



# SUSTAINABILITY-LINKED BOND FRAMEWORK



REPUBLIC OF SLOVENIA

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# 1. Introduction

Since gaining independence in 1991, Slovenia has made significant strides in achieving its development goals. It has been an active participant in some of the most significant international integration processes and become a committed international partner in global efforts promoting peace and security, respect for human rights, cultural diversity, the rule of law, conscientious response to global challenges and the creation of trends.

Slovenia is making progress in terms of quality of life and economic development, accompanied by a decrease in environmental pollution. In many areas, however, it still lags behind the most developed countries. While progress has been made in reducing environmental pollution, Slovenia still exerts an undue burden on the environment. Greenhouse gas emissions have fallen but are still above the EU average per unit of GDP. The increase in transit road traffic and unsustainable mobility poses environmental concerns, even though overall energy consumption has been gradually decreasing since 2008.

Slovenia's favourable natural conditions make an important contribution to biodiversity in the EU. However, the misuse of natural resources, especially in urbanisation, agriculture, and water management, is leading to a decline in species and habitats. To adapt to climate change and transition to a climate-neutral economy, sustainable changes in production and consumption are necessary to ensure long-term quality of life.



The Republic of Slovenia has set itself the goal of achieving sustainable economic and social development by the middle of the century, with a focus on net-zero greenhouse gas emissions, increased use of renewable energy sources and sustainable production and consumption. This commitment is in line with the goals of the Paris Agreement on Climate Change<sup>1</sup> and the latest scientific findings, particularly those of the Intergovernmental Panel on Climate Change (the “**IPCC**”). The IPCC and other recognised institutions warn that without appropriate action at global and national level, including within the EU, the catastrophic consequences of global warming are imminent. Achieving the Paris Agreement goals requires swift and decisive action to reduce greenhouse gas emissions, complemented by other urgent essential environmental and development measures. Climate-related disasters, which are becoming more severe, frequent, and intense, pose a major obstacle to sustainable development progress.

The Republic of Slovenia's commitment to sustainable development is deeply engrained in its strategic vision, embracing the interdependence of economic, environmental, and social pillars. This Sustainability-Linked Bond Framework (the “**Framework**”) signifies Slovenia's determination to integrate its financial mechanisms with the nation's environmental objectives, driving towards climate-neutral society. Due to its geographical characteristics, Slovenia is warming at a faster rate than the global average and is therefore vulnerable to the consequences of climate change. This is evident in the increasing frequency of extreme weather events (sleet in 2014, bark beetle infestation in 2015 and 2016, strong winds in 2017 and 2018, drought and fire in Karst region in 2022 and floods in much of the country in 2023).

## Slovenia's Commitment to Sustainable Development

The Republic of Slovenia has embarked upon a transformative journey towards sustainable development, aligning its national agenda with global objectives to create a resilient, prosperous, and sustainable future for its citizens.

Slovenia recognises the interconnectedness of global challenges and the imperative to sustainability. The nation's strategy is underpinned by its commitment to the United Nations' 2030 Agenda for Sustainable Development and aims to align its development goals with the global Sustainable Development Goals (“**SDGs**”)<sup>2</sup>, a universal call to action to end poverty, protect the planet, and ensure that all people live in peace and prosperity by 2030.

Slovenia is committed to advancing its sustainable development agenda, the objectives of the Paris Agreement on climate change and the European Green Deal<sup>3</sup>, aligning its national policies with the European Union's energy and climate goals, and adhering to global sustainability standards. The core development framework for shaping the country's long-term development goals to provide a high quality of life for all is anchored in the Slovenian Development Strategy 2030 (“**SDS 2030**”)<sup>4</sup>.

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1 Available [here](#).

2 Available [here](#).

3 Following the presentation of the European Green Deal by the Commission in December 2019, a series of legislative acts (the 'Fit for 55') were adopted at EU level, including Regulation (EU) 2021/1119 establishing the framework for achieving climate neutrality, which significantly increased the 2030 climate and energy targets at EU level.

4 Available [here](#).

In accordance with SDS 2030, Slovenia's environmental development objectives until 2030 will focus on the transition to a climate-neutral circular economy and sustainable management of natural resources. As a contracting party to the Paris Agreement, Slovenia has pledged to reduce its greenhouse gas emissions to net-zero. This commitment is outlined in the Resolution on the Long-Term Climate Strategy of Slovenia until 2050<sup>5</sup> (the "**Climate Strategy**"), which serves as the country's main strategic document on climate change.

In 2022, the goal of climate neutrality by 2050 was enshrined as Slovenia's national climate objective under the Environmental Protection Act (*Zakon o varstvu okolja, ZVO-2*)<sup>6</sup>. Slovenia is obligated to contribute effectively to meeting EU and international climate commitments, aiming to reduce greenhouse gas emissions to keep the global temperature rise below 2°C and striving to limit it to 1.5°C compared to pre-industrial levels.

The goals of Slovenia's energy and climate policy are to ensure reliable, safe, and competitive energy supply and to transition to a climate-neutral society. The policy follows the objectives of climate justice and sustainable development by fostering economic growth, creating high-value jobs, improving quality of life, increasing environmental responsibility, and providing affordable energy services. These goals guide sectors with the highest greenhouse gas emissions while respecting specific sectoral targets.

Slovenia's long-term Climate Strategy includes a comprehensive analysis of various scenarios to contribute to EU and Member State commitments under the United Nations Framework Convention on Climate Change and the Paris Agreement, including the scenario for achieving net-zero GHG emissions in the European Union by 2050 and net-negative emissions beyond that year. The Climate Strategy also analyses the impact of these scenarios on the rest of the global and EU carbon budget a basis for discussing cost-effectiveness, efficiency, and fairness in reducing GHG emissions.

The Climate Act (*Podnebni zakon*)<sup>7</sup> is currently being drafted to help tackle climate change more effectively and achieve climate neutrality by 2045. The proposal outlines three key objectives: reducing greenhouse gas emissions, adapting to climate change, and increasing the resilience of both natural and human systems. Specifically, it contains provisions on the annual reduction of greenhouse gas emissions in sectors outside the EU Emissions Trading System as well as the establishment of a national greenhouse gas inventory system, emissions projections, and the preparation of reports on climate change mitigation and adaptation.

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<sup>5</sup> Available [here](#).

<sup>6</sup> Available (in Slovenian) [here](#).

<sup>7</sup> Draft (in Slovenian) available [here](#).

## Integrated National Energy and Climate Plan

The objectives for sustainable development set out in the SDS 2030 are also referenced in the 2024 Integrated National Energy and Climate Plan (“**NECP**”) of the Republic of Slovenia<sup>8</sup>, which has been prepared in line with Commission Regulation (EU) 2018/1999 (the “**Governance of the Energy Union and Climate Action Regulation**”).<sup>9</sup> Slovenia initially adopted the original NECP in 2020 in accordance with the Governance of the Energy Union and Climate Action Regulation as then in force, however, Slovenia’s NECP has been updated in 2024 to reflect the more ambitious climate and energy targets set by the EU for 2030.

*For the purposes of this framework, if not specified otherwise, the text refers to the 2024 NECP.*

In terms of adapting to climate change, EU Member States, including Slovenia, are required to develop strategies and plans within the framework of European climate rules. The NECP serves as a strategic action document for energy and climate policy planning, covering a period of at least ten years. The national measures proposed in Slovenia’s NECP are in line with the European Union’s energy and climate targets and comply with global sustainability standards. According to the provisions of the EU regulation, the NECP must be updated every five years.

EU Member States contribute to the achievement of EU’s energy and climate targets through their national contributions, with the obligation to be as ambitious as possible, while of course considering important national circumstances. The NECPs and long-term climate strategies must be coherent and complementary, with the NECP focusing on short and medium-term targets and measures up to 2030 (with a view to 2040), while the long-term Climate Strategy outlines the broader vision and long-term ambitions.

Since Slovenia’s first NECP in 2020, the context for the updated NECP has changed significantly. The European Green Deal and ‘Fit for 55’ legislation raised 2030 climate and energy targets. The COVID-19 pandemic impacted economic activity, and the war in Ukraine has caused high energy prices, leading to emergency laws under REPowerEU<sup>10</sup> to reduce energy demand and prices. Furthermore, since the adoption of the 2020 NECP, several exceptional weather events, such as the catastrophic floods in August 2023, have demonstrated the urgent need to strengthen climate action and adaptation to climate change.

Slovenia’s updated NECP focuses on enhanced climate action, a faster transition to clean energy, greater energy security and the resilience of the Energy Union. In conjunction with the national strategy to phase-out coal and restructure coal regions according to just transition principles, it also reinforces Slovenia’s commitment to a just transition. Additionally, the NECP supports sustainable solutions in transport (such as sustainable public transport), buildings (including heating, cooling, and comprehensive renovation), and industry (to ensure competitiveness). At present, transport in Slovenia contributes more than 50% of emissions outside the EU Emissions Trading System.

