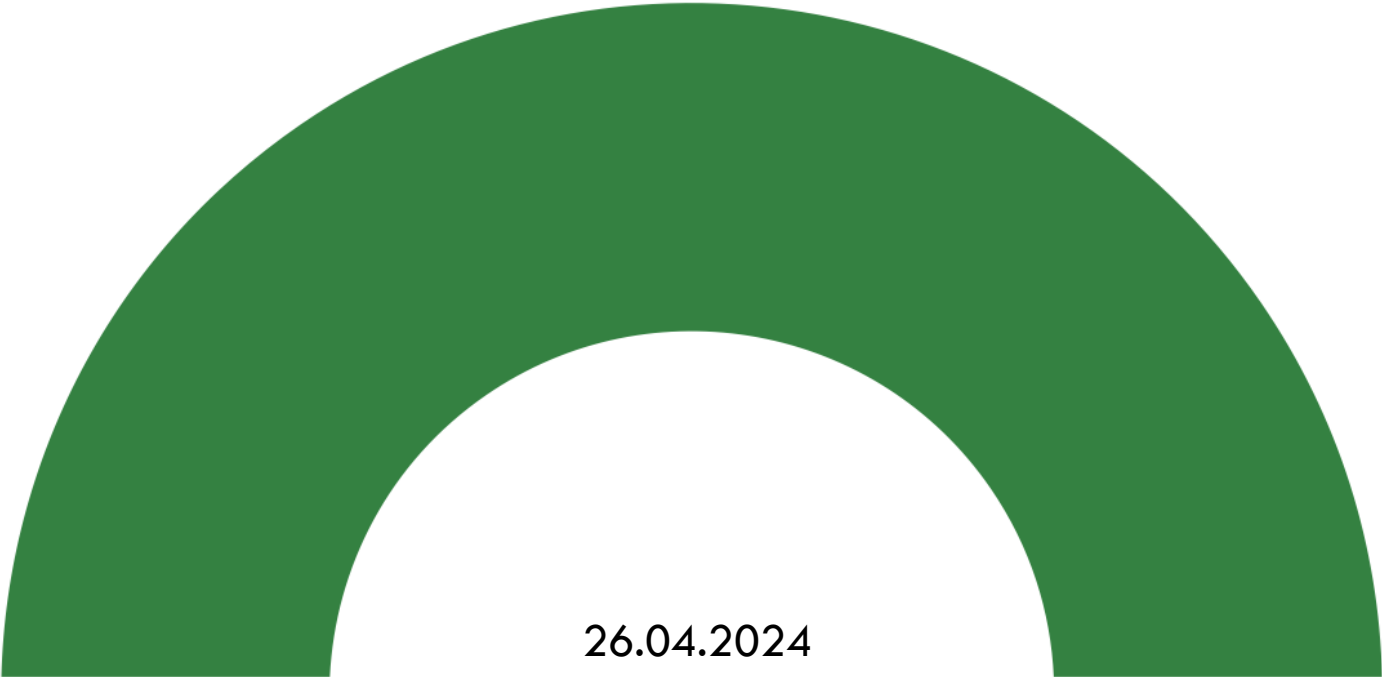




NOVA University's commitment to Sustainability and Climate Action - the treasure map!

Júlia Seixas

NOVA Pro-Rector for Sustainability



26.04.2024

**1st International Conference of FEE EcoCampus
“Getting Higher Level Education Climate Ready”**

GLOBAL

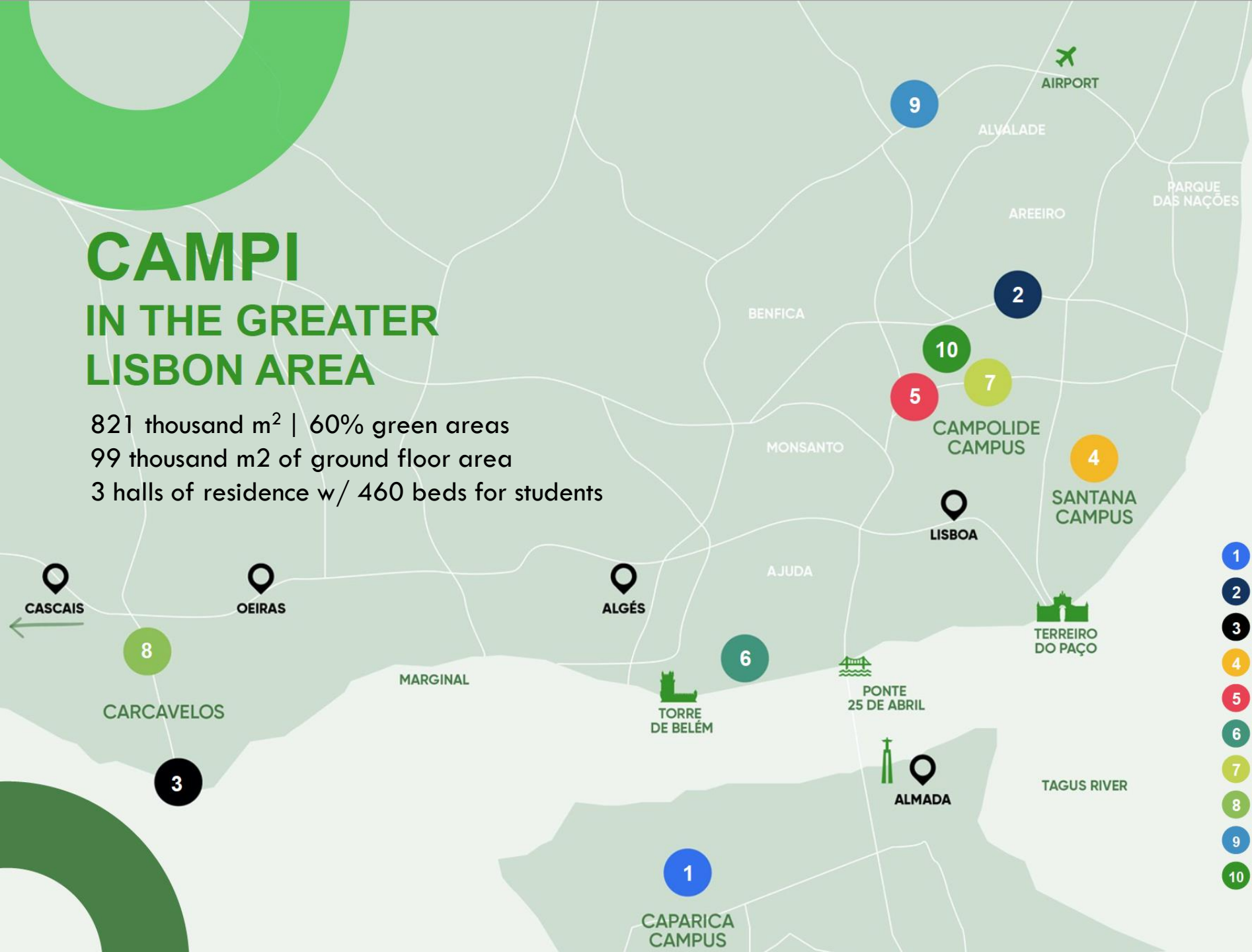
Teaching, research and innovation are truly international in quality, agendas and partners



