



SDG7 Energy Compact of Portugal

A next Decade Action Agenda to advance SDG7 on sustainable energy for all, in line with the goals of the Paris Agreement on Climate Change

SECTION 1: AMBITION

1.1. Ambitions to achieve SDG7 by 2030. [Please select all that apply, and make sure to state the baseline of each target]

(Member States targets could be based on their NDCs, energy policies, national five-year plans etc. targets for companies/organizations could be based on their corporate strategy)

<p><input checked="" type="checkbox"/> 7.1. By 2030, ensure universal access to affordable, reliable and modern energy services.</p>	<p>Target(s): Ensure universal access to affordable, reliable and modern energy services. Electric energy services currently cover 99.9% of the country.</p> <p>Time frame: 2030</p> <p>Context for the ambition(s): Portugal is already guaranteeing the universal access to reliable and modern energy services, according to the most recent energy Strategies, such as the National Energy and Climate Plan, published by Cabinet Resolution No. 53/2020, 10th July. Additional information can also be consulted in the recent assessment to the national energy policies conducted by IEA. See In-Depth Review Report (IDR) 2020/2021 for Portugal at https://www.iea.org/reports/Portugal-2021. Regarding affordability, a Social Tariff for Energy Services (gas and electricity) is in place, regulated by Decree Law 138-A/2010 (electricity) and Decree Law 101/2011 (natural gas), both in its current wording. A National Strategy on Energy Poverty, that will strongly contribute to improve affordability of energy services is currently in the final stage of preparation, after a public consultation between 15/04/2021 and 17/05/2021.</p>
<p><input checked="" type="checkbox"/> 7.2. By 2030, increase substantially the share of renewable energy in the global energy mix.</p>	<p>Target(s):</p> <p><u>RES:</u> *47% RES in gross energy consumption; (2020 target: 31%; in 2019 the share was 30,6%) *80% RES in electricity sector; (planned baseline 2020: 59.6%; in 2019 the share was 53.77%) *20% RES in transport sector; (2020 target: 10%; in 2019, the share is 9.09%) * 49% RES in heating and cooling sector; (planned baseline 2020: 34.5%.; in 2019 the share was 41.62%)</p> <p><u>Green Hydrogen:</u> ** Centralized production capacity (GW): 1 -1,5; Decentralized (GW): 0,5 - 1 (Baseline 2020: 0 %) ** Blended in the gas grid (%); 10 - 15 (Baseline 2020: 0 %) ** In power production (%): 5 -15; (Baseline 2020: 0 %) ** In road transportation (%): 1 - 5; (Baseline 2020: 0 %) **In industry (%): 2 - 5; (Baseline 2020: 0 %)</p> <p>Time frame: 2030</p> <p>Context for the ambition(s):</p>

