THE ROLE OF UNIVERSITIES IN THE PROCESS OF DECARBONIZATION OF URBAN AREAS

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GOAL AND COORDINATION

The goal of the Climate Change WG (70 Italian Universities involved) is to guide the commitment of universities towards actions to face climate change through the sharing of information, materials and methods aimed at defining common metrics, knowledge, skills and good practices.

The activities concern support for the creation of **inventories of universities' CO_2 emissions**, the promotion of **mitigation and adaptation plans**, support for the assumption of formal commitments to contain emissions and communication and training on the topic.

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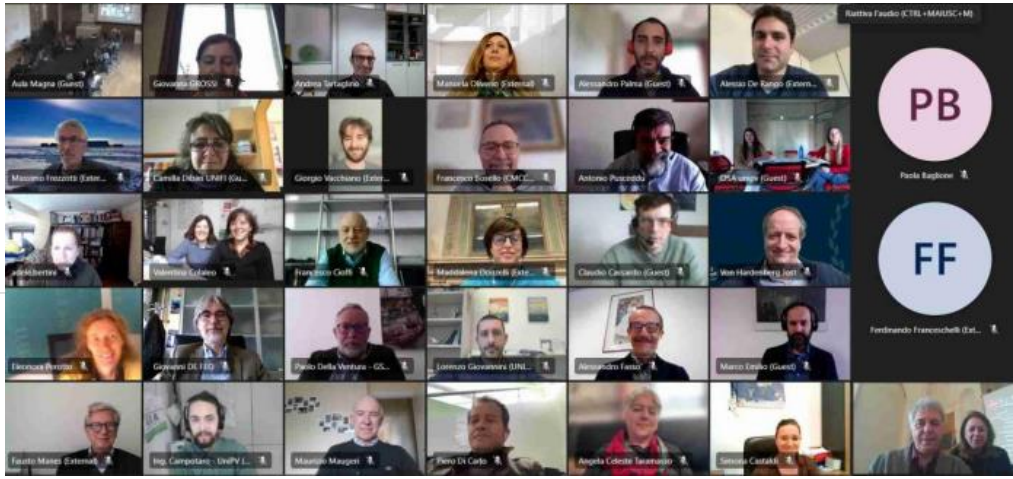


INVENTORIES OF GREENHOUSE GAS EMISSIONS

An inventory usually considers **direct emissions** and the **main indirect emissions** (i.e. consumption of electricity or heat). The standards and/or methodologies usually used for inventories are:

- ISO 14064-1 standard
- GHG Protocol

The GHG Protocol and the ISO 14064 standard group activities into three scopes: Scope 1, Scope 2 and Scope 3.

Scope 1 emissions generated by *sources in the possession or control of the university*, and generally includes: emissions deriving from **stationary combustion sources** based on fossil fuels for energy purpose; emissions deriving from **mobile combustion sources** based on fossil fuels, (means of transport owned or under the control of the university); emissions deriving from any **agricultural activities** carried out in the area owned by the university.

Scope 2 includes *indirect emissions generated in the production of electricity consumed by the university*, such as: **electricity purchased** from the national grid; the **heat/steam/cold purchased** from third parties.

Scope 3 includes all *indirect emissions that are a consequence of the university's activities*, but come from sources that are not in the possession or control of the university. It includes: emissions linked to **goods purchased** by the university; **mobility/commuting, missions and trips of employees and students**; **disposal of waste**.

MEASURE

REDUCE

OFF-SET

HOW TO MEASURE

2019 - White paper - Operational guidelines for the preparation of inventories of greenhouse gas emissions of Italian universities

The document had the objective of providing operational information to Universitiies, such as greenhouse gases sources to be included or emission factors to be used, in the definition of their own greenhouse gases inventory.

2023 - White paper - Operational guidelines for the preparation of inventories of greenhouse gas emissions in Italian universities

The document updates the methodology and emission factors proposed in the previous version. It also introduces a calculation methodology to estimate the CO_2 absorbed by a University's trees and agricultural crops.