18% international students from 112 countries

CAMPI IN THE GREATER LISBON AREA

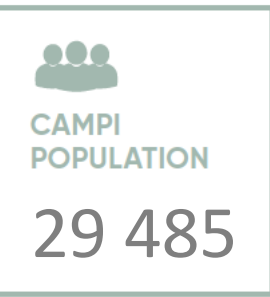
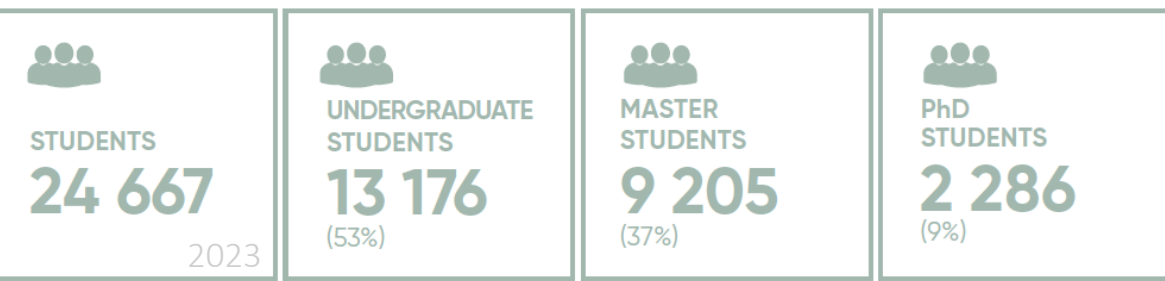
821 thousand m² | 60% green areas
 99 thousand m² of ground floor area
 3 halls of residence w/ 460 beds for students



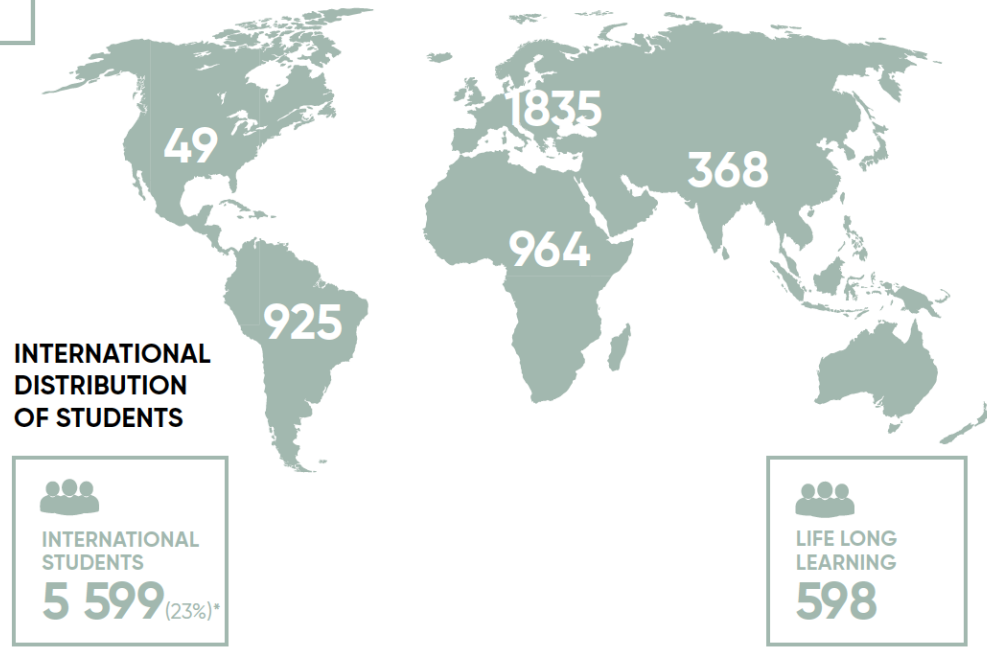
9 Schools and Institutes

- 1 NOVA School of Science and Technology
- 2 NOVA School of Social Sciences and Humanities
- 3 NOVA School of Business and Economics
- 4 NOVA Medical School
- 5 NOVA School of Law
- 6 NOVA Institute of Hygiene and Tropical Medicine
- 7 NOVA Information Management School
- 8 NOVA Institute of Chemical and Biological Technology António Xavier
- 9 NOVA National School of Public Health
- 10 Rectorate