	<p>The 2030 RES targets are defined in the Portuguese National Energy and Climate Plan 2021-2030 (NECP 2030), submitted to the European Commission by the end of 2019, in accordance with the Regulation on the governance of the Energy Union and Climate Action (Regulation EU 2018/1999, agreed as part of the Clean Energy for All Citizens Package, adopted in 2019). The NECP was approved and published by Cabinet Resolution 53/2020, 10th July (see at: https://dre.pt/application/file/a/137619487)</p> <p>The Green Hydrogen targets are defined in the National Hydrogen Strategy (EN-H2) that was approved by the Council of Ministers on May 2020, and published in Cabinet Resolution 63/2020, of 14 August 2020 and which can be consulted here: https://www.portugal.gov.pt/download_ficheiros/ficheiro.aspx?v=%3d%3dBQAAAB%2bLCAAAAAAABAAzNDC2MAAAFEKjvQUAAAA%3d</p>
<p><input checked="" type="checkbox"/> 7.3. By 2030, double the global rate of improvement in energy efficiency.</p>	<p>Target(s): 35% reduction on primary energy consumption (baseline 2020: In 2020, the target was a 25% reduction on primary energy consumption, but a final statistic is not yet available. In 2019, 24.5% of reduction on primary energy consumption was achieved.)</p> <p>Time frame: 2030</p> <p>Context for the ambition(s): Energy Efficiency target is defined in the Portuguese National Energy and Climate Plan 2021-2030 (NECP 2030), submitted to the European Commission by the end of 2019, in accordance with the Regulation on the governance of the Energy Union and Climate Action (Regulation EU 2018/1999, agreed as part of the Clean Energy for All Citizens Package, adopted in 2019). The NECP was approved and published by Cabinet Resolution 53/2020, 10th July (see at: https://dre.pt/application/file/a/137619487)</p>
<p><input checked="" type="checkbox"/> 7.a. By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.</p>	<p>Target(s): An additional 20 million euros dedicated to international cooperation to fight climate change (mitigation and adaptation) (baseline 2020: 2.5 million euros dedicated to international cooperation to fight climate change)</p> <p>Time frame: 2021-2030</p> <p>Context for the ambition(s): On an annual basis since 2017 Portugal is allocating an amount to the international cooperation on climate change through its National Environmental Fund. In 2020, Prime Minister António Costa announced during the Climate Ambition Summit, which was co-convened in December 2020 by the UN SG, France and the UK, the commitment to provide additional 20 million euros to be allocated to this purpose between 2021 and 2030. In 2021 a total of 1.5 million euros is already allocated to this end.</p>
<p><input checked="" type="checkbox"/> 7.b. By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programs of support.</p>	<p>Target(s): International cooperation within energy and grid infrastructures (baseline 2020: 2.5 million euros dedicated to international cooperation to fight climate change)</p> <p>Time frame: 2021 - 2030</p> <p>Context for the ambition(s): In the context of the support attributed by the Environmental Fund to international cooperation on climate change, one of the goals is to support the expansion of energy infrastructures and upgrade technology in the Portuguese Speaking Countries and other International Partners. Apart from the financial support, Portugal has also a long tradition of capacity building and exchange of knowledge with traditional partners such as Portuguese Speaking Countries, North Mediterranean Countries or Latin America Countries in the field of Energy.</p>

1.2. Other ambitions in support of SDG7 by 2030 and net-zero emissions by 2050. [Please describe below e.g., coal phase out or reforming fossil fuel subsidies etc.]

Target(s): Achieving net zero

Time frame: by 2050

Context for the ambition(s): Portugal was a pioneering country in committing to carbon neutrality by 2050. The commitment was taken in 2016, at the Marrakech UNFCCC COP, outlining a clear vision for an intense decarbonization of the national economy, as a contribution to the Paris Agreement and in line with the most ambitious efforts under way at an international level. This commitment is aligned with the vision of our Long-Term Strategy for Carbon Neutrality that sets the path to carbon neutrality in a sustained manner, establishes the main guidelines and identifies

cost-effective options to achieve this end in different socio-economic development scenarios. Accomplishing carbon neutrality in Portugal implies reducing greenhouse gas emissions by more than 85%, compared to 2005. Portugal's Carbon Neutrality Roadmap was published and approved by Cabinet Resolution No 107/2019, 1st July and submitted to the UN (see at <https://dre.pt/aplicacao/file/a/122760092>) as National Long-Term Strategy for Carbon Neutrality, according with the already referred Regulation EU 2018/1999 (consult it here: https://unfccc.int/sites/default/files/resource/RNC2050_EN_PT%20Long%20Term%20Strategy.pdf)

Target(s): GHG Emissions Reduction of **55% in 2030**, 65%-70% in 2040 and 85%-90% in 2050 compared to 2005 (2020: 32% GHG reduction compared to 2005*) *According to the proxy estimates of July 2021, the total GHG emissions (without LULUCF) for the year 2020 are estimated as 58.2 Mt CO₂e., representing a reduction of 32% compared to 2005. These estimates refer to provisional data and a simplified methodology, with national emissions for 2020 being calculated and reported to international bodies in 2022, based on official data and in accordance with agreed methodologies.

Time frame: 2030, 2040, 2050

Context for the ambition(s): Portuguese Long-Term Strategy for Carbon Neutrality concludes that carbon neutrality by 2050 is achievable, based on a trajectory of emissions reductions of -45% to -55% by 2030, -65% to -75% by 2040 and -85% to -90% by 2050, assuming a carbon sink value of between -9 and -13 Mt CO₂.

