaching, as well as in international, inter-university cooperation Programmes.

[7] Source: <https://cordis.europa.eu/search> (last consulted on 29/07/2022).

[8] Source: Keep database: <https://keep.eu/> (last consulted on 29/07/2022).

[9] <https://www.urban-agenda.eu/>

[10] [https://new-european-bauhaus.europa.eu/index\\_en](https://new-european-bauhaus.europa.eu/index_en)

## Teaching Decarbonisation

This issue of leNote di U3 brings together the results of the Erasmus+ project CITY MINDED.

It aims to promote learning opportunities in order to produce professional profiles that are able to pursue decarbonisation by conducting proper actions resolve environmental challenges, whilst ensuring a good quality of life for citizens.

The project involves five European partners - three Universities and two Energy Agencies: the lead partner, IRENA - Istrian Regional Energy Agency (HR); the Italian Universities of Roma Tre – Department of Architecture and Siena - Department of Earth, Environmental, and Physical Sciences (IT); the University 'Pablo de Olavide' - Department of Geography (ES); and the Malta Intelligent Energy Management Agency (MT).

This publication is a unique opportunity to share the knowledge on how the workshops were structured and conducted, particularly in the situation when the activities had to be adapted to the pandemic, as was the case in Siena, Rome and Seville. The workshop in Malta was carried out in person, so this provides the opportunity for a comparison.

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