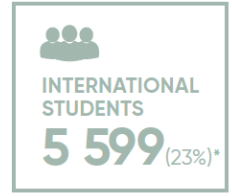
NOVA AT A GLANCE



NOVA COMMUNITY



INTERNATIONAL DISTRIBUTION OF STUDENTS

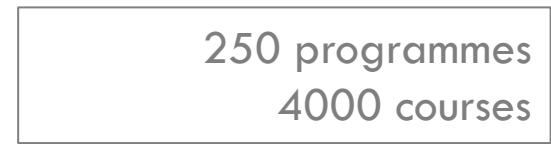


* Degree equivalent programmes except Life Long Learning

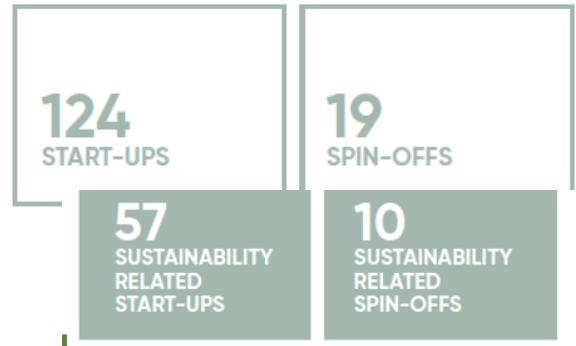
RESEARCH



EDUCATION



VALUE CREATION



WHOLE-INSTITUTION APPROACH

**REDUCE THE NEGATIVE IMPACT
IN THE PLANET**

**INFRASTRUCTURES
AND SERVICES**

TEACHING / TRAINING



**VALUE CREATION AND
SOCIETAL IMPACT**

**RESEARCH &
DEVELOPMENT**

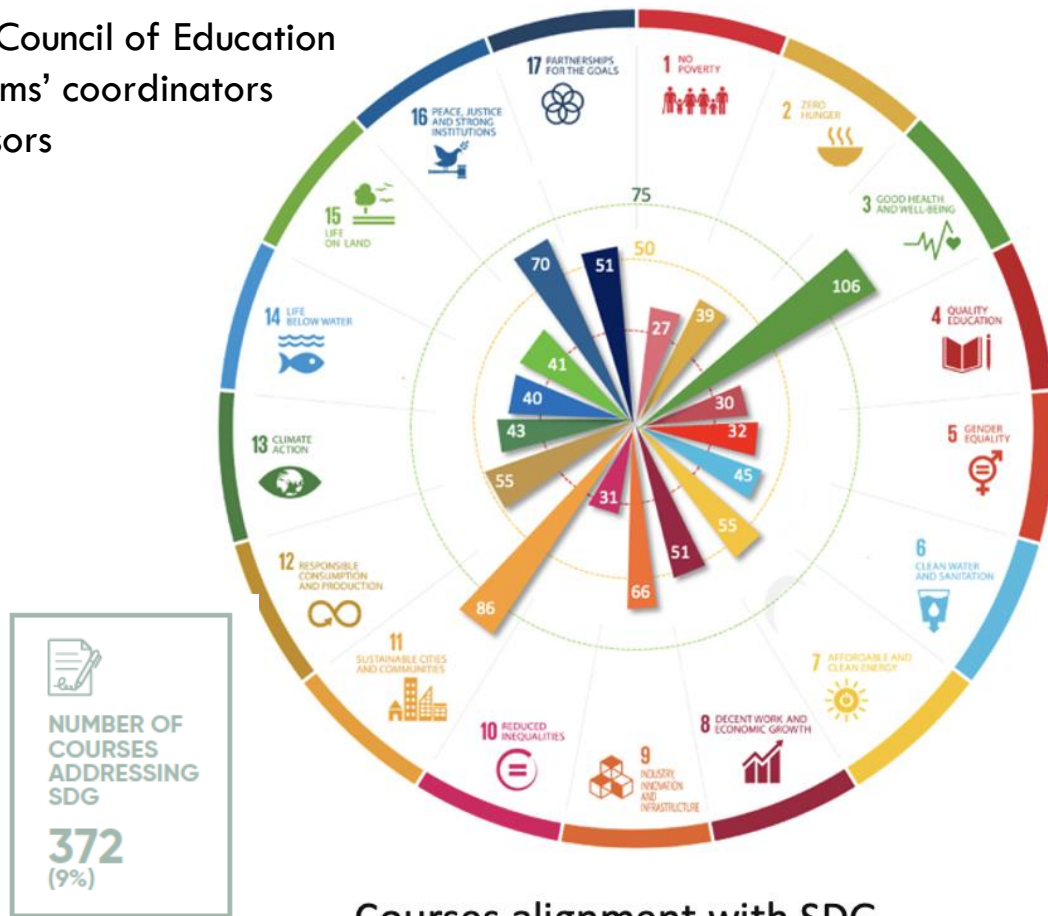
**MAXIMIZE THE POSITIVE IMPACT
IN SUSTAINABILITY**

WHOLE-INSTITUTION APPROACH

Faculty: builders of impact through research and education

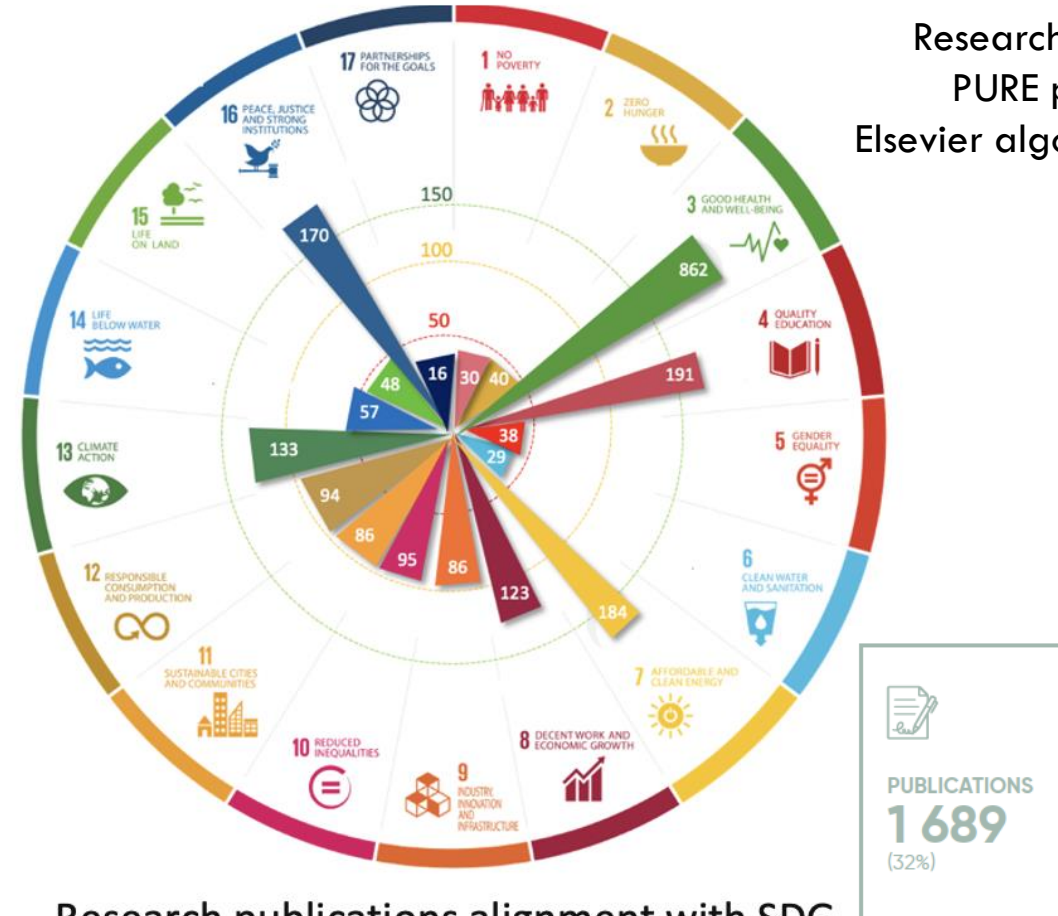
CoDE: Council of Education
Programs' coordinators
Professors

Research Units
PURE portal
Elsevier algorithm



Courses alignment with SDG

Criteria from STARS from Association for the Advancement of Sustainability in Higher Education.



