COMMITMENT OF NOVA'S DEVELOPMENT IN ALIGNMENT WITH THE GOAL OF CARBON NEUTRALITY BY 2040

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1. WHY NOVA NET-ZERO?

The latest report from the World Meteorological Organization (WMO, 2025)[1] shows that the global average temperature in 2024 was 1.55°C ± 0.13°C[2] above the 1850–1900 average, a period that represents the conditions before the industrial revolution. The year 2024 was the warmest year recorded by observation of the 175-year period, clearly surpassing the previous warmest year, 2023. Each of the last ten years in the period 2015–2024 have individually been the ten warmest years on record. It also indicates that, in 2024, the heat content of the oceans reached the highest level in the series of observations in the last 65 years, surpassing the previous record in 2023, reconfirming itself as the primary cause of the thermal expansion of the oceans and the rise in the average sea level. These two conditions govern the (un)balance of natural systems (support for food production, water availability, among others) and social systems (public health, damage and economic losses due to climate extremes, such as heat waves, megafires and very fast intense floods).

The State of the Climate in Europe 2024 Report[3] reveals worrying facts. Since the 1980s, Europe has been warming twice as fast as the global average, making it the continent with the fastest warming on Earth. Heatwaves are becoming more frequent and severe, and southern Europe has been facing widespread droughts. Glaciers in all European regions continue to melt. Changes in the precipitation pattern were observed, including an increase in the intensity of the most extreme events. This could lead to increased flooding and likely contributed to some of the most catastrophic events observed in 2024.

This introduction serves to say that, although the issue of climate system change and its already evident impacts is no longer so visible on the public and political agenda (mainly due to pressing geopolitical issues), in practical terms it continues to worsen. The *World Economic Forum*[4]'s annual report on global risks, published annually for the Davos summit, continues to reveal that world leaders (i.e. politicians, CEOs of multinationals) place extreme weather/weather events at the top of their fears both in the short (2 years) and in the medium term (10 years). Attentive organizations continue to invest in the climate transition as a strategy to prevent damage, whether economic, physical, compliance and reputational.

Universities have a key role to play in the necessary transformation towards a net-zero emissions economy, either because of the R&D they develop in all scientific domains, or because of the unique position of trust they have in the community and, by setting an example, they can amplify the change needed for a safe climate. Therefore, many universities on all continents have adopted ambitious carbon neutrality goals, and their investment plans and strategies.

NOVA University must follow this movement of its counterparts, first of all as a strategy for the prevention of loss and damage, namely the potential risk of regulation, as a strategy with a positive net economic impact when considering the complete investment cycle. No less important, for moral reasons of safeguarding the Planet for future generations, after all its audience.

[1] https://library.wmo.int/viewer/69455/download?file=WMO-1368-2024_en.pdf&type=pdf&navigator=1

[2] As a curiosity, a single year with an annual global average temperature of more than 1.5°C above the 1850-1900 average does not indicate that we have exceeded the goal of the Paris Agreement. According to the IPCC, for this purpose, the threshold of 1.5 °C of warming will be confirmed when the observed temperature reaches or exceeds this value over a period of 20 years, 10 years after the year of exceedance. In other words, there will be (would be) a 10-year delay in recognizing that the long-term temperature goal has been exceeded.

[3] https://climate.copernicus.eu/esotc/2024

[4] https://www.weforum.org/publications/global-risks-report-2025/in-full/

2. WHAT DOES NOVA NET-ZERO MEAN?

NOVA University has been embarking on an exceptional path of development, expansion and renovation of its campuses, and is therefore at the ideal time to decide on options that will have an impact on the next 50 years at least.

In the last two years, and with co-financing from the Environmental Fund, several teams from the various OU, Rectory and SAS, have developed a wide range of tasks that have led to three main outputs:

a) The InNOVA information system that allows the annual calculation of greenhouse gas emissions of scopes 1, 2 and 3, according to the international standard (GHG Protocol);
b) The baseline scenario up to 2040 that translates, in an organised and coherent way, the ongoing and planned interventions (i.e. com secured funding) and what is their impact in terms of emissions;
c) A set of additional measures that allow NOVA to get very significantly closer to the zero-emissions goal in 2040.

The good practices adopted for NOVA, from the *Science-Based Target* (SBTi) initiative[5], consider short-term (2030) and long-term (2040) emission reduction objectives, always taking into account the feasibility - technical and economic - of the measures to be adopted, the opportunity for their financing and their monitoring. Thus, and taking into account the data collected in the meantime (summary in Annex, from all presentations made in previous meetings of the College of Directors), and the consultation with multiple people in the various Campi with responsibility for development projects, NOVA University should adopt the goals as in the following table.

According to the good practices of the SBTi, NOVA does not need to guarantee the net-zero goal in 2040, but rather privileges the conditions to achieve the short-term goals, that is, by 2030. This year, preferably 1-2 years before, it should review its emissions trajectory (InNOVA produces data annually) and assess what should be done for 2035 and so on until 2040 (or if necessary extend until 2045, the year in which carbon neutrality for Portugal has already been assumed politically).