Target(s): Phasing-out of coal-powered power plants (Baseline: GHG reduction compared to 2005*)

*According to the proxy estimates of July 2021, the GHG emissions for the year 2020 for the 2 coal-powered power plants are as follows:

Sines: 1 785 kton CO₂ eq, representing a reduction of 79.2% compared to 2005.

Pego: 337 kton CO₂ eq, representing a reduction of 91.9% compared to 2005.

These estimates refer to provisional data and a simplified methodology, with national emissions for 2020 being calculated and reported to international bodies in 2022, based on official data and in accordance with agreed methodologies. Sines has closed operations in January 2021 and Pego will phase-out electricity production on November 2021. Time frame: 2021

Context for the ambition(s): Sines power plant (1256 MW; 900 g CO₂/ kWh) stopped activity in 2021 (1st Sem); The last remaining coal-powered power plant in Portugal, Tejo Energia – Pego power plant (330 MW) will stop activity in 2021 (2nd Sem).

Target(s): Decarbonizing the National Gas Grid by the gradual blending of NG with renewable gases: 1-5% (2025), and 10-15% (2030) (Baseline 2020:

0%) Time frame: 2021 - 2030

Context for the ambition(s): The gradual blending of the National Gas Grid with renewable gases, incl. hydrogen, are expected within the EN-H2 (National Hydrogen Strategy)

SECTION 2: ACTIONS TO ACHIEVE THE AMBITION

2.1. Please add at least one key action for each of the elaborated ambition(s) from section 1. *[Please add rows as needed]*.

<p><i>On 7.1 - The following key actions are being developed:</i></p> <ul style="list-style-type: none"> - A Social Tariff for electricity is in place since 2010 and a Social Tariff for Natural Gas since 2011. Portugal will continue update these mechanisms as support schemes for low incomes families; - Development of the National Strategy on Energy Poverty; 	<p><i>Start and end date</i></p> <ul style="list-style-type: none"> - Start (2010) till 2030 - Start (2021) till 2050
<p><i>On 7.2 – The following key actions are being developed:</i></p> <ul style="list-style-type: none"> - Promotion of onshore RES capacity (higher increase in solar PV) and guarantees of origin (including RECs and auto-consumption); - Promotion of electric mobility; - Promotion of offshore Wind and Floating solar PV: <ul style="list-style-type: none"> a) Offshore wind and grid infrastructure developments b) Offshore Hydrogen-Wind farms, together with offshore energy and grid infrastructure c) Floating Solar PV in water bodies; - Promotion of Hydrogen Economy <ul style="list-style-type: none"> a) Development of new Technology's (eg.: Modular photo-electrolysis for hydrogen production - Fusion Fuel) b) Promotion of green Hydrogen production (via centralized and distributed models); c) Design support calls with a focus on new technology development d) Promote innovative power-to-H2 value chains to demonstrate the 'energy-island' concept in RECs - Production capacity for green Hydrogen and other renewable gases <ul style="list-style-type: none"> a) EU Important Projects of Common European Interest – IPCEI National Call for Expression of Interest (37 proposals selected; Estimate of 9 billion Euros of investment) b) Calls PRR C14 (2021-2025): 185 million euros of public investment (88 MW in 2023; 176 MW in 2024; 264 MW in 2025) c) Call POSEUR 2021 (projects under evaluation): 195 557 MWh H2+CH4 annual production; ca 90 million euros of total investment - Promoting decarbonization in the National Gas Grid: Blending with renewable gases, incl green hydrogen, - Promoting decarbonization in Industry and transport 	<p><i>Start and end date</i></p> <p><i>Vide outcomes section</i></p>