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<sup>8</sup> Available [here](#) and [here](#).

<sup>9</sup> Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (Text with EEA relevance.) Available [here](#).

<sup>10</sup> Available [here](#).

The 2024 NECP provides a detailed framework, consistent with the five dimensions of the Energy Union<sup>11</sup>: decarbonisation; energy efficiency; energy security; internal energy market; and research, innovation, and competitiveness. The plan outlines Slovenia's ambitious goals to reduce greenhouse gas emissions, increase the share of renewable energy, improve energy efficiency, and enhance energy security, all while fostering innovation and ensuring competitive energy markets.

**1. Decarbonisation** is a key focus, with Slovenia aiming to reduce its greenhouse gas emissions beyond what the EU's burden-sharing schemes foresee for Slovenia, that is, by at least 28% compared to 2005 levels by achieving the indicative sectoral targets. In line with the NECP measures, Slovenia plans to reduce **total GHG emissions by at least 35-45%<sup>12</sup> by 2030 and by at least 55% by 2033 compared to 2005**. The country is committed to increasing the share of renewable energy sources in its energy mix. By proactively engaging the state and fostering a culture of cooperation in implementing RES projects, Slovenia aims to achieve **at least a 33% share of renewables in final energy consumption by 2030**. This includes specific goals for different sectors, such as electricity, heating and cooling, and transport.

The **Energy Act** (Energetski zakon, EZ-2)<sup>13</sup> promotes the shift from fossil fuels to more environmentally friendly energy sources. It streamlines the financial incentives for investments in renewable energies and energy efficiency and ensures transparency and fairness.

Municipalities are required to draw up local energy concepts with seven-year targets for energy savings and the expansion of renewable energies as well as for the renovation of public buildings. Concessions for gas distribution can be extended for five to seven years. The Energy Act also outlines the responsibilities of the Energy Agency and the Energy Supervisory Authority, the energy infrastructure and expropriation procedures. It includes measures for energy crises and price regulation and provides EU funding for the revitalisation of energy sites and the modernisation of the energy system, with additional funding for successful green transition projects.

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<sup>11</sup> More information available [here](#).

<sup>12</sup> Due to uncertainty about operations of Šoštanj Thermal Power Plant in the immediate future, the 2030 GHG emission reduction goal is expressed as a range. See the infobox on page 8.

<sup>13</sup> Available (in Slovenian) [here](#).



## Šoštanj Thermal Power Plant (TEŠ) – immediate and future developments

Figure 1: Šoštanj Thermal Power Plant



Šoštanj Thermal Power Plant (Termoelektrarna Šoštanj, TEŠ) is one of the biggest electricity producers, as well as the single biggest GHG emitter, in Slovenia. In line with Slovenia's **National Strategy for coal phase-out** (Nacionalna strategija za izstop iz premoga in prestrukturiranje premogovnih regij v skladu z načeli pravičnega prehoda)<sup>14</sup> the complete shutdown and closure of TEŠ was planned for 2033 at the latest. However, the recent rise in prices of carbon emission coupons, as well as increasing coal prices have expedited this timeline. In 2023 TEŠ emitted 2,745.9 kt CO<sub>2</sub><sup>15</sup> and generated 2,682.9 GWh of electricity (~18.9% of all electricity generation in Slovenia in 2023).<sup>16</sup> Excluding the 50% share of electricity generation from Krško Nuclear Power Plant (Nuklearna elektrarna Krško, NEK) that is supplied to the Republic of Croatia<sup>17</sup> as its co-owner, TEŠ's share of Slovenia's power supplied increases to 23.3%.

14 Available (in Slovenian) [here](#).

15 Source: TEŠ 2023 Annual Report. Available (in Slovenian) [here](#).

16 Source: Energy Agency of the Republic of Slovenia, *Report on the energy situation in Slovenia (2023)*. Available [here](#).

17 Based on the *Treaty between the Government of the Republic of Slovenia and the Government of the Republic of Croatia on the regulation of the status and other legal relations regarding investment, exploitation and decommissioning of the Krško Nuclear Power Plant*. Available (in Slovenian) [here](#).



At the time of this Framework's publication there is still some uncertainty about TEŠ operations in the near future – a fact also reflected in the NECP emission reduction targets (35-45% GHG emission reductions by 2030 relative to a 2005 baseline).

The Act on transitional funding of accelerated and fair coal phase-out (Zakon o prehodnem financiranju pospešenega in pravičnega izstopa iz premoga (ZPFPPIP))<sup>18</sup> is being prepared to support the continued operation of the Šoštanj Thermal Power Plant and the Velenje Coal Mine. It aims to facilitate a fair coal phase-out, regional restructuring, and the development of alternative heat sources from early 2025 to April 2027.

From the beginning of 2025 until the end of April 2027, i.e. for three heating seasons, TEŠ will provide the public service of district heating in the municipalities of Velenje and Šoštanj, while generating electricity only as a byproduct.

In the meantime, the government will also expedite the Act on the Gradual Closure of the Velenje Coal Mine and the Act on the Development Restructuring of the Savinja-Šaleška Region. Both laws are under preparation and will ensure a well-considered and socially equitable exit from coal for the Savinja-Šaleška region, in line with the National Strategy for the Exit from Coal and the Restructuring of Coal Regions.

Slovenia's National Strategy for coal phase-out sets 2033 at latest as the end date for coal usage for electricity production and just transition away from coal. The adoption of the strategy lays the groundwork for the adoption of the Act on the Gradual Closure of the Velenje Coal Mine (Zakon o postopnem zapiranju Premogovnika Velenje)<sup>19</sup> and the Act on the Economic Restructuring of the Savinja-Šaleška Region (Zakon o prestrukturiranju Savinjsko-Šaleške regije), based on which the State will provide additional resources and funds for the closure of the Velenje Coal Mine and rehabilitation of degraded areas.

**2. Energy efficiency** is another cornerstone of Slovenia's strategy, with comprehensive measures to reduce energy consumption across various sectors planned, especially the energy consumption for transportation and in households. This in turn should contribute to a reduction in overall natural resource utilisation. The NECP details Slovenia's objectives for primary and final energy use, with a focus on achieving significant improvements in energy efficiency by 2030. **Specifically, by 2030, Slovenia aims to ensure that final energy consumption will not exceed 4,320 ktoe (50.2 TWh).**

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<sup>18</sup> Available (in Slovenian) [here](#).

<sup>19</sup> Draft (in Slovenian) available [here](#).

3. To ensure **energy security**, Slovenia is focused on ensuring a reliable and sustainable energy supply, reducing its dependence on imported energy, and enhancing the resilience of its energy infrastructure. The internal energy market objectives aim to further integrate Slovenia's energy market within the EU framework, promoting competition and ensuring fair prices for consumers.

4. The main objectives of the **internal energy market** are to develop and manage the electricity distribution network, ensure reliability of the natural gas supply, monitor and maintain power quality, support the transition to a climate-neutral society, develop the flexibility market, facilitate cross-sector networking, foster research cooperation, develop the gas pipeline network and reduce energy poverty.

5. **Research, innovation, and competitiveness** are emphasised in the NECP. To support its transition to a climate-neutral, sustainable economy, Slovenia is investing in new technologies and solutions, with a focus on fostering innovation in the energy sector, supporting businesses in adopting green technologies, and investing in research and development. A key objective is to increase investment in research and development by at least 3.5% of GDP by 2030, with a minimum of 1.25% of GDP allocated from public funds. These funds will be directed towards targeted research projects, multidisciplinary research and development programmes, pilot projects, as well as collaborative research and development programmes between science and industry.

Through the SDS 2030 and the NECP, Slovenia is poised to make significant strides in achieving a sustainable, resilient, and prosperous future for its citizens, while contributing to global efforts to address climate change and promote sustainable development.

## Climate Adaptation & the Green Transition

Adapting to climate change involves the implementation of a range of measures and policies aimed at reducing vulnerability and increasing resilience to the current and expected impacts of climate change. In Slovenia, an effective response will not only ensure greater security and prosperity for its citizens but will also protect the natural environment and promote a more sustainable economy.

Slovenia's Strategic Framework for Climate Change Adaptation<sup>20</sup>, adopted in December 2016, sets a clear goal to make the country resilient to climate change impacts by 2050. This framework outlines a range of measures to strengthen adaptive capacities, manage risks, and capitalise on the opportunities presented by climate change. Key components of this framework include:

- I. **Mainstreaming adaptation:** Integrating climate change adaptation into all relevant policies and sectors;
- II. **Broadening cooperation:** Fostering collaboration across various sectors and stakeholders;
- III. **Sharing research and knowledge:** Promoting research, education, and knowledge sharing on climate adaptation; and
- IV. **Funding and implementation:** Securing financial resources and ensuring effective implementation of adaptation measures.