Research publications alignment with SDG

Source: Sustainability at NOVA, facts & figures (2023)

WHOLE-INSTITUTION APPROACH

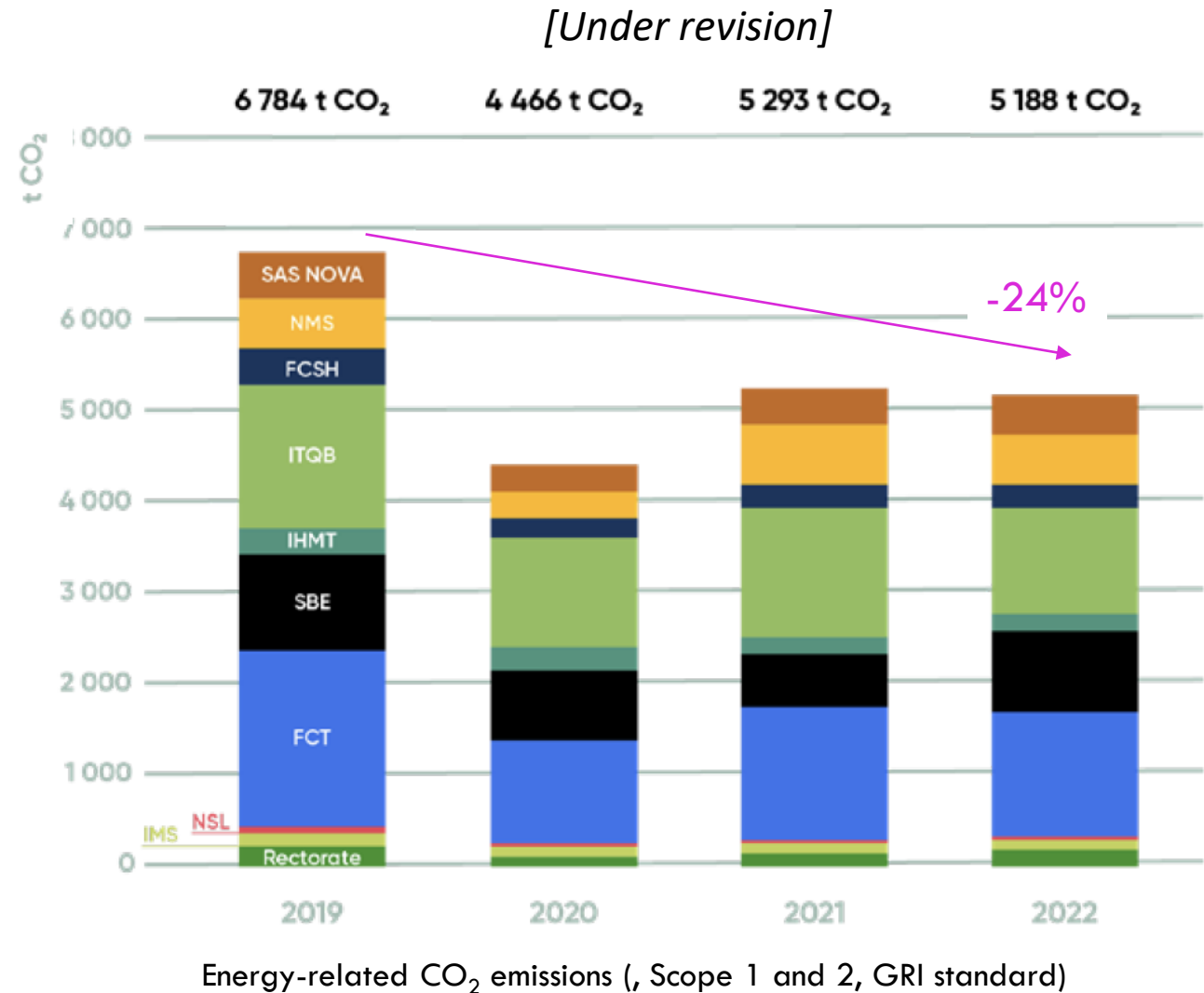
Staff: game changers of operations and processes

2022/2019:

- _10% decrease of electricity consumption (2% from domestic production);
- _19% decrease of gas consumption.
- _11% increase of water consumption (10% from own resources)

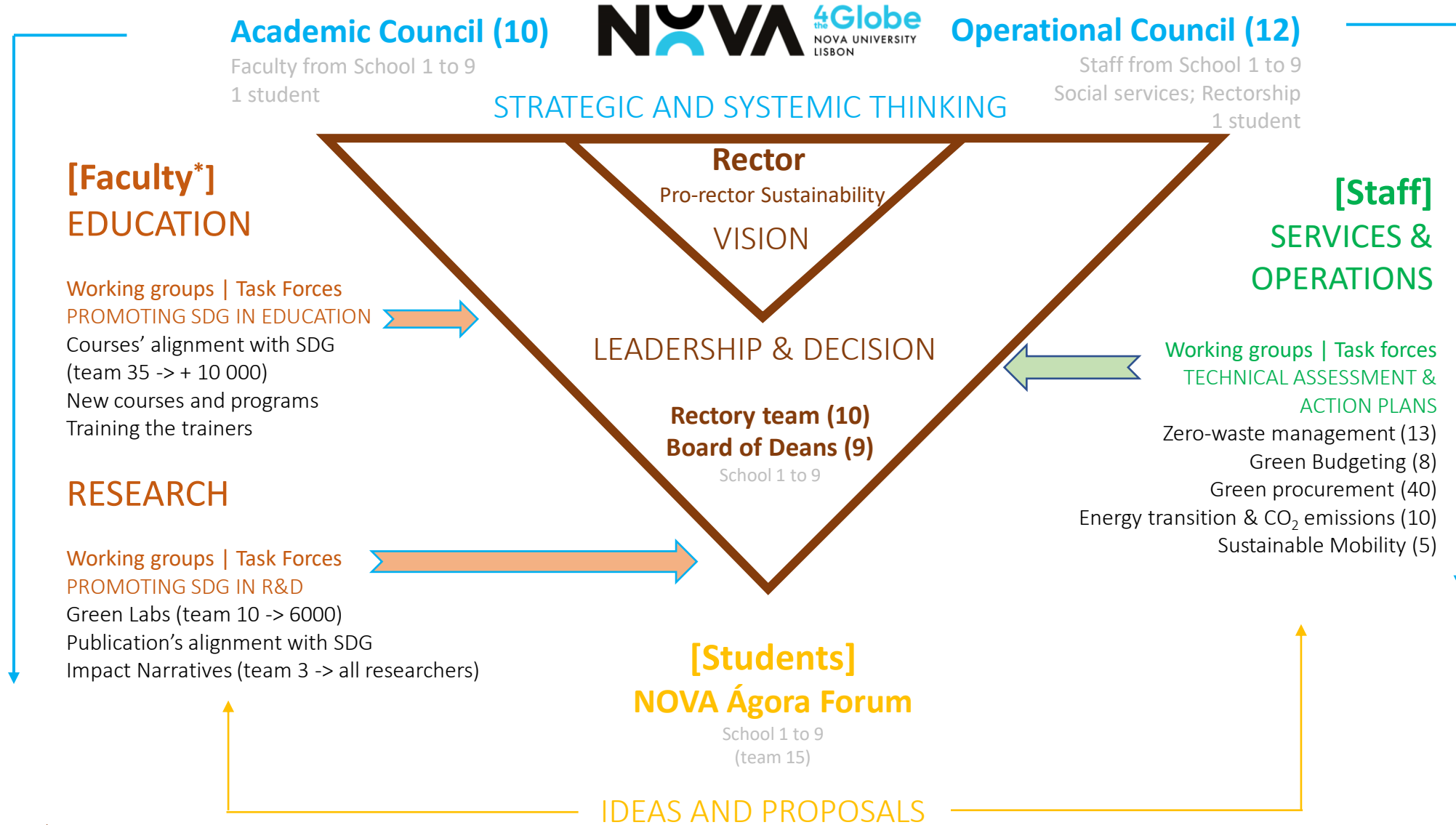
Ongoing initiatives:

- _Action plan towards **NOVA_ZeroWaste**
- _ **NOVA GreenLabs** (LEAF certification, UCL)
- _Green Public procurement
- _Energy Transition (EU Recovery & Resilience Funding)
- _Green budgeting
- _Mobility assessment
- _Inclusion and gender equality



WHOLE-INSTITUTION APPROACH

Governance and Engagement



*Professors & Researchers



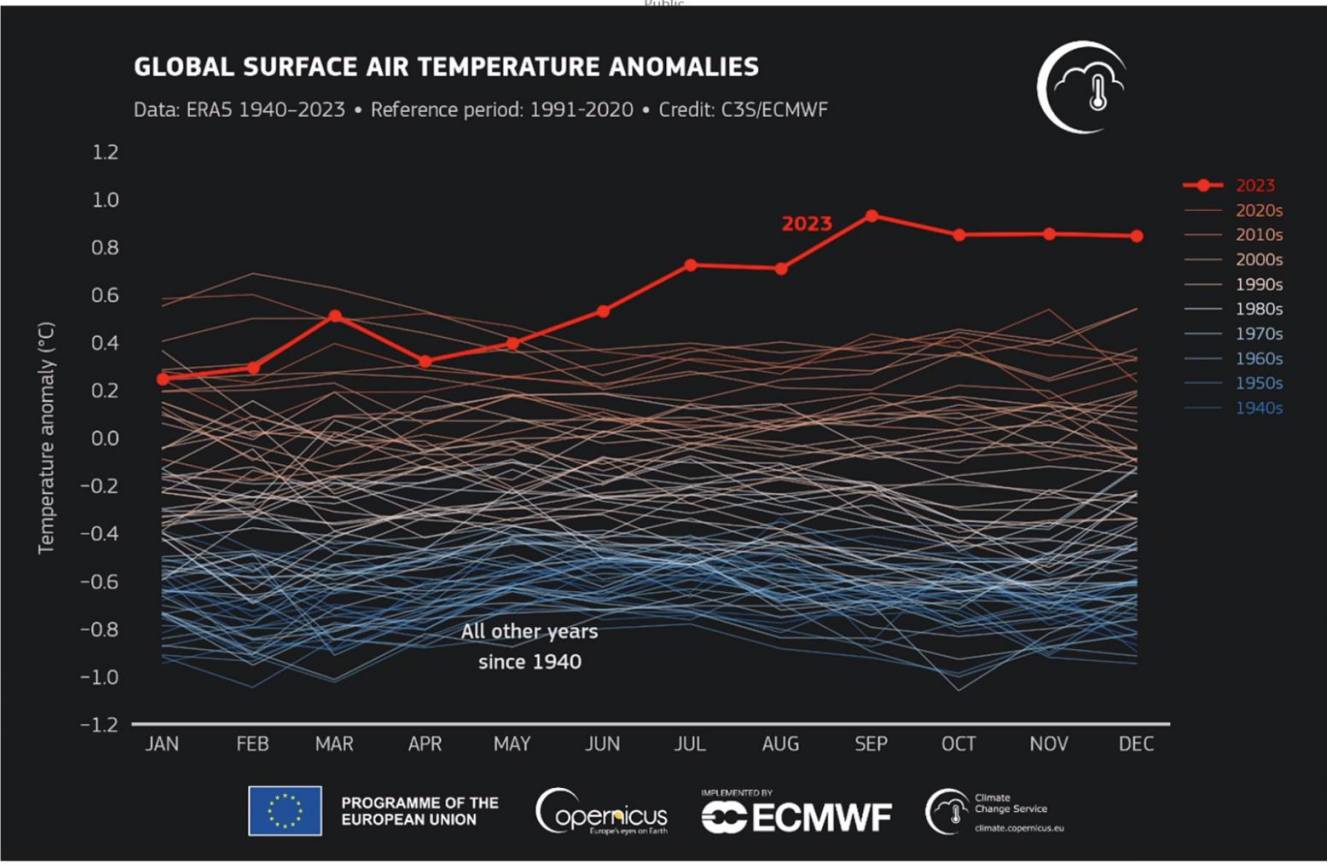
NOVA's ROADMAP TO CARBON NEUTRALITY AND CLIMATE RESILIENCE



Projeto Financiado por

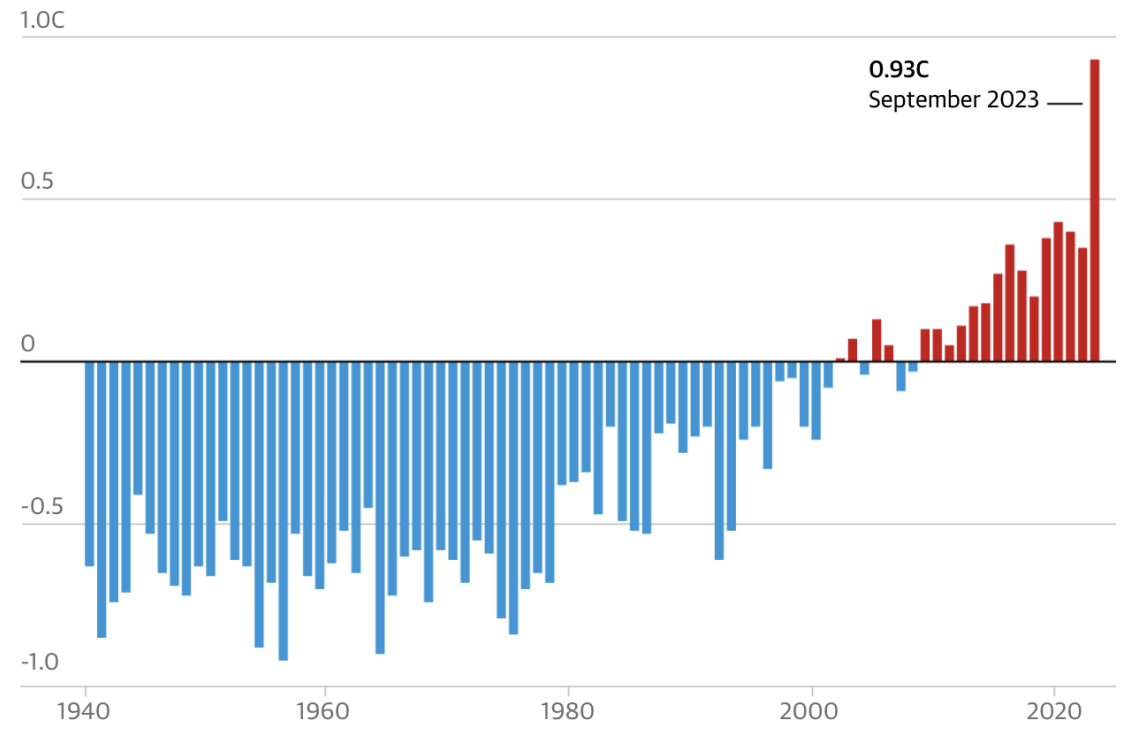


Why



September 2023 was the warmest on record

Global average surface temperature anomalies relative to 1991-2020, each September