<p><i>On 7.3 - The following key actions are being developed:</i></p> <p>a) The SGCIE (energy management system for energy-intensive consumers) was created by Decree-Law 71/2008 to promote energy efficiency and the monitoring energy consumption in energy-intensive installations consuming more than 500 toe per year. The SGCIE is under review for the 2030 period.</p> <p>b) Launch the long-term strategy for building renovation that was approved by the Council Minister Resolution nº 8-A/2021 on February 2020 and which can be consulted here: 156397180 (dre.pt)</p> <p>c) Launch of the 2nd national call for sustainable buildings, supported by the national Environmental Fund, that will allocate 30 million euros to the improvement of residential buildings efficiency in 2021 (https://www.fundoambiental.pt/apoios-prr/paes-2021.aspx). Further 580 million euros will be allocated to the improvement of buildings efficiency in between 2021 and 2025, including the initiative “Efficiency Voucher” that will support efficiency measures in building for low-income families (100.000 vouchers until 2025)</p> <p>d) Development of the National Strategy for Energy Poverty 2021-2050 – After a public consultation between 15/04/2021 and 17/05/2021 the Strategy is in the final stage of development. (https://participa.pt/pt/consulta/estrategia-nacional-de-longo-prazo-para-o-combate-a-pobreza-energetica-2021-2050) that it will also include concrete actions on energy efficiency.</p>	<p><i>Start and end date</i></p> <p>a) 2008 b) 2020 c) The 2nd call for sustainable buildings was open in June and is open till December 2021; d) Efficiency Vouchers was an initiative launched in August 2021 e) The National Strategy for Energy Poverty is for 2021-2050;</p>
<p><i>On 7.a – The following key actions are being developed:</i></p>	<p><i>Start and end date</i></p>

<p>a) To support international cooperation: Development of projects namely with countries having Portuguese as official language, dedicated to: climate action, and to the energy sector in the framework of the Environmental Fund.</p> <p>b) Capacity building and exchange of best practices with traditional cooperation partners, such as Portuguese Speaking Countries, North Mediterranean Countries and Latin-America countries.</p>	<p>2021-2030</p>
<p><i>On 7.b – The following key actions are being developed:</i></p> <p>a) To support international cooperation: Development of projects namely with Portuguese Speaking Countries dedicated to: climate action, and to the energy sector in the framework of the Environmental Fund.</p> <p>b) Capacity building and exchange of best practices with traditional cooperation partners, such as Portuguese Speaking Countries, North Mediterranean Countries and Latin-American countries.</p>	<p>2021-2030</p>

SECTION 3: OUTCOMES

3.1. Please add at least one measurable and time-based outcome for **each** of the actions from section 2. *[Please add rows as needed].*

Outcome	Date
<p><i>Outcomes for Actions on 7.1:</i></p> <p>a) Social Tariff: b) National Strategy for Energy Poverty:</p>	
<p><i>Outcomes for Actions on 7.2:</i></p> <p>1. Promotion of RES capacity - In 2019 and 2020, 2 Solar PV auctions launched; Offshore RES: At sea - at least 25 MW, 2021; On Water bodies: an auction on floating Solar PV in water bodies is being designed during 2021 for 100 MW; 2. Auctions for guarantees of origin (GOs): Auctions on GOs will be launched addressing RES-based electricity when supported by public investments (DL 141/2010, 31 December; DL 60/2020, 17 August; DGEG Dispatch 6560-B/2021, 5 July) 3. Promoting the Hydrogen Economy: scaling up of hydrogen production capacity (Recovery and Resilience Program C14): 88 MW in 2023; 176 MW in 2024; 264 MW in 2025; Auction to be launched on green hydrogen consumption for 2 End-use sectors: Industry, and Transportation; 4. Design of an auction model to support hydrogen consumers.</p>	
<p><i>Outcomes for Actions on 7.3:</i></p> <p>1. Decree-law No. 71/2008 set targets for energy-intensive installations: a. >500 tep annual consumption: 4% reduction of primary energy b. >1000 tep annual consumption: 6% reduction of primary energy 2. Primary energy savings through building renovation of 11% in 2030, 27% in 2040 and 34% in 2050 and reduction of the number of hours of thermal discomfort in residential buildings of 26% in 2030, 34% in 2040 and 56% in 2050 3. 30 million euros to the improvement of buildings efficiency in 2021 4. Launch of the initiative “Efficiency Voucher” that will support efficiency measures in buildings for low-income families. The goal for 2025 is to attribute 100.000 vouchers. In 2021, 20.000 vouchers will be attributed.</p>	
<p><i>Outcomes for Actions on 7.a</i></p> <p>1. Portugal will provide an additional 20 million euros for climate finance between 2021 and 2030</p>	
<p><i>Outcomes for Actions on 7.b</i></p> <p>1. Portugal will provide an additional 20 million euros for climate finance between 2021 and 2030</p>	