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<sup>20</sup> Available [here](#).

In Slovenia, the full extent of vulnerability to climate change has yet to be fully assessed. However, the framework, which covers the period from 2016 to 2020, sheds light on the challenges, gaps and barriers to adaptation. This report concluded that, to date, implementation has been only moderately successful.

The updated NECP prioritises the strengthening of climate adaptation policies and actions. This includes the preparation of the national strategy of climate change adaptation to climate change and action plan to address any deficiencies, as well as the establishment of the Climate Change Adaptation Centre with local hubs for regions and municipalities, and development of research and expert capacities.

Slovenia's Climate Strategy also addresses adaptation to climate change. The Republic aims to become a resilient society with a high quality of life and security by 2050, taking full advantage of climate change opportunities through sustainable development.

The draft Climate Act aims to create a framework for more effective implementation of climate policy, including adaptation measures. The Act prescribes the content of the adaptation strategy and identifies priority sectors for action such as water resources and management, agriculture, forestry, and nature conservation. Within one year after the Climate Act entry into force, Slovenia must adopt a national climate change adaptation strategy that includes vulnerability indicators and sector-specific adaptation measures at regional level. The progress of these adaptation measures will be published annually.

## Key environmental orientations

Slovenia is increasingly vulnerable to intense natural disasters, such as floods and forest fires, which cause economic damage and pose a threat to human lives. To counteract this, Slovenia plans to increase investment in climate protection and disaster prevention. Measures include enhancing disaster prevention and flood protection, improving water and environmental supplies, and promoting reforestation and biodiversity conservation.

To improve disaster response and flood prevention, Slovenia will establish efficient systems for flood damage repair and reconstruction. This will involve streamlining administrative procedures, especially in the areas of spatial planning and construction, to enable faster reconstruction and better resource management. Stricter building codes will also be enforced in flood-prone areas to minimise risks.

The Flood Risk Reduction Plan <sup>21</sup> sets out a number of non-construction and construction flood protection measures for the most flood-prone river basins in Slovenia.

Plans are also underway to improve the drinking water and wastewater infrastructure. To maintain the overall health of forests, including their regeneration and resilience to climate change, measures will be taken to reduce the risk of the spread of forest pests and improve the traceability and quality of forest reproductive material.

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<sup>21</sup> Available (in Slovenian) [here](#).



From 2021 to 2027, Slovenia's environmental policy will focus on combating the effects of natural disasters, increasing the resilience to climate change, reducing flood risk and improving water management. The allocated funds will support the treatment of urban wastewater, the improvement of drinking water supplies and protection of water-dependent species and habitats in Natura 2000 areas.<sup>22</sup>

Investments in the circular economy will increase resource efficiency, promote eco-innovation, and improve waste management. In addition, measures will be taken to promote environmentally friendly wood processing and companies will be supported in switching to sustainable business models through funding from the EU Recovery and Resilience Plan.

### **The catastrophic floods of August 2023<sup>23</sup>**

In August 2023, Slovenia suffered its worst ever natural disaster: widespread flooding that affected more than two-thirds of the country, and caused considerable damage to infrastructure and homes. Seven people died, and thousands were displaced, with some areas deemed uninhabitable. To expedite the recovery process, intervention laws were enacted to enable faster procedures, more efficient reconstruction, and transparency in the use of funds.

The estimated cost of reconstruction, maintenance of waterways, and replacement of housing amounts to EUR 9.9 billion or 15.7% of GDP in 2023<sup>24</sup>. Funding for the recovery measures will be secured both from new sources, including the EU Solidarity Fund and compulsory solidarity contribution, as well as by prioritising of expenditures in the state budget.

To finance reconstruction, the Slovenian government has adopted temporary measures under the Reconstruction, Development, and Provision of Financial Resources Act<sup>25</sup> to increase state revenues to support the affected regions.

To ensure the future long-term resilience of infrastructure to increasing climate risks, all projects funded under the Post Flood Recovery Policy undergo a special approval process of the Government Council for Reconstruction. This Council is composed of internationally recognised experts from various fields, including bridge engineers, architects, urban planners, etc. These experts can either recommend improvements or approve the project as acceptable in terms of future climate-related risks. Another focus is on redesigning infrastructure to make it more resilient to future climate risks. An excellent example of this is the redesign of several bridges with piers that were destroyed in the floods.

<sup>22</sup> More information available [here](#).

<sup>23</sup> More information available [here](#).

<sup>24</sup> The damage assessment was estimated using the internationally recognised Post-Disaster Needs Assessment methodology.

<sup>25</sup> Available (in Slovenian) [here](#).

## Financing Climate Action and the Green Transition

The Slovenian government has adopted the Medium-Term Fiscal and Structural Plan 2025 – 2028<sup>26</sup>, aligned with the new EU financial rules introduced in April 2024. This strategic document outlines the government's four-year programme and priorities, including key reforms and investments in response to the European Semester recommendations and other EU priorities.

For the period 2025-2028, Slovenia plans to allocate around 5.5% of GDP to public investment projects, exceeding the historical long-term average and aligning with EU recommendations. These investments will focus on the green transition, encompassing transport (railroads), environmental infrastructure, health, long-term care, housing, education, sports, and culture. In addition to the State budget, municipalities, and companies such as Slovenian Railways will also make investments. EU funding will play a small part.

According to the 2024 NECP, the estimated investment requirements for 2021-2030 are outlined in two scenarios: one with a focus on renewable energy and the other a combination of nuclear power and renewable energy. Both scenarios have similar investment plans for the period 2021-2030 and only start to diverge after 2030.



The investments planned for the period 2021-2030 amount to a total of EUR 57 billion. Maximising private funding is crucial, with the funding gap to be covered by prioritising EU funds, financial instruments, and the central budget. The financing model will coordinate public grants, loans and resources from financial institutions and funds.

Sources of grants and loans include cohesion funds, the Recovery and Resilience Plan, the Climate Change Fund, the Modernisation Fund, Eco Fund, the Just Transition Fund, the Social Climate Fund, earmarked contributions, revenues from carbon taxes, national and municipal budgets, and revenues from public services such as electricity network charges and road tolls.

Between 2021-2023, EUR 2.2 billion in public funds have already been invested in the green transition. The medium-term need for public funding is estimated at around 4% of GDP. Most of the public funding will be needed for investments in transport infrastructure (rail transport), as well as investment in parts of the electricity grid and in sustainable mobility initiatives. Sustainable mobility includes investments in cycling infrastructure, multimodal hubs, improvements to public transport infrastructure and improvements to pedestrian infrastructure.

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<sup>26</sup> Available [here](#).

## 2. Sustainability-Linked Bond Framework

### Historical Context of Slovenia's Bond Issuances

Historically, Slovenia's bond issuances have been conventional, aimed at supporting the country's economic and infrastructural development needs. However, acknowledging the importance of sustainable development and rising investor demand for responsible investment options, Slovenia has progressively embraced sustainable finance.

In this context, Slovenia has previously issued Sustainability and Social bonds, which have been pivotal in channeling capital towards environmentally and socially beneficial projects.

In June 2021, the Republic of Slovenia made its debut in the Sustainability Bond market with a 10-year issuance of EUR 1 billion, due on 1 July 2031. The initial issue was followed by reopenings which brought the total outstanding amount to EUR 1.24 billion. Building on this, Slovenia issued its 2<sup>nd</sup> 10-year Sustainability Bond in January 2023, this time with a larger volume of EUR 1.25 billion. More recently in September 2024, the Republic made its inaugural foray into the Samurai bond market with a dual-tranche (3- and 5-year) JPY 50 billion Social Samurai bond.

Sustainability Bond Frameworks were published concurrently with the issuance of both Sustainability Bonds (in June 2021 and January 2023 respectively). Additionally, Slovenia's reports on allocation and outcomes, as well as independent assessment thereof and external impact reporting have been made available and can be accessed on the Ministry of Finance's website<sup>27</sup>.

These issuances have laid a solid foundation for the Republic of Slovenia, highlighting its commitment to sustainability and its ability to align financial strategies with environmental and social objectives. Building on this experience, Slovenia is advancing its sustainable finance journey by developing a framework for Sustainability-Linked Bonds ("**SLBs**"), which represent a more performance-oriented approach to integrating sustainability into its financing instruments.

### Framework Rationale

The Republic of Slovenia is dedicated to progressing its sustainable finance agenda and harmonising its actions with global best practices. A key aspect of this commitment is the introduction of Sustainability-Linked Bonds.

Led by the Ministry of Finance in collaboration with various government bodies, Slovenia is working to incorporate sustainability aspects into its fiscal and economic strategy. Slovenia's progress towards SLBs is part of a broader strategy to make sustainability a central component of its financial and policy structures. This initiative is in line with Slovenia's dedication to international sustainability standards and its active engagement in global sustainability discussions.

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<sup>27</sup> Ministry of Finance, Treasury Directorate, Investor relations. Available [here](#).