Guardian graphic. Source: Copernicus/ERA5

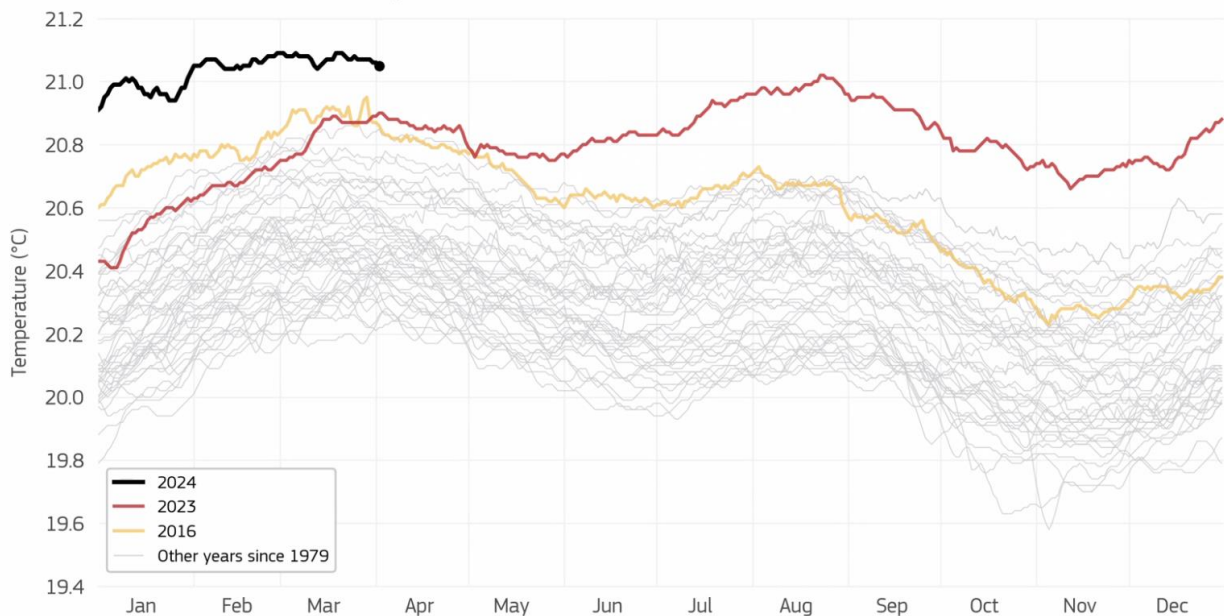
The heat is the result of the continuing high levels of carbon dioxide emissions combined with a rapid flip of the planet's biggest natural climate phenomenon, El Niño.

Why

DAILY SEA SURFACE TEMPERATURE

Extrapolar global ocean (60°S–60°N)

Data: ERA5 1979–2024 • Last data: 02 Apr 2024 • Credit: C3S/ECMWF



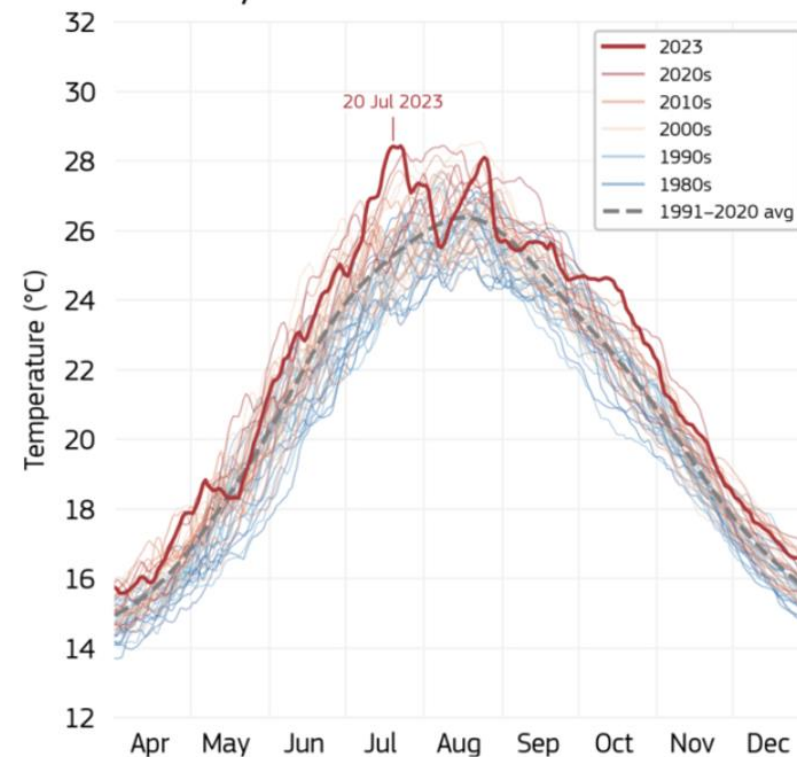
PROGRAMME OF THE EUROPEAN UNION



Marine heatwave in the western Mediterranean Sea in July 2023

Data: ESA SST CCI Analysis v3.0 • Reference period: 1991–2020 • Credit: ESACCI/EOCIS/UKMCAS/C3S/ECMWF