SECTION 4: REQUIRED RESOURCES AND SUPPORT

4.1. Please specify required finance and investments for each of the actions in section 2.

7.2 - Promoting the scaling up of green H2 production capacity (Recovery and Resilience Program C14): 185 million euros of support

7.a and 7.b – Portugal will provide an additional 20 million euros for climate finance between 2021 and 2030

Other Ambitions:

Regarding the phasing-out of coal-powered power plants referred to in section 1, these processes will be supported by the EU’s Just Transition Mechanism from EU, which focuses on those regions and sectors that are most affected by the transition given their dependence on fossil fuels, including coal, peat and oil shale or greenhouse gas-intensive industrial processes. To assist this process, Portugal will develop a Territorial Just Transition Plan (TJTP) to provide an outline of the transition process until 2030, which will be consistent with the National Energy and Climate Plan 2030 and the transition to a climate-neutral economy and will identify the most impacted territories that should be supported (among other regions, the inclusion of the territories of the aforementioned coal powered plants is foreseen). For each of these territories, the TJTP plan will set out the social, economic and environmental challenges and specify the needs for economic diversification, reskilling and environmental rehabilitation.

4.2. [For countries only] In case support is required for the actions in section 2, please select from below and describe the required support and specify for which action.

[Examples of support for Member States could include: Access to low-cost affordable debt through strategic de-risking instruments, capacity building in data collection; development of integrated energy plans and energy transition pathways; technical assistance, etc.]

<input type="checkbox"/> Financing	Description
<input type="checkbox"/> In-Kind contribution	Description
<input type="checkbox"/> Technical Support	Description
<input type="checkbox"/> Other/Please specify	Description

SECTION 5: IMPACT

5.1. Countries planned for implementation including number of people potentially impacted.

The majority of the above referred actions will be implemented in Portugal, with benefits for much of the population, which is currently around 10 million people. A concrete project like the one on the efficiency voucher is estimated to benefit 100.000 Portuguese families by 2025. At the international level, other countries have also benefited from the financial support of the Environmental Fund for international cooperation, namely Portuguese Speaking Countries such as Mozambique, Cabo Verde, Guinea Bissau, Timor-Leste and Sao Tome and Principe, but also Tunisia, Colombia and Argentina.

5.2. Alignment with the 2030 Agenda for Sustainable Development – Please describe how **each** of the actions from section 2 impact advancing the SDGs by 2030.

[up to 500 words, please upload supporting strategy documents as needed]

All the actions identified in Section 2 are aligned with SDG7. Additionally, the development of these actions will have a direct positive impact in other SDGs, such as SDG 13, climate action, due to their contribution to GHG reduction, but also SDGs 1,2, 10 and 17 if we look into the international cooperation actions; SDG 8, 9, 11, 12 if we look into the economic benefits of the energy transition, renewables and efficiency. In an indirect way, these actions will also contribute to SDGs 6, 14 and 15 due to the environmental benefits coming from the use of renewable sources of energy instead of fossil-based fuels. Broadly, these actions will impact with all the three dimensions of the Agenda 2030 and will strongly contribute to its achievement.

5.3. Alignment with Paris Agreement and net-zero by 2050 - Please describe how **each** of the actions from section 2 align with the Paris Agreement and national NDCs (if applicable) and support the net-zero emissions by 2050. *[up to 500 words, please upload supporting strategy documents as needed]*

All the actions referred to in section 2 are duly aligned with the National Energy and Climate Plan and with the Portuguese Long-Term Strategy on Carbon Neutrality by 2050 and with the goals of the Paris Agreement, as they are critical elements to achieve our 2030 and 2050 targets.

SECTION 6: MONITORING AND REPORTING

6.1. Please describe how you intend to track the progress of the proposed outcomes in section 3. Please also describe if you intend to use other existing reporting frameworks to track progress on the proposed outcomes.

Portugal is ready to biannually report on the outcomes in section 3 and we are ready to use the suggested reporting frameworks. While our national reporting model is biannual, we are open to reporting annually if there is a pre-established model of annual reporting defined by the UN.

SECTION 7: GUIDING PRINCIPLES CHECK LIST

Please use the checklist below to validate that the proposed Energy Compact is aligned with the guiding principles.