RETE DELLE UNIVERSITÀ PER LO SVILUPPO SOSTENIBILE
Gruppo di Lavoro Cambiamenti Climatici

LINEE GUIDA OPERATIVE PER LA REDAZIONE DEGLI INVENTARI DELLE EMISSIONI DI GAS SERRA DEGLI ATENEI ITALIANI

HOW TO REDUCE

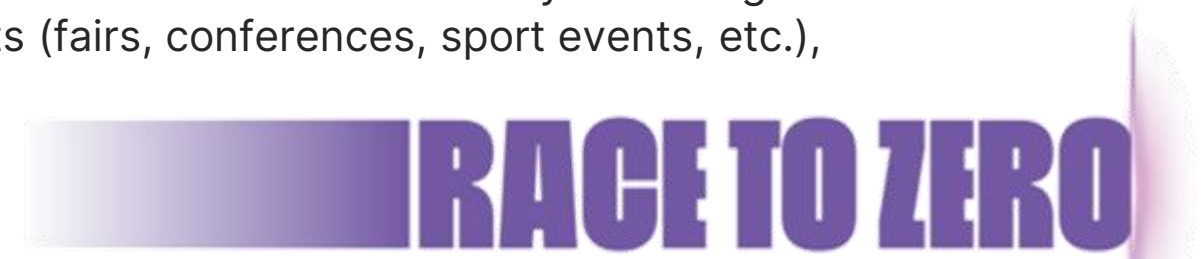
2020 - White paper - Guidelines for drawing up university CO2 emissions mitigation plans

Direct interventions to reduce emissions, carried out by the University (i.e. energy consumption and mobility) shall constitute the priority way to achieve the objectives of a Mitigation Plan.

The document suggests to define **minimum goals for reducing CO_2 emissions**:

- reduction of the University's emissions by **20% by 2030** compared to the reference year (the baseline defined in the first greenhouse gases inventory)
- **net zero emissions by 2050,** according to the targets taken by several universities as part of the **"Race to zero"** initiative https://unfccc.int/climate-action/race-to-zero-campaign)

If the direct interventions of mitigation implemented are not sufficient, the purchase and use of "certified carbon credits" deriving from the reduction of emissions or absorption of CO2 achieved in other projects could be evaluated, The same strategy of "off-setting" is commonly used at international level by other organizations to offset the annual emissions of individual organizations or spot events (fairs, conferences, sport events, etc.),



HOW TO ADAPT

2020 - White paper - Guidelines and good practices for adapting Italian universities to climate change

The document therefore provides guidance at two levels:

- providing **guidelines for the drafting of climate change adaptation plans**, to universities that want to address this issue in a structured way;
- sharing **good practices**, deriving from the experience of national and international universities, which can be quickly implemented in universities.

The definition of good practices focuses specifically on the **risk due to heat waves and extreme precipitation events**.

HOW TO OFF-SET

Subgroup Compensation method for residual emissions in universities - Michela Gallo, University of Genoa

The subgroup will focus on the drafting of a Guideline for offsetting GHG emissions and on generating carbon credits for the future achievement of climate neutrality. There are several options for emissions off-setting that can be investigated:

- emission reduction credits deriving from Kyoto Protocol such as Clean Development Mechanism (CDM) projects;
- certified credits of the voluntary market (VERs - verified emission reductions), available on different types of platforms and generated according to different standards;
- allowances from the European Emission Trading System (EU-ETS);
- …

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OTHER SUBGROUPS OF THE WORKING GROUP

Subgroup Water sustainability and climate change - Francesco Cioffi, University of Rome La Sapienza

Started at the end of 2022, this subgroup is focused on the drafting of guidelines on the sustainable use of water resources in relation to the impacts of climate change, providing guidance for all Italian universities.

Subgroup Information systems for data collection and calculation of emissions in use at the Universities of the Climate Change Work Group - Simona Castaldi, University of Campania - Luigi Vanvitelli

The subgroup is aimed at collecting calculation tools, information systems, databases, etc. used for data collection and calculation of emissions in use at the universities, in order to define standard formats/tools to support universities in drawing up their inventories and quantifying GHG emissions.

CONTATTI E INFORMAZIONI

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