The SLB Framework has been carefully designed to offer investors and stakeholders a clear and robust approach to assess Slovenia's dedication to its sustainability targets. It outlines the criteria and methodologies that connect Slovenia's financial instruments to its sustainability results. Through SLBs, Slovenia aims to leverage financial markets to incentivise crucial projects that advance the nation towards its environmental and social goals, providing investors with an opportunity to contribute to meaningful, sustainable development.

As Slovenia introduces this Sustainability-Linked Bond Framework, it invites the investment community and international partners to support the transition towards sustainability. The Ministry of Finance intends for the Framework to offer a model for aligning financial investment with tangible, positive environmental and social outcomes, fostering a sustainable future for all.

## Adherence to the ICMA Sustainability-Linked Bond Principles

This Framework has been prepared in accordance with the Sustainability-Linked Bond Principles 2024<sup>28</sup>, as administered by the International Capital Markets Association ("**ICMA**"), and their five core components:

- I. Selection of Key Performance Indicators ("**KPIs**")
- II. Calibration of Sustainability Performance Targets ("**SPTs**")
- III. Bond Characteristics
- IV. Reporting
- V. Verification

Slovenia's SLB Framework is drafted to ensure alignment with international best practices and a clear focus on measurable and impactful sustainability outcomes. This strategy aims to build investor trust, promote transparency, and contribute to global sustainable development efforts.

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<sup>28</sup> Available [here](#).

# I. Selection of Key Performance Indicators

## Approach to Selecting KPIs

In selecting KPIs for Slovenia's Sustainability-Linked Bond Framework, a rigorous approach has been taken, ensuring each indicator is directly tied to the nation's sustainability commitments and strategic objectives. These KPIs reflect Slovenia's dedication to tackling its most pressing sustainability challenges, in line with its Sustainable Development Strategy 2030 and international agreements such as the Paris Agreement and the EU's climate and energy targets.



Chosen for their relevance to Slovenia's sustainability aims, these KPIs are measurable and capable of driving significant environmental or social impacts and include reducing greenhouse gas emissions, increasing renewable energy share, and enhancing energy efficiency. Each KPI is supported by a clear rationale, explaining its significance, measurement methodology, and alignment with national and international targets. This ensures the SLBs serve not only as financial instruments but also as tools for advancing Slovenia's sustainable development.

## KPI 1: Total annual greenhouse gas emissions

**KPI definition and perimeter:** The KPI is defined as the annual greenhouse gas emissions (ETS and non-ETS emissions) produced in Slovenia. The total annual GHG emissions KPI encompasses emissions from all relevant sectors, including energy, industrial processes, agriculture, and waste.

Land use, land use change and forestry (“**LULUCF**”) emissions are excluded from the KPI.

Emissions are expressed in kt CO<sub>2</sub> equivalent, calculated using the global warming potential values from the Fifth Assessment Report of the United Nations Intergovernmental Panel on Climate Change (“**AR5**”)<sup>29</sup> which take into account the contributions of individual gases according to their account global-warming potential. Global warming potential values from the AR5 will be used for the calculation of this KPI until at least 2030 notwithstanding potential updates thereof in accordance with the Governance of the Energy Union and Climate Action Regulation<sup>30</sup> and Commission Delegated Regulation (EU) 2020/1044.<sup>31</sup>



**Rationale and materiality:** In its SDS 2030, the Government of the Republic of Slovenia defined the transition to a low-carbon circular economy as a priority development direction for the entire economy.

This KPI is key for monitoring Slovenia's climate change mitigation efforts as it covers all GHG emissions produced within Slovenia's borders, making it an essential metric for setting and monitoring economy-wide efforts to address climate change. Lowering national greenhouse gas emissions is key for Slovenia to deliver on its commitments under the Paris Agreement.

<sup>29</sup> Intergovernmental Panel on Climate Change (2013). Anthropogenic and Natural Radiative Forcing. In Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

<sup>30</sup> Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (Text with EEA relevance). Available [here](#).

<sup>31</sup> Commission Delegated Regulation (EU) 2020/1044 of 8 May 2020 supplementing Regulation (EU) 2018/1999 of the European Parliament and of the Council with regard to values for global warming potentials and the inventory guidelines and with regard to the Union inventory system and repealing Commission Delegated Regulation (EU) No 666/2014 (Text with EEA relevance). Available [here](#).

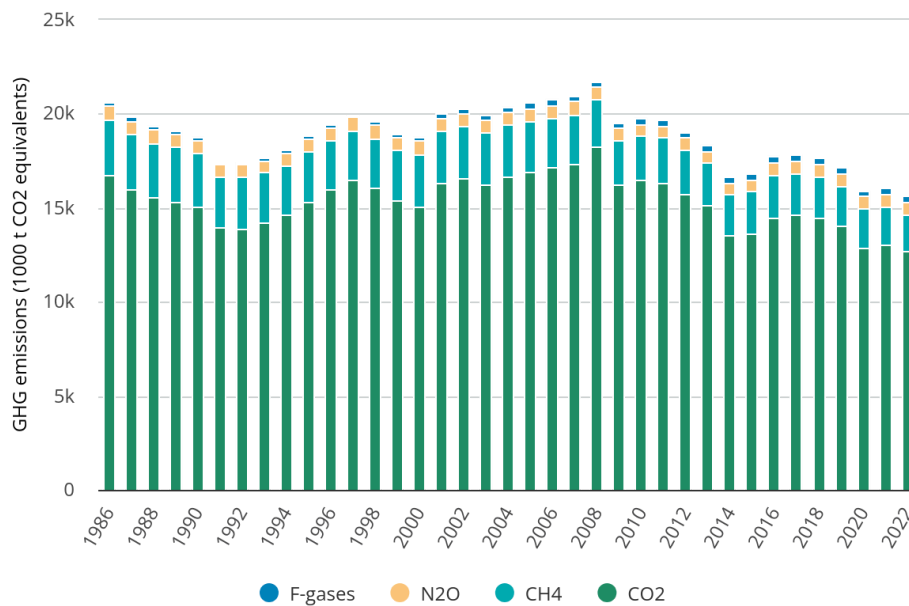


**SDG alignment:** SDG 13 *Climate Action*, SDG 7 *Affordable and clean energy*

**Baseline and baseline performance:** 2005, 20,595.82 kt CO<sub>2</sub>e

**Historical performance:**

**Figure 2: Total GHG emissions excl. LULUCF, Slovenia, 1986-2022**



Source: Environmental Agency of the Republic of Slovenia

Year	SF6	PCF	HCF	F-Gasses	N2O	CH4	CO2	Total	Index (2005 = 100)
2005	18.79	127.77	130.25	276.81	672.41	2,710.96	16,935.64	20,595.82	100.00
2006	18.74	120.79	151.78	291.22	683.03	2,617.08	17,178.07	20,769.41	100.84
2007	18.31	89.61	176.24	284.16	688.52	2,638.83	17,342.99	20,954.51	101.74
2008	20.23	13.25	202.52	236.00	653.49	2,511.58	18,278.46	21,679.53	105.26
2009	17.99	4.71	219.26	241.96	644.57	2,420.01	16,204.11	19,510.65	94.73
2010	18.03	8.67	232.68	259.38	637.67	2,384.59	16,459.73	19,741.38	95.85
2011	19.38	18.13	244.24	281.74	646.60	2,380.78	16,358.79	19,667.91	95.49
2012	16.35	16.29	268.34	300.97	650.29	2,327.68	15,759.57	19,038.52	92.44
2013	17.19	13.77	289.00	319.96	526.12	2,264.80	15,128.26	18,339.14	89.04
2014	17.21	13.69	302.90	333.80	632.78	2,150.78	13,561.31	16,678.67	80.98
2015	18.12	14.15	312.09	344.37	652.72	2,223.83	13,645.49	16,866.40	81.89
2016	17.47	17.79	328.00	363.26	658.59	2,271.41	14,458.37	17,751.62	86.19
2017	17.79	15.69	323.87	357.35	636.70	2,217.05	14,616.68	17,827.78	86.56
2018	17.51	14.02	304.61	336.13	646.43	2,143.55	14,519.87	17,645.98	85.68
2019	17.52	10.62	282.76	310.89	682.12	2,119.50	14,039.44	17,151.95	83.28
2020	17.91	8.65	281.39	307.95	676.51	2,090.39	12,854.91	15,929.77	77.34
2021	17.14	7.04	282.92	307.10	660.65	2,046.96	13,058.88	16,073.59	78.04
2022	16.85	3.89	281.86	302.60	703.25	1,907.95	12,701.29	15,615.09	75.82

Source: Environmental Agency of the Republic of Slovenia, own calculations

## Calculation methodology and governance process:

The production of KPI 1 is governed by the Governance of the Energy Union and Climate Action Regulation, which sets out the necessary legislative foundation for reliable, inclusive, cost-efficient, transparent and predictable governance of the Energy Union and Climate Action, as amended,<sup>32</sup> as well as Commission Implementing Regulation (EU) 2020/1208 on the structure, format, submission processes and review of information reported by Member States ("**Governance of the Energy Union and Climate Action Regulation Commission Implementing Regulation**").<sup>33</sup>

The upcoming Slovenian Climate Act (*Podnebni zakon*)<sup>34</sup> transposes various climate-related directives and defines the general framework for climate-related regulations, as well as setting out policies and measures to reduce greenhouse gas emissions and adapt to climate change, tools for compliance monitoring, and the economic incentives for green transition and financial instruments therefor. The Climate Act also defines the Environmental Agency (*Agencija Republike Slovenije za okolje, "ARSO"*) as the calculation and reporting body for GHG emissions in Slovenia.