I. Stepping up ambition and accelerating action - Increase contribution of and accelerate the implementation of the SDG7 targets in support of the 2030 Agenda for Sustainable Development for Paris Agreement *I. 1. Does the Energy Compact strengthen and/or add a target, commitment, policy, action related to SDG7 and its linkages to the other SDGs that results in a higher cumulative impact compared to existing frameworks?* Yes No

I.2. Does the Energy Compact increase the geographical and/or sectoral coverage of SDG7 related efforts? Yes No

I.3. Does the Energy Compact consider inclusion of key priority issues towards achieving SDG7 by 2030 and the net-zero emission goal of the Paris Agreement by 2050 - as defied by latest global analysis and data including the outcome of the Technical Working Groups? Yes No

II. Alignment with the 2030 agenda on Sustainable Development Goals – Ensure coherence and alignment with SDG implementation plans and strategies by 2030 as well as national development plans and priorities. *II.1. Has the Energy Compact considered enabling actions of SDG7 to reach the other sustainable development goals by 2030?* Yes No

II.2. Does the Energy Compact align with national, sectoral, and/or sub-national sustainable development strategies/plans, including SDG implementation plans/roadmaps? Yes No

II.3. Has the Energy Compact considered a timeframe in line with the Decade of Action? Yes No

III. Alignment with Paris Agreement and net-zero by 2050 - Ensure coherence and alignment with the Nationally Determined Contributions, long term net zero emission strategies.

III.1. Has the Energy Compact considered a timeframe in line with the net-zero goal of the Paris Agreement by 2050? Yes No

III.2. Has the Energy Compact considered energy-related targets and information in the updated/enhanced NDCs? Yes No

III.3. Has the Energy Compact considered alignment with reaching the net-zero emissions goal set by many countries by 2050? Yes No

IV. Leaving no one behind, strengthening inclusion, interlinkages, and synergies - Enabling the achievement of SDGs and just transition by reflecting interlinkages with other

SDGs. *IV.1. Does the Energy Compact include socio-economic impacts of measures being considered?* Yes No

IV.2. Does the Energy Compact identify steps towards an inclusive, just energy transition? Yes No

IV.3. Does the Energy Compact consider measures that address the needs of the most vulnerable groups (e.g. those impacted the most by energy transitions, lack of energy access)? Yes No

V. Feasibility and Robustness - Commitments and measures are technically sound, feasible, and verifiable based a set of objectives with specific performance indicators, baselines, targets and data sources as needed. *V.1. Is the information included in the Energy Compact based on updated quality data and sectoral assessments, with clear and transparent methodologies related to the proposed measures?* Yes No

V.2. Has the Energy Compact considered inclusion of a set of SMART (specific, measurable, achievable, resource-based and time based) objectives? Yes No

V.3. Has the Energy Compact considered issues related to means of implementation to ensure feasibility of measures proposed (e.g. cost and financing strategy, technical assistant needs and partnerships, policy and regulatory gaps, data and technology)? Yes No

SECTION 8: ENERGY COMPACT GENERAL INFORMATION

8.1. Title/name of the Energy Compact

Portugal Compact on Green Hydrogen

8.2. Lead entity name (for joint Energy Compacts please list all parties and include, in parenthesis, its entity type, using entity type from below)

Ministry of Environment and Climate Action

8.3. Lead entity type

Government

Non-Governmental Organization (NGO) Private Sector

Multilateral body /Intergovernmental Organization Academic

8.4. Contact Information

Local/Regional Government Civil Society organization/Youth Institution /Scientific Community Other relevant actor

Philanthropic Organization

Diana Carlos (diana.carlos@sgambiente.gov.pt) and Paulo Partidário (paulo.partidario@dgeg.gov.pt)

8.5. Please select the geographical coverage of the Energy Compact

Africa Asia and Pacific Europe Latin America and Caribbean North America West Asia Global

8.6. Please select the Energy Compact thematic focus area(s)

Energy Access Energy Transition Enabling SDGs through inclusive just Energy Transitions Innovation, Technology and Data Finance and Investment.

SECTION 9: ADDITIONAL INFORMATION (IF REQUIRED)

Please provide additional website link(s) on your Energy Compact, which may contain relevant key documents, photos, short video clips etc.