



SDG7 Energy Compact of Italy

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)

<input checked="" type="checkbox"/> 7.1. By 2030, ensure universal access to affordable, reliable and modern energy services.	Target(s): Participation to the R&D&I Mission Innovation activities to grant energy universal access Time frame: 2030 Context for the ambition(s): improve the economic system sustainability and ensure a fair and inclusive transition <i>Italy actively participates in Mission Innovation and CEM, with the specific aim of accelerating the R & D & I process globally. The activities planned with the MI program include joint activity in some developing countries, using technologies dedicated to the renewable sector and in particular to off-grids.</i>
<input checked="" type="checkbox"/> 7.2. By 2030, increase substantially the share of renewable energy in the global energy mix.	Target(s): Increase of energy mix (2-14% by 2050) Time frame: 2030-2050 Context for the ambition(s): Recovery and Resiliency National Plan (RRNP) reforms and investments package <i>In line with the RRNP, green hydrogen will have to increase from the current <2% in the energy mix, to a share of 13-14% by 2050, with an electrolyzer capacity of 500 GW.</i>
<input checked="" type="checkbox"/> 7.3. By 2030, double the global rate of improvement in energy efficiency.	Target(s): 2% per year energy efficiency increase in public administration buildings Time frame: 2021/22-2025-26 Context for the ambition(s): industry and buildings energy efficiency and virtuous market mechanism <i>Within the RRNP, a substantial investment has been allocating the 110% Superbonus tax credit that allows for the redevelopment of public facilities and residential buildings. The action is also supported by the search for new materials for energy efficiency. A further important investment is directed towards the energy communities for an amount including 2.2B/€.</i>
<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.	Target(s): Realization of 10 Hydrogen Valley (5 -10 demo plants) Time frame: 2030 Context for the ambition(s): improve Hydrogen vector knowledge in production, storage and distribution phases <i>Italy believes that the energy challenge has a global dimension consolidating and developing past experience and best practices on hydrogen application. In this perspective it is committed to:</i> <ul style="list-style-type: none"> • <i>the Mission Innovation initiatives in particular as co-leader of the Power Mission;</i> • <i>participates in Hydrogen Mission and CEM;</i> • <i>adheres to 22 TCP of IEA</i> • <i>It is also active with the Horizon 2020 and Horizon Europe programs at European level.</i>
<input checked="" type="checkbox"/> 7.b. By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in	Target(s): 40 hydrogen refueling stations Time frame: 2025-2030 Context for the ambition(s): new hydrogen market development

developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programs of support.

The RRNP includes the setting up of refuelling system for hydrogen mobility at a national level.

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): **Large-scale and long-duration electricity storage/**

Time frame: **2025**

Context for the ambition(s): **RES potential increase as key factor of a new economy development**

Italy established the coal phase out within 2025. In this perspective, the consolidation plan of renewable RES is gaining ground thanks to the investments in RRNP agrivoltaic systems to produce sustainable energy, smart grids up to € 4.4 billion, energy community, and other relevant measures.