Greenhouse gas emissions monitored within the emission inventory include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and F-gasses (such as hydrofluorocarbons (HFC), perfluorocarbons (PFC) and sulphur hexafluoride (SF<sub>6</sub>)). GHG emissions are calculated according to the IPCC methodology developed under the UN Climate Change Convention, which enables international comparability of data. Emissions are calculated for transport, energy industries, industrial processes and the use of products, fuels in industry, fuels in households, agriculture, forestry and fisheries, and commercial use, fugitive emissions from fuels, agriculture, and waste. Land use, land use change and forestry represents a special category and is thus excluded from the KPI and associated SPTs.

The full methodology for KPI 1 can be found in Appendix I. Additional detailed descriptions and references to relevant legislative acts are available on the Environmental Agency of the Republic of Slovenia's website.<sup>35</sup>

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32 Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action (Text with EEA relevance). Available [here](#).

33 Commission Implementing Regulation (EU) 2020/1208 of 7 August 2020 on structure, format, submission processes and review of information reported by Member States pursuant to Regulation (EU) 2018/1999 of the European Parliament and of the Council and repealing Commission Implementing Regulation (EU) No 749/2014. Available [here](#).

34 Draft (in Slovenian) available [here](#).

35 Available [here](#) and [here](#).

## ***External Review Process for KPI 1: EU and UNFCCC involvement***

At the EU level, national GHG emissions inventories are reviewed annually in the context of the Governance of the Energy Union and Climate Action Regulation inventory review. The annual reviews ensure that adequate consideration is given to recalculations and emission trends over time. Comprehensive reviews of national GHG emissions inventories have been carried out in 2016 and 2020 – for all other years, an annual review was carried out. Prior to 2023 GHG emissions inventories were reviewed annually in the context of the “Effort Sharing Decision review”.

The EU review of greenhouse gas inventories comprises two stages. The first stage verifies the transparency, accuracy, consistency, comparability, and completeness of the national inventory data. If the first stage of the annual review reveals a significant issue such as overestimations or underestimations relating to a key category in a Member State’s inventory, a review team performs the second stage checks. Similarly, if during the first stage, the Member State does not provide a reliable estimate, the review team calculates the resulting technical corrections, in consultation with the concerned Member State, to correct the originally submitted estimates. The annual EU review lasts from January to April and covers Y-2 data. Comprehensive 5 yearly reviews will take place in 2027 and 2032 and are scheduled from April to August. They cover data from Y-6 to Y-2 (i.e., the comprehensive review in 2027 will cover data from 2021 to 2025, the review in 2032 will cover data from 2026 to 2030). The detailed procedure is described in article 38 of the Governance of the Energy Union and Climate Action Regulation and in the Governance of the Energy Union and Climate Action Regulation Commission Implementing Regulation.

In addition to this process, the GHG inventory report is also subject to the UNFCCC review described in Decision 13/CP.20.<sup>36</sup> This review of greenhouse gas inventories also comprises two stages. The initial assessment by the UNFCCC secretariat comprises a standardised set of data comparisons mainly based on the historical emissions data, aiming to examine that each Annex I Party has submitted a consistent, complete, and timely annual inventory in the correct format and to identify issues for further consideration during the review of individual inventories. At this stage, status reports for each Party are published, while assessment reports are available to both Parties and expert review teams.

The review of individual annual inventories involves a detailed examination of the data, methodologies, and procedures used in preparing the national inventory. Particular attention is paid to key categories, areas of the inventory where issues have been identified and recommendations made in previous reviews or stages of the review, progress in implementing planned improvements, or where recalculations or other changes have been reported. This is the most detailed review stage. Individual review reports are published for each Party. Three operational approaches may be used during the second stage of the technical review, namely desk reviews, centralised reviews, or in-country reviews. This review commences in August and ends in October, while the publication of the final review report requires additional time for coordination with the Party, corrections of errors and final proofreading.

<sup>36</sup> Guidelines for the technical review of information reported under the Convention related to greenhouse gas inventories, biennial reports and national communications by Parties included in Annex I to the Convention. Available [here](#).



## KPI 2: Share of Renewable Energy Consumed



**KPI definition and perimeter:** The share of renewable energy in gross final energy consumption within a calendar year.<sup>37</sup>

The renewable energy delivered to final consumers (industry, transport, households, services including public services, agriculture, forestry, and fisheries) is the numerator of this indicator. Renewable energy sources means energy from renewable non-fossil sources, namely: wind, solar (solar thermal and solar photovoltaic), geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas.<sup>38</sup>

The denominator is the gross final energy consumption of all energy sources, meaning the energy commodities delivered for energy purposes to industry, transport, households, services including public services, agriculture, forestry and fisheries, the consumption of electricity and heat by the energy branch for electricity, heat and transport fuel production, and losses of electricity and heat in distribution and transmission.<sup>39</sup> The resulting indicator is expressed as a percentage.

The KPI excludes the share of energy from renewable sources provided through the mechanism of statistical transfer (cooperation mechanism) of renewable energy from another EU Member State.

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<sup>37</sup> The KPI coverage is broader than simply the share of renewable electricity, covering all renewable energy consumed within Slovenia

<sup>38</sup> Renewable energy sources are as defined in RED II. Biofuels, bioliquids and biomass fuels that do not fulfil the sustainability and greenhouse gas emissions saving criteria laid down in Article 29 of the Directive shall not be taken into account. Nuclear energy is not defined as a renewable energy source under RED II.

<sup>39</sup> Gross final energy consumption is as defined in Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources ("RED II"). Available [here](#).

**Rationale and materiality:** Renewables are a key component of decarbonisation of electricity production, enhancing energy security, and promoting environmental sustainability. Slovenia recognises their importance, and has integrated them into its mid-term development strategy, climate change mitigation and adaptation strategy, and its international environmental commitments.

The increased use of energy from renewable sources also has a fundamental part to play in promoting the security of energy supply, sustainable energy at affordable prices, technological development and innovation as well as technological and industrial leadership while providing environmental, social and health benefits as well as major opportunities for employment and regional development, especially in rural and isolated areas, in regions or territories with low population density or undergoing partial deindustrialisation.

The KPI is also an indicator for monitoring progress towards renewable energy targets under the EU's Fit for 55 strategy under the European Green Deal.<sup>40</sup>

**SDG alignment:** SDG 7 *Affordable and clean energy*, SDG 13 *Climate Action*

**Baseline and baseline performance:** 2022, 22.94%

**Historical performance:**

**Table 2: The share of renewable energy in gross final energy consumption within a calendar year, 2020-2023**

	2020 <sup>41</sup>	2021	2022	2023
RES overall share (%)	25.00	25.00	25.00	25.07
... of which from cooperation mechanism (%)	0.860	0.36	2.06	0.00
<b>RES overall share excluding RES from the cooperation mechanism (%)</b>	<b>24.14</b>	<b>24.64</b>	<b>22.94</b>	<b>25.07</b>

*Source: Statistical office of the Republic of Slovenia, own calculations*

<sup>40</sup> Implemented by RED II.

<sup>41</sup> Data on the share of energy from renewable sources in gross final energy consumption from the reference year 2021 on are calculated based on the RED II, which replaced the Directive 2009/28/EC on the promotion of the use of energy from renewable sources ("RED I"). Therefore, data from 2021 onwards are not directly comparable with data up to 2020.

For more years of historical performance, see the Statistical Office of the Republic of Slovenia's website.<sup>42</sup>

**Calculation methodology and governance process:** Production of KPI 2 is governed by Regulation (EC) No 1099/2008 on EU energy statistics ("**Energy Statistics Regulation**"), which covers the entire process of collecting, transmitting, evaluating, and disseminating the data.<sup>43</sup>

Under this Regulation, Slovenia is required to compile KPI 2 from the following sources:

- I. specific surveys addressed to the primary and transformed energy producers, traders and distributors, transmission and distribution power network operators, importers and exporters of energy products;
- II. other surveys addressed to final energy users in the sectors of manufacturing industry, services sector, agriculture, and forestry, and households;
- III. other estimation procedures or other sources, including administrative sources, such as regulators of the electricity and gas markets.