Daily SST in the western Mediterranean Sea

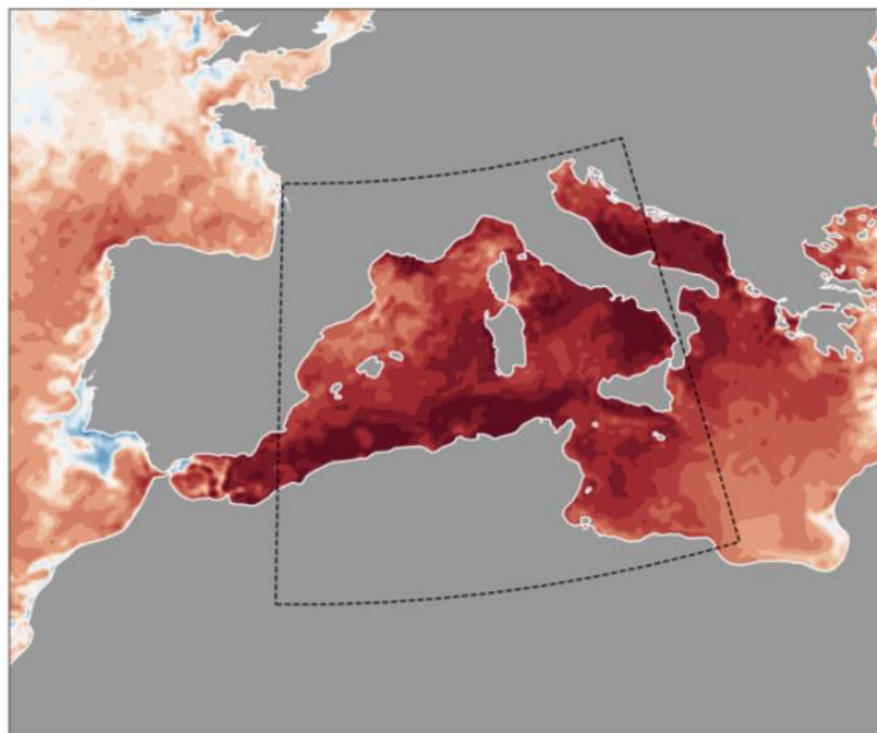


Why

Data type: Reanalysis, in situ
Reference period: 1991–2020
Domain: C3S

It was the second-warmest year on record for Europe

Anomaly in SST on 20 July 2023



Anomaly (°C)

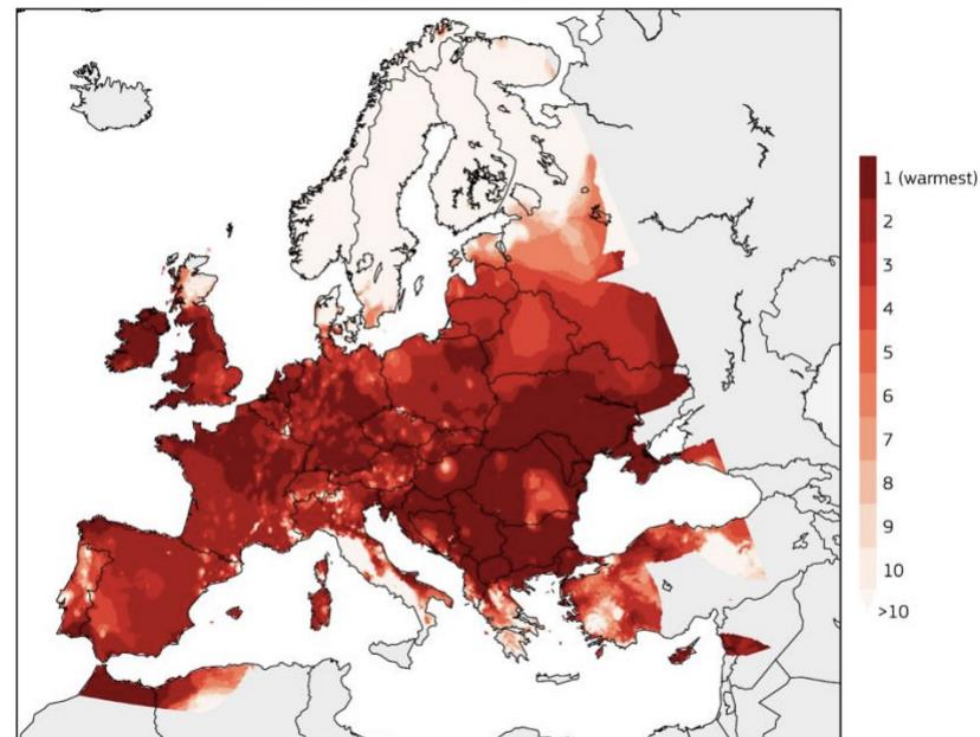


Marine heatwave in the western Mediterranean Sea in July 2023

Data: ESA SST CCI Analysis v3.0 • Reference period: 1991–2020 • Credit: ESACCI/EOCIS/UKMCAS/C3S/ECMWF

Ranking of annual average surface air temperatures in 2023

Data: E-OBS • Credit: KNMI/C3S/ECMWF



Copernicus Climate Change Service
European State of the Climate | 2023

PROGRAMME OF
THE EUROPEAN UNION

Copernicus

ECMWF

NOVA
Sustentabilidade
UNIVERSIDADE NOVA
DE LISBOA

route
zero



Temperature

Global air temperature

+1.3°C Above pre-industrial level

European temperature (over land)

+2.3°C Above pre-industrial level

Arctic temperature (over land)

+3.3°C Above pre-industrial level

Ice and glaciers

Global glaciers

-8200 km³ Ice loss since 1976

European glaciers

-850 km³ Ice loss since 1976

Greenland Ice Sheet

-5470 Gt Ice loss 1972–2022

Arctic sea ice extent

-2.6 Mkm² September loss since the 1980s



Greenhouse gases

Carbon dioxide (CO₂) concentration

419 ppm 2023 average

Carbon dioxide (CO₂) increase

+2.4 ppm per year Since 2010

Methane (CH₄) concentration

1902 ppb 2023 average

Ocean

Global sea level

+10.3 cm Increase since 1993

Global sea surface temperature

+0.6°C Increase since 1980 (60°S–60°N)

Global ocean heat content

+0.22°C Increase since 1993 (upper 2000 m)



What are the role and responsibility of HEIs?

Are HEIs aware of their impact on Climate crisis?

What HEI can and must do?

- How leadership is taking HEI's responsibility?
- Are there adequate knowledge and skills towards climate action?
- How to finance climate transition?
- How to mainstream climate literacy in education programs to avoid BAU futures?
- How to mobilize HEIs communities (staff, students, professor)
- ...

The Purpose

- Strategic, systemic project, transforming its infrastructures, missions and community.
- Commitment to be assumed by NOVA University, contributing to the Portugal's and the world's goal to control the climate crisis.
- Beginning of a decade-long journey to achieve carbon neutrality and resilience to climate change.
- Learning and sharing with other Portuguese Higher Education Institutions.