<table>
<tr><th></th><th>Short-term goals 2030</th><th>Long-term goals 2040</th></tr>
<tr><td>Scope 1 emissions</td><td>Border: all activities under NOVA's direct control

Target: 40% reduction in NOVA's emissions estimated for 2023</td><td>Border: all activities under NOVA's direct control

Target: 95% reduction in NOVA's emissions estimated for 2023</td></tr>
<tr><td>Scope 2 emissions</td><td>Frontier: all electricity purchased from the electricity grid

Target: Zero emissions</td><td>Frontier: all electricity purchased from the electricity grid

Target: Zero emissions</td></tr>
<tr><td>Scope 3 emissions</td><td colspan="2">Frontier: Supply chain activities that represent sources of material emissions, and over which it has operational control (e.g. travel), and has relevant influence capacity (e.g. public procurement criteria). In the case of NOVA, they include activities from the following categories (% of total A3 emissions in 2023):
C1. Goods and services (32%)
C2. Capital goods (15%)
C6. Staff missions (air travel) (9%)
C7. Student commuting and international mobility (31%)

Goal: Proactive approach to defining actions with an impact on reducing emissions.</td></tr>
<tr><td></td><td colspan="2">>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>Trajetória NOVA net-zero</td></tr>
</table>

Source: adapted from STBi (2025)

[5] https://sciencebasedtargets.org/

3. HOW AND WHEN DO YOU EVOLVE TOWARDS THE NOVA NET-ZERO GOAL?

Short-term (2030)

According to the data collected (see Annex), and taking into account the short-term goals (2030), we can systematize the following:

a) Scope 1 emissions target: even in the reference scenario, i.e. with the considerations obtained from the various stakeholders in the ongoing construction and rehabilitation projects, NOVA achieves an emissions reduction of 59% in 2030 compared to 2023 and, therefore, aligned with the target.
b) Target for scope 2 emissions: in the reference scenario, the expected reduction for emissions resulting from electricity purchased from the grid by NOVA is 83% compared to 2023, and with additional measures the expected reduction is 87%. In this case, the goal recommended by the SBTi, which is zero-emissions, is not achieved. It should be noted that NOVA SBE and NOVA IMS will be the OU with zero-emission electricity.
c) Scope 3 emissions target: In the absence of concrete reduction targets, attention should be paid to specific and relevant actions that have an impact on reducing emissions.

Thus, an analysis dedicated to the issue of electricity purchased from the grid through the constitution of a *task force,* constituted with representatives of several OUs and the Rectory, with the following objectives:

i) detail the potential of the various campuses for projects of own electricity production, solar PV recognized as cost-effective (i.e. com average payback of 4 years), as well as the technical-economic potential of solutions that include storage;
ii) explore financing models (e.g. crowdlending with alumini, others in the market) of solar PV projects with proven economic advantages for NOVA;
iii) evaluate models for the purchase of electricity from the grid, alternative to the current one, with greater economic benefits for NOVA;
iv) explore, as part of green public procurement processes (ECO 360 government strategy, in force since November 2024), the inclusion of a criterion on zero-emission electricity;
v) evaluate, within the framework of public procurement and its status as a Foundation, the feasibility of establishing multi-annual partnerships with electricity suppliers that are available to supply zero-emission electricity, with a positive economic impact for NOVA.

It is also recommended to continue the ongoing initiatives on the activities arising from NOVA's suppliers (scope 3 emissions), namely:

i) C1 and C2. Acquisition of goods and services, and capital goods. Publication by December 2025 and consequent adoption by the OU of the ecological purchasing criteria to be included in the procurement processes of the following items: Food - foodstuffs to be prepared and concession of canteens; Computer equipment; HVAC, heating and cooling equipment; Cleaning products and services (cleaning products and utensils, and disposables); Furniture for homes and offices.
ii) C6. Staff missions, with a focus on air travel. Benchmarking analysis of other universities on options and policies for mission, taking into account the particular conditions of Portugal's location in the European space. Adoption of an in-service mobility policy.
iii) C7. Commuting of students and staff. Invest in quality information to characterize the commuter mobility pattern, and explore the opportunity for solutions with relevant operators in the axes of greatest demand. Identify options that prove to be cost-effective for NOVA, including the well-being of its students and staff.

Additionally, and knowing the multiple initiatives of the OU in terms of sustainability, many of which have a direct impact on the reduction of emissions (e.g. certification of *wet labs*; sustainable events; water efficiency), close monitoring should be done to be able to scale to the whole of NOVA, whenever appropriate.

Long-term (2040)

As recommended by the SBTi, the effort should be focused on actions and initiatives to achieve the goals in the short term. Thus, it is recommended to review the Roadmap in 2028/29, with a view to assessing the impact of the actions recommended here, and envisioning the evolution to 2035.

CONCLUSION

NOVA University Lisbon recognizes its responsibility and its fundamental role in mitigating climate change in the fields of R&D, teaching and internal practices on its campuses.

NOVA University Lisbon adopts the reference framework aligned with the long-term carbon neutrality objective, 2040, for the strategic orientation of its development projects.

NOVA University Lisbon supports the necessary actions to be carried out, as presented in point 3. (and others that each of the OU may adopt) in the short term, 2030.

NOVA University Lisbon recognizes that the trajectory towards the goal of carbon neutrality and adaptation and resilience to climate change must be guided by economic rationality, the involvement of the entire community and transparent and adequate communication, for the sake of its national and international reputation.

Approved by the College of Deans on 17 July 2025