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>Description of action (please specify for which ambition from Section 1)</i> 7.1 Developing demos and prototypes to be built and able to manage up to 100% green or renewable-based energy networks.</p>	<p><i>Start and end date</i> 2021-2026</p>
<p><i>Description of action (please specify for which ambition from Section 1)</i> 7.2</p> <ul style="list-style-type: none"> • New Hydrogen Valley creation; • Green Hydrogen introduction to benefit Italian Hard-to-Abate Sectors; • Development of hydrogen-powered train as sustainable mobility alternative; • Research & Development of hydrogen technologies; • Development of an industrial supply chain of electrolyzers – To achieve 1 GW / year of electrolyzers. 	<p><i>Start and end date</i> 2021-2026</p>
<p><i>Description of action (please specify for which ambition from Section 1)</i> 7.3 The 110% Superbonus tax credit is an instrument activated to relaunch the construction sector and respond to the important climatic and environmental challenges envisaged for the civil sector by the Integrated National Energy and Climate Plan. It is an incentive measure, that is introduced by the Italian decree-law "Relaunch" in May 2020 and distinguished into two different types: energy efficiency Superbonus and Super Sismabonus. The first one in particular aims to residential and public buildings energy efficiency and safety. The Superbonus mechanism provides that the "leading interventions" can also be carried out to the citizen at no cost (i.e. thermal insulation of the building envelope; replacement of heating systems with centralized systems) possibly followed by the so-called "towed" interventions. In order to enjoy the Super Sismabonus it is sufficient to perform an anti-seismic adaptation intervention. In this case, it is possible to benefit from the 110% deduction for the installation of photovoltaic systems and storage systems. Alternatively, the taxpayer can always directly bear the cost of the works and then decide whether to use the deduction in compensation to pay less taxes or transfer the tax credit to third parties (including credit institutions).</p>	<p><i>Start and end date</i> 2021-2026</p>
<p><i>Description of action (please specify for which ambition from Section 1)</i> 7.a Developing demos and prototypes to be built and able to manage up to 100% green or renewable-based energy networks. The same project will be applied for hydrogen projects.</p>	<p><i>Start and end date</i> 2021-2026</p>
<p><i>Description of action (please specify for which ambition from Section 1)</i></p>	<p>2021-2026</p>

7.b Creation of a first national network of 40 hydrogen refuelling stations.

SECTION 3: OUTCOMES

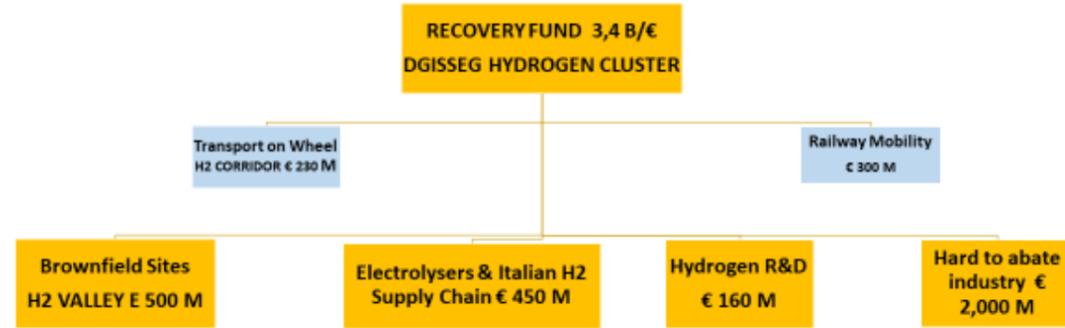
3.1. Please add at least one measurable and time-based outcome for each of the actions from section 2. *[Please add rows as needed].*

Outcome	Date
Target 7.1 the realization of demo in different climate and weather conditions according to natural resources of the local environment (e.g. Small Islands).	} 2021-2030
Target 7.2 introduction of green hydrogen into the industrial process to decarbonize these important hard to abate industrial sector (steel, refinery, glass plants).	
Target 7.3 energy efficiency of public administration buildings about 1-2% on the total number per year.	
Target 7.a Development and validation of demos prototype to able to manage 100% of renewable energy in different weather and climate conditions.	
Target 7.b improve the knowledge of the hydrogen at production, storage and distribution and create the condition to develop a market for hydrogen.	