Methodology and data sources for KPI 2 can be found in Appendix II. Detailed description for the individual areas of coverage is available on the website of the Statistical Office of the Republic of Slovenia.<sup>44</sup>

The share of energy from renewable sources in final energy consumption (%) is calculated based on the requirements from RED II, which replaced RED I.<sup>45</sup>

#### **External Review Process for KPIs 2 and 3: Eurostat involvement**

Eurostat conducts an annual assessment of the quality of reported data from several perspectives including their relevance, punctuality, accessibility, clarity and comparability.

Upon receiving the annual energy data Eurostat initiates a validation process whose purpose is to ensure a high level of quality in the final data. The validation is a binary decision-making procedure, culminating in either acceptance or refusal of the data. The annual reporting cycle remains incomplete until the data meet satisfactory quality standards and are formally accepted.

Every 5 years, Slovenia must provide Eurostat with a report on the quality of the data transmitted, as well as on any changes in methodology that have been made. These national reports are available on the webpage of the Statistical Office.<sup>46</sup> The aggregated results of the 5-year data quality reports, covering all reporting Member States, are available on the Eurostat webpage.<sup>47</sup>

<sup>42</sup> Available [here](#).

<sup>43</sup> Consolidated text: Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics (Text with EEA relevance). Available [here](#).

<sup>44</sup> Available [here](#) and [here](#).

<sup>45</sup> Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (Text with EEA relevance). Available [here](#).

<sup>46</sup> Available [here](#) and [here](#).

<sup>47</sup> Available [here](#).



## KPI 3: Energy Efficiency

**KPI definition and perimeter:** Final energy consumption within a calendar year.

Final energy consumption means all energy supplied to industry, to transport, to households, to public and private services, to agriculture, to forestry, to fishing and to other end-use sectors. Energy sources covered by this KPI may include coal, oil products, natural gas, heat, electricity, biofuels and waste, and renewable energy such as wind and solar. It excludes ambient energy and deliveries to the transformation sector and to the energy sector, as well as losses due to transmission and distribution.<sup>48</sup>

The Statistical Office of the Republic of Slovenia follows the International Energy Agency's definition of total final energy consumption, which includes the total final energy consumption of the energy sector, and non-energy use. To standardise the results with those of the NECP (which follows the Energy Statistics Regulation definition) those two subcategories are subtracted from the reported sum.

The KPI is expressed in tonne(s) of oil equivalent (toe).

**Rationale and materiality:** Improving energy efficiency is a key strategy for reducing overall energy consumption, lowering GHG emissions, and decreasing reliance on imported energy sources. By setting ambitious targets for energy efficiency, Slovenia not only enhances its energy security but also promotes innovation and cost savings in the energy sector, contributing to economic competitiveness and environmental sustainability. Efficient use of energy and natural resources is a priority and key measure of development and energy policy to increase competitiveness and decarbonise Slovenian industry and society.

Reducing energy consumption typically leads to a reduction in environmental pressures associated with the production and consumption of energy. It supports the achievement of the EU renewable energy and greenhouse gas targets, lowers emissions of air pollutants with its associated health benefits and enhances energy security.

**SDG alignment:** SDG 13 *Climate Action*

**Baseline and baseline performance:** 2022, 4,784.6 ktoe

**Historical performance:**

**Table 3: Final energy consumption within a calendar year, 2020-2022, kt of oil equivalent**

	2020	2021	2022	2023
<b>Total final consumption (International Energy Agency definition)</b>	4,503.5	4,825.5	4,819.0	4,572.8
Total final consumption - Energy sector	11.2	10.6	9.6	9.6
Total final consumption - Non-energy use	36.9	33.1	24.5	14.8
<b>Total Final Consumption (Energy Statistics Regulation definition)</b>	4,455.4	4,781.7	4,784.6	4,548.5

Source: Statistical office of the Republic of Slovenia, own calculation

<sup>48</sup> Final energy consumption is as defined in the Energy Statistics Regulation.

For more years of historical performance, see the Statistical Office of the Republic of Slovenia's website.<sup>49</sup>

**Calculation methodology and governance process:** Production of KPI 3, including its calculation methodology, is governed by the Energy Statistics Regulation, which covers the entire process of collecting, transmitting, evaluating, and disseminating the data.

Under this Regulation, Slovenia is required to compile KPI 3 from the following sources:

- I. specific surveys addressed to the primary and transformed energy producers, traders and distributors, transmission and distribution power network operators, importers and exporters of energy products;
- II. surveys addressed to final energy users in the sectors of manufacturing industry, services sector, agriculture, and forestry, and households;
- III. other estimation procedures or other sources, including administrative sources, such as regulators of the electricity and gas markets.

Methodology and data sources for KPI 3 can be found in Appendix II. Detailed descriptions for the individual areas of coverage are available on the website of the Statistical Office of the Republic of Slovenia.<sup>50</sup>

#### ***External Review Process for KPIs 2 and 3: Eurostat involvement***

Eurostat conducts an annual assessment of the quality of reported data from several perspectives including their relevance, punctuality, accessibility, clarity, and comparability. Upon receiving the annual energy data Eurostat initiates a validation process whose purpose is to ensure a high level of quality in the final data. The validation is a binary decision-making procedure, culminating in either acceptance or refusal of the data. The annual reporting cycle remains incomplete until the data meet satisfactory quality standards and are formally accepted.

Every 5 years, Slovenia must provide Eurostat with a report on the quality of the data transmitted, as well as on any changes in methodology that have been made. These national reports are available on the webpage of the Statistical Office.<sup>51</sup> The aggregated results of the 5-year data quality reports, covering all reporting Member States, are available on the Eurostat webpage.<sup>52</sup>

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49 Available [here](#).

50 Available here and [here](#).

51 Available [here](#) and [here](#).

52 Available [here](#).

## II. Calibration of Sustainability Performance Targets

### SPTs 1.1 and 1.2: Total Greenhouse Gas Emissions (by 2030)

**Target observation date:** 31 December 2030

**Sustainability Performance Target 1.1: 35% decrease of total GHG emissions by 2030 relative to 2005 baseline.** Calculated to absolute values the SPT represents a maximum of 13,387.28 kt CO<sub>2</sub> equivalent annual GHG emissions in 2030.

**Sustainability Performance Target 1.2: For step-down: 45% decrease of total GHG emissions by 2030 relative to 2005 baseline.** Calculated to absolute values the SPT represents a maximum of 11,327.70 kt CO<sub>2</sub> equivalent annual GHG emissions in 2030.



*The absolute SPTs above are intended solely for reference. In case of subsequent data revisions, especially revisions affecting the baseline, only the relative decrease of total GHG emissions is relevant and the absolute SPT will thus be recalculated in accordance with the Recalculation Policy set out in this Framework.*

The range between SPTs 1.1 and 1.2 reflects the uncertainty about operations of TEŠ in the immediate future, as reflected in Slovenia's final NECP targets. See the infobox on page 8 for more information.

**Target ambition:** The Government of the Republic of Slovenia has established having a climate-neutral circular economy as a top priority for economic development in the SDS 2030. Slovenia's long-term climate policy aims to achieve climate neutrality by 2050, as enshrined in Slovenia's Environmental Protection Act and Climate Strategy. This goal is in line with the Paris Agreement and involves reducing greenhouse gas emissions by 80-90% compared to 2005.

The Climate Strategy is based on principles of reducing emissions, improving energy efficiency, and climate justice. Objectives and measures will be grounded in the latest scientific knowledge and adhere to environmental protection laws, including sustainable development, integrity, and the polluter pays principle. Key principles also include respect for sectoral objectives, cost-effectiveness, and Slovenia's active role in the international community. Additionally, the strategy prioritises the conservation of habitats vital for biodiversity that are vulnerable to climate change and the preservation of cultural heritage.



Under the EU's regulation on binding annual greenhouse gas emissions reduction (2021-2030),<sup>53</sup> Slovenia is expected to reduce its GHG emissions in the sectors not covered by the emissions trading system (ETS) by 27% by 2030 compared to 2005 levels. Slovenia's updated NECP sets a higher target of reducing the non-ETS sectors' GHG emissions by at least 28% by 2030 compared to 2005. Slovenia's more ambitious trajectory for non-ETS emissions is also incorporated into its 2030 target for total GHG emissions.

Under ASCOR, Slovenia's SPT 1.1 and SPT 1.2 are assessed as being aligned with a 1.5°C fair share scenario.<sup>54</sup> This has been determined by calculating a 1.5°C carbon budget in 2030 from the C1 models of the IPCC's Sixth Assessment Report and adjusting the country's share of the global budget by three equally weighted variables: population, PPP-adjusted GDP per capita, and historical emissions.<sup>55</sup>

**Action plan and levers to achieve the SPT:** The Slovenian Climate Strategy aims to achieve net-zero emissions by 2050, in line with Regulation (EU) 2021/1119 ("**European Climate Law**").<sup>56</sup> The strategy sets sectoral objectives for 2040 and 2050, which must be incorporated into sectoral documents and plans.