The Challenge

- Assess the carbon footprint of NOVA 2019–23
- Project NOVA's activity until 2040 and respective emissions
- Evaluate cost-effective greenhouse gas emissions reduction measures
- Assess NOVA's CO₂ sequestration potential
- Identify climate risks and strategies and actions to increase resilience to climate change and extremes
- Assess investments
- Design the trajectory for the future
- Approve policies and goals

The Opportunity

- Future savings and avoided losses
- Decision reference framework for NOVA (e.g. management, teaching and II&D, administration and other services, suppliers)
- Strategic tool for the future (anticipates and monitors future investments and other OU development plans)
- Exemplary (for its thousands of students and for society)

The *making-of*

VISION

AMBITION

STRATEGY

ACTIONS

IMPACT

Information and Monitoring System

Annual monitoring and reporting

Emissions | Climate Risk

Emissions Reduction | Resilience

Goal and Strategic plan

Baseline

Projections

Policies and measures

Path to climate neutrality and resilience



INTERNAL COMMUNICATION

Learning Curve



Students

Teachers

ENGAGEMENT

Researchers

Staff

Directory

The scope

Emissions CO₂e

Infrastructures and services (scopes 1 and 2)

Energy/fuels

Refrigerant gases

Electricity

Value chain (scope 3)

Goods and Services (FSE)

Capital goods (Fixed assets)

Waste

Duty trips

Commuting

Leased/leased assets

Equity holdings

CO₂ retention and sequestration

Green areas

Vulnerability to climate change

Map the sensitivity of NOVA's community and infrastructure to climate extremes (heat waves, floods, sea level rise)

Classrooms, Laboratories, Services
Vulnerable people

Conduct a climate risk assessment

RCP Scenario 4.5 (2041/70;
2071/100)

RCP Scenario 8.5 (2041/70;
2071/100)

Develop contingency and adaptation plans to anticipate and deal with climate risk in

Outputs

Environment & Sustainability information system:

Schools' responsible for yearly updating

NOVA policies:

- Sustainable construction (new buildings and rehabilitation)
- Mobility
- Energy (review)
- Green Spaces and Biodiversity
- Public Procurement

Reference Documents:

Cost-effective options to reduce emissions and promoting CO₂ sequestration

NOVA Climate Change Resilience Plan:

Infrastructure component
social component

➤ NOVA's path towards deep decarbonization by 2040 or earlier with the involvement of its community and based on cost-effective reduction measures aligned with the schools' development plans.

Plan to share with all Portuguese HEIs:

- ▷ **Dedicate web-based resources, including tools**
- ▷ **Technical workshops [3]**
- ▷ **Conferences [4]**
- ▷ **...**



The route to climate neutrality and climate resilience: NOVA assumes its responsibility with the climate change issue and recognises the existence of a climate risk for its activities. NOVA wants to become a lead example in its commitment towards a sustainable development and align with like-minded universities, who are thought leaders in climate action.

The only route is route ZERO.

WHOLE-INSTITUTION APPROACH

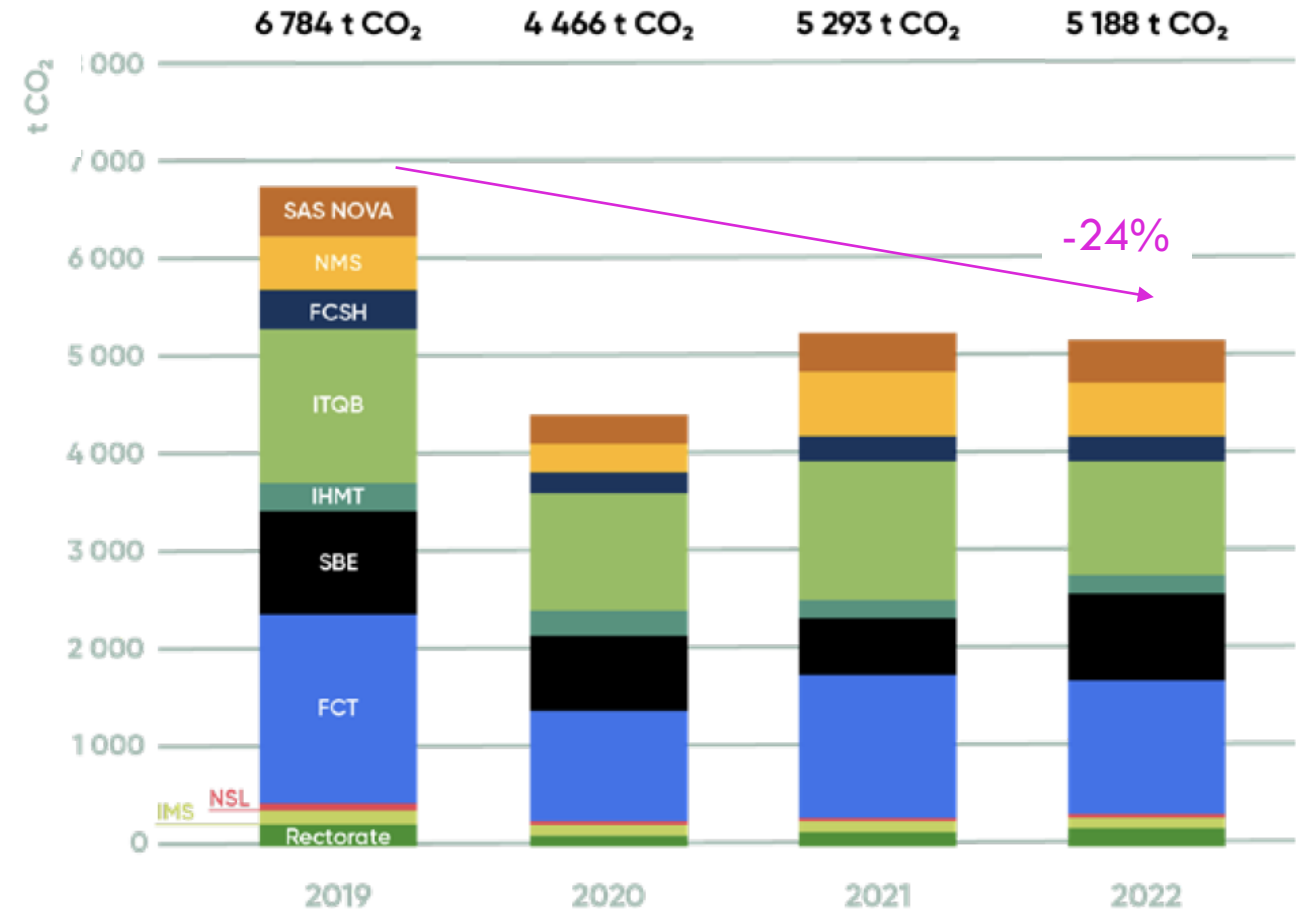
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Energy-related CO₂ emissions (, Scope 1 and 2, GRI standard)