SECTION 4: REQUIRED RESOURCES AND SUPPORT

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

MEASURES TO SUPPORT HYDROGEN DEVELOPMENT



DGISSEG - Div. VI Nuove Tecnologie e Ricerca

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 checked="" type="checkbox"/> Financing	<p><i>Description</i></p> <p>According to the Budget Law 2019 110% Superbonus for restructuring residential building (tax measure). The Superbonus beneficiary can decide to exercise the option of the discount on the invoice: the company or companies that carried out the work apply a discount of up to 100% of the value of the invoice and the citizen thus carries out the work without any monetary outlay. In this way, the company will be granting a tax credit equal to 110% of the amount of the discount applied, to be used always in annual installments of the same amount as five (or in four for expenses incurred in 2022). This measure creates a virtuous market mechanism that offers benefits to all those involved: the citizen can renovate the house for free, reduce the cost of bills and enhance their real estate assets; the company can increase its turnover thanks to the greater volume of work; the state can turn housing into more efficient and safer and support the employment and income increase.</p>
<input type="checkbox"/> In-Kind contribution	<i>Description</i>
<input type="checkbox"/> Technical Support	<i>Description</i>
<input type="checkbox"/> Other/Please specify	<i>Description</i>

SECTION 5: IMPACT

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

Italy country and Least developed countries at global level (10.000 permanent jobs and more than 200.000 temporary jobs-Boston Consulting).

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]

- **Hydrogen Valley - Reconversion of industrial areas, avoiding further use of agricultural areas, and a possible driver for the recovery of local economies, new and qualified jobs creation and widespread decarbonisation;**
- **Road mobility –hydrogen refuelling stations aims to a progressively decarbonising heavy transport, including Local Public Transport (regional/municipal buses). (The project development is actually in charge of the Italian Ministry of Sustainable Infrastructure and Mobility);**
- **Railway mobility - Hydrogen will drastically reduce emissions and pollutant in metropolitan centres;**
- **Hard to abate industries- transition from methane to green hydrogen for the implementation of sustainable and innovative transformation projects of the industrial production cycle;**
- **R&D of hydrogen technologies – to foster the efficiency of green hydrogen production through all the different phases and utilization and new business model including training of new professional figures;**
- **Development of an electrolyzers industrial chain - the production of green hydrogen leads to socio-economic impact and value in terms of new jobs and increasing social cohesion.**

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]

Hydrogen is uniquely positioned to contribute to the national environmental targets and to a more secure and reliable energy production. In particular, hydrogen can play a double role for the country: in the long run, up to 2050, hydrogen can help in the decarbonization effort together with other low carbon technologies, especially in hard-to-abate sectors (e.g., energy intensive manufacturing processes, aviation); in the shorter term, up to 2030, it will become progressively competitive in selected applications (e.g., chemicals, mobility, refining), enabling the development of a national hydrogen ecosystem, required to fully capture the hydrogen potential in the longer run. For the next decade, the government envisions the application of hydrogen in the transport sector, in particular in heavy transports (e.g. long-haul trucks), in railways, and in the industry, specifically in those segments in which hydrogen is already used as feedstock such as the chemical and oil refining sectors. In addition to that, hydrogen blending in the gas grid can be used to anticipate and stimulate the hydrogen market growth.

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.

All the projects will follow the procedures of monitoring and reporting according to the standard rules issued by the European Commission not only in terms of timing and milestone but also respecting the environment rules (DNSH-Do not Substantial Harm).

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

Italian Green Hydrogen Compact

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 for Ecological Transition

8.3. Lead entity type

Government

Local/Regional Government

Multilateral body /Intergovernmental Organization

Non-Governmental Organization (NGO)

Civil Society organization/Youth

Academic Institution /Scientific Community

Private Sector

Philanthropic Organization

Other relevant actor

8.4. Contact Information

Ministry of Ecological Transition
Energy Department
Division VI - *New Technologies and Research in the Energy and Geo-Resources sector*
e-mail: dgisseg.div6@mise.gov.it
e-mail: stefano.raimondi@mise.gov.it
Pec: dgisseg.div06@pec.mise.gov.it

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.

<https://www.mise.gov.it/index.php/it/notizie-stampa/2040668-pniec2030>

https://www.mise.gov.it/images/stories/documenti/Strategia_Nazionale_Idrogeno_Linee_guida_preliminari_nov20.pdf