Under the strategy, the horizontal guidelines applicable to all sectors prioritise greater material efficiency, promotion of low-carbon resources, energy efficiency, sustainable spatial development, sustainable construction, and digitalisation. Additionally, the Republic of Slovenia will ensure that its policies, measures, and investments align with the Paris Agreement commitments. To ensure the integration of climate policy into sectoral policies, Slovenia will enhance the verification of compliance with climate policy in documents, policies, and regulations, as well as the environmental impact assessment process.

In addition to this, the upcoming Slovenian Climate Act (*Podnebni zakon*) will set out policies and measures to reduce greenhouse gas emissions and adapt to climate change, including tools for compliance monitoring and economic incentives for green transition.

The European Union's Emissions Trading System ("**EU ETS**") is also a key component of European and Slovenian climate policy, designed to reduce emissions cost-effectively. The EU ETS sets a limit on emissions from the energy and industrial sectors, as well as aviation, which account for approximately 40% of the EU's total emissions. In Slovenia, stationary installations (e.g., power generation and manufacturing industry) emitted 4.9 MtCO<sub>2</sub> eq. in 2022 (equal to 30% of total GHG emissions in Slovenia), a 14.4% decrease from 2021 and 22.3% below pre-pandemic levels. The EU ETS has played a crucial role in achieving these reductions.

The 2023 revision of the ETS Directive has aligned the system with the EU's climate goals. Key changes include a tightened cap to reduce emissions by 62% by 2030, compared to 2005 levels, and the inclusion of maritime transport emissions from 2024. A new emissions trading system, ETS2, will be introduced in 2027 to cover emissions from buildings, road transport, and additional sectors, complementing other European Green Deal policies.

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<sup>53</sup> Regulation (EU) 2023/857 sets national GHG emission reduction targets for each EU Member State. Available [here](#).

<sup>54</sup> Available [here](#).

<sup>55</sup> Full details of ASCOR's methodology are available [here](#).

<sup>56</sup> Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999. Available [here](#).

To address the transport sector, which accounts for half of non-ETS GHG emissions, Slovenia will prioritise rail transport and sustainable mobility. This includes upgrading existing railway infrastructure, developing cycling and walking infrastructure, developing integrated public transport and promoting sustainable modes of transport. Slovenia will also look to reduce energy consumption in transport by promoting energy-efficient vehicles and the use of alternative fuels.

By doing so, Slovenia aims to reduce the carbon footprint of the transport sector and provide the population with easy, fast, and environmentally friendly transportation. By 2030, the aim is to reduce private car journeys and significantly increase the number of journeys on foot, bicycle, or public transport.

**Factors which may impact the achievement of the SPTs:** Reducing GHG emissions targets in the transport sector (the single largest sectoral source of GHG emissions in Slovenia) is a significant challenge, largely due to the industry's dependence on external factors. Traffic volumes are heavily influenced by a complex array of external factors, including population demographics, motorisation rates, settlement patterns, employment rates, economic growth, trade, and tourism. Transport demand is also linked to European socio-economic trends, which can be difficult to predict and control.

As a small country and transport nexus, situated at the center of some of Europe's most important traffic corridors, Slovenia is particularly vulnerable to these external influences, which can make it challenging to achieve GHG emissions targets. The country's internal transport system is also impacted by processes such as globalisation, which can lead to increased trade and economic activity, and subsequently, higher emissions. The fact that economic growth remains closely tied to traffic growth exacerbates the problem, as it has so far been difficult to decouple the two.

To mitigate the impact of such external factors on GHG emissions, it is essential to develop strategies that account for these influences and prioritise sustainable transport solutions.

### **SPTs 1.3 and 1.4: Total Greenhouse Gas Emissions (by 2033)**

**Target observation date:** 31 December 2033

**Sustainability Performance Target 1.3: 55% decrease of total GHG emissions by 2033 relative to 2005 baseline.** Calculated to absolute values the SPT represents a maximum of 9,268.12 kt CO<sub>2</sub> equivalent annual GHG emissions in 2033.

**Sustainability Performance Target 1.4: For step-down (105% of SPT 1.3): 57.75% decrease of total GHG emissions by 2033 relative to 2005 baseline.** Calculated to absolute values the SPT represents a maximum of 8,701.73 kt CO<sub>2</sub> equivalent annual GHG emissions in 2033.

*The absolute SPTs above are intended solely for reference. In case of subsequent data revisions, especially revisions affecting the baseline, only the relative decrease of total GHG emissions is relevant and the absolute SPT will thus be recalculated in accordance with the Recalculation Policy set out in this Framework.*

SPTs 1.3 and 1.4 fully reflect the expected emissions reductions from the planned coal phase-out by 2033 (also affecting TEŠ). See the infobox on page 8 for more information.

**Target ambition:** In addition to the target ambition for SPTs 1.1 and 1.2: Achievement of KPIs 1.3 and 1.4 is critically linked to coal phase-out and eventual shutdown and closure of TEŠ. In 2023 TEŠ emitted 2,745.9 kt CO<sub>2</sub> and generated 2,682.9 GWh of electricity (cca. 18.9% of all electricity generation in Slovenia in 2023). Excluding the 50% share of electricity generation from Krško Nuclear Power Plant

(Nuklearna elektrarna Krško, NEK) that is supplied to the Republic of Croatia as its co-owner, TEŠ's share of Slovenia's electricity generation increases to 23.3%. Of the countries with similar prominence of coal in national energy supply Slovenia's target for coal phase-out in 2033 is ambitious.<sup>57</sup>

**Action plan and levers to achieve the SPT:** *In addition to the action plan and levers to achieve the SPTs 1.1 and 1.2:* Slovenia aims to phase out coal by 2033. Slovenia's National Strategy for coal phase-out foresees cessation of mining and use of coal for electricity generation.

**Factors which may impact the achievement of the SPTs:** *In addition to the factors which may impact the achievement of the SPTs 1.1 and 1.2:* TEŠ is one of the biggest electricity producer, as well as the single biggest GHG emitter in Slovenia. In line with Slovenia's National Strategy for coal phase-out the complete shutdown and closure of TEŠ is planned for 2033 at the latest.

While Slovenia is committed to the complete coal phase-out by 2033, given TEŠ's significance in domestic electricity generation, a significant delay or failure to introduce or promote other electricity generation sources and/or a serious disruption in EU electricity markets, with persistent inability to import electricity, could necessitate restart of electricity generation at TEŠ.

## SPTs 2.1 and 2.2: Share of Renewable Energy Consumed

**Target observation date:** 31 December 2030

**Sustainability Performance Target 2.1:** 33% share in total energy consumption in 2030.

**Sustainability Performance Target 2.2:** *For step-down (105% of SPT 2.1):* 34.65% share in total energy consumption in 2030.

**Target ambition:** As part of the 2023 requirement to update its National Energy and Climate Plan to mirror changes to European climate legislation and targets, Slovenia has revised and elevated its previous target of achieving at least 27% share of renewable energy in total energy consumption by 2030, as initially outlined in the 2020 NECP and the SDS 2030, to the current target of at least 33%. The update was informed by the latest expert evidence and a thorough assessment of specific national circumstances including a public consultation. As a result, Slovenia has established development-oriented, ambitious, and attainable national and sector-specific renewable energy consumption targets for 2030.

**Action plan and levers to achieve the SPT:** Slovenia will promote the use of renewable energy through appropriate incentives. Particular attention will be paid to accelerating the deployment of renewable electricity sources, accomplished by introducing and expanding complementary activities that facilitate the installation of renewable energy sites in environmentally acceptable areas. Additionally, the deployment of solar panels on public sector buildings will be accelerated.

Provided the planned policies and actions are successfully implemented, Slovenia is targeting significant increases in the share of renewable energy in final consumption for 2030, including:

- I. 55% in the electricity sector
- II. 45% in the heating and cooling sector
- III. 26% in the transport sector

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<sup>57</sup> See, for example: International Energy Agency: *Phasing Out Unabated Coal: Current Status and Three Case Studies (2021)*. Available [here](#).



The share of renewable energy consumed is expected to increase significantly after 2025 as a result of increases in electricity generation from renewable energy sources, as well as a reduction in gross final energy consumption.

Note also the Renewable Energy Sources Act (*Zakon o spodbujanju rabe obnovljivih virov energije, ZSROVE*)<sup>58</sup> which regulates the establishment of priority areas for the deployment of RES installations, the specifics of spatial planning and the authorisation of installations and facilities generating electricity from renewable energy sources, as well as the Promotion of the Use of Renewable Energy Sources Act (*Zakon o uvajanju naprav za proizvodnjo električne energije iz obnovljivih virov energije, ZUNPEOVE*),<sup>59</sup> regulating the state and municipal policy implementation in the field of the RES use, setting up binding targets for the share of energy from RES in the gross final consumption in the Republic of Slovenia, as well as measures to achieve these targets and financing thereof.

**Factors which may impact the achievement of the SPTs:** Slovenia obtained technical assistance from the European Commission after the submission of the NECP 2020 – project RES Slovenia between 2021 and 2023 – on the potential for electricity generation of RES in Slovenia.<sup>60</sup>

A comprehensive analysis and review of the further potential of RES for electricity generation was carried out in cooperation with a number of relevant stakeholders. This analysis covered the deployment potential of solar and hydropower plants above 100 kW and the deployment potential of wind power plants above 1 MW installed capacity. As part of the sensitivity analysis, 13 relevant protection categories in the areas of nature protection, water protection, quality of life and other categories were identified and analysed for each of the RES technologies considered separately.

There are 355 Natura 2000 sites in Slovenia, covering 37% of the territory (amongst the highest in the EU). Many sites suitable for renewable energy deployment (mainly hydro and wind power plants) are under Natura 2000 protection, thereby limiting Slovenia's opportunities compared to some other EU countries.<sup>61</sup>

More specifically, the results showed that of the RES technologies considered, taking into account the state of the law at the cut-off date of 30 June 2022, only rooftop solar (4257 GWh/year) and ground-mounted solar (31.63 GWh/year) are identified as having a potential for no significant impact on the protection categories (score 0) in areas without risk of significant impact (score 0); there are no other technologies without risk. The total potential of all RES in areas of low risk of significant impact on the protection categories (rating 1) is only 992 GWh/year (representing 1.7% of the points in the RES share). Thus, with the exception of solar power plants, the vast majority of the identified RES potential, is located in areas of high and very high risk of significant impact on the protection categories. The results thus show that only 0.44% of all identified RES potential is located in no-risk areas and only 0.01% in lower-risk areas, or that 99.55% of all identified potential is located in higher- and very high-risk areas.

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58 Available (in Slovenian) [here](#).

59 Available (in Slovenian) [here](#).

60 More information available [here](#).

61 Ministry of Environment, Climate and Energy, Ministry of Natural Resources and Spatial Planning, EY (2023). *Facilitating RES deployment in electricity sector of Slovenia: Final progress report*. Available [here](#).

Almost two thirds (61.8%) of final energy consumption in industry in 2020 was consumed in five energy-intensive industries: production of metals (23.4%), production of paper and paper products (12.7%), production of non-metallic mineral products (12.2%), production of chemicals and chemical products (8.9%) and production of pharmaceutical raw materials and preparations (4.6%).<sup>62</sup> If production of pharmaceutical raw materials and preparations among the energy-intensive industries were also considered, it could be observed that in 2020 energy-intensive industries accounted for almost a third (32.9%) of the value added in Slovenian industry (excluding the production of pharmaceutical raw materials and preparations, 14.3%), placing Slovenia third in the EU for this indicator.<sup>63</sup> The technologies available on the market in these sectors do not yet allow for a greater use of RES.

The above constraints on the production of renewable electricity, combined with Slovenia's high share of transport in gross energy final consumption, and high share of energy-intensive industry, makes it key for Slovenia to increase the use of biofuels to achieve the SPTs. However, the use of biofuels is limited by various standards, with the production of biofuels in a sustainable manner also posing a significant challenge, especially for the first generation thereof. A potential lack of availability of sufficient sustainable biofuel, in spite of efforts to promote their use, may therefore also impact the achievement of the SPTs.

More information on the relevant national circumstances affecting the introduction of renewable energy sources in Slovenia is available in the 2024 NECP in Chapter 2.1.2, sub-chapter *State of RES and relevant national circumstances*.

## SPTs 3.1 and 3.2: Energy Efficiency

**Target observation date:** 31 December 2030

**Sustainability Performance Target 3.1:** Final energy consumption in 2030 will not exceed 4,320 ktoe, representing a 9.71% decrease from the 2022 baseline.

**Sustainability Performance Target 3.2:** *For step-down* (95% of SPT 3.1): Final energy consumption in 2030 will not exceed 4,104 ktoe, representing a 14.22% decrease from the 2022 baseline.

*The relative decrease of final energy consumption from the baseline above is intended solely for reference. In case of subsequent data revisions, especially revisions affecting the baseline, only the absolute level of final energy consumption in 2030 is relevant and the relative decrease in final energy consumption from the 2022 baseline will thus be recalculated in accordance with the Recalculation Policy set out in this Framework.*

**Target ambition:** Slovenia's objective is to improve energy efficiency by 2030 at least in line with the indicative target set in the latest amendment to the Energy Efficiency Directive. Slovenia set its energy efficiency target in the form of an energy end-use level in 2030 in line with the Commission recommendation following the application of a gap-filling mechanism of 4.32 Mtoe.

**Action plan and levers to achieve the SPT:** Slovenia will continue to implement the mandatory energy savings scheme among final customers through the implementation of energy services and measures by energy suppliers and the Slovenian Environmental Public Fund.<sup>64</sup> The scheme will also be updated in line with the amendments to Directive (EU) 2023/1791 (the “**Energy Efficiency Directive**”).<sup>65</sup>

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<sup>62</sup> Source: Statistical Office of the Republic of Slovenia

<sup>63</sup> Source: Eurostat

<sup>64</sup> Decree on the Provision of Energy Savings, Official Gazette of the Republic of Slovenia No 96/14. Available [here](#).

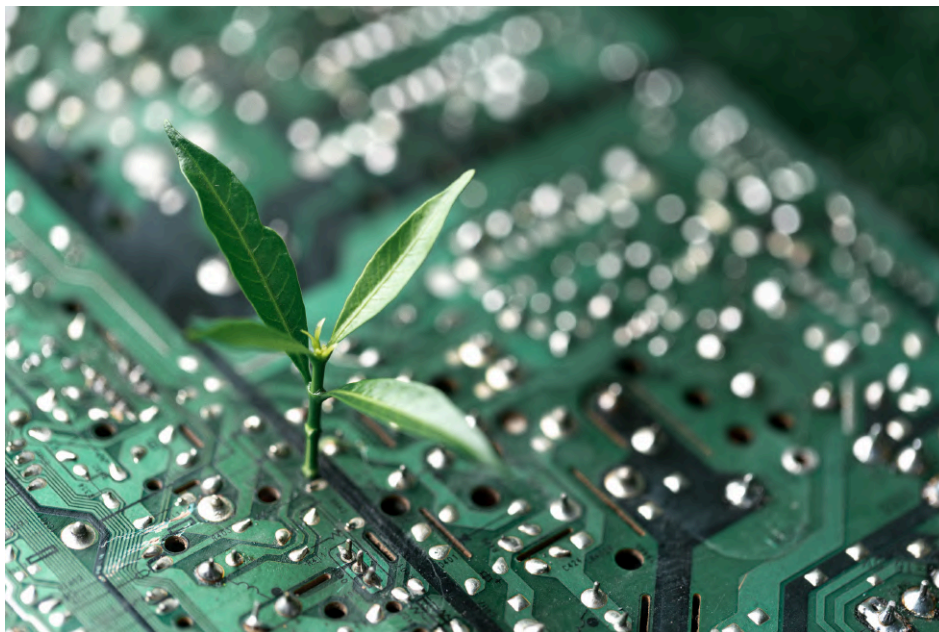
<sup>65</sup> Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (recast) (Text with EEA relevance). Available [here](#).

The NECP envisions a climate-neutral energy future in buildings by 2050, achieved through significant improvements in energy efficiency and increased use of renewable energy sources. The plan also aims to make Slovenia a leader in sustainable construction. Slovenia is therefore targeting a 15% reduction in final energy consumption in buildings by 2030 compared to 2020, and a minimum 70% reduction in greenhouse gas emissions in buildings by 2030 compared to 2005. In the public sector, the target is to decrease final energy consumption by 1.9% annually compared to the baseline year. The goal is also to annually renovate 3% of the total floor area of buildings in the public sector. The revision of the Long-Term Strategy for Promoting Energy Renovation of Buildings by 2050 (*Dolgoročna strategija energetske prenove stavb, DSEPS*)<sup>66</sup> is underway. The strategy will define more detailed sector-specific goals in line with the requirements of the Energy Efficiency Directive and decarbonisation targets. With this strategy, Slovenia will also aim to achieve a 3% annual renovation rate of public sector buildings.

The country has assessed the potential for efficient heating and cooling and drafted a comprehensive indicative strategy. As per the updated NECP, Slovenia intends to strengthen local planning, provide financial and technical assistance, and promote the development of community systems, including accelerated renovation, efficiency gains, and greening as well as the expansion and construction of new district heating and cooling systems in areas with a higher heat and cold demand density.

Additionally, Slovenia will focus on:

- I. ensuring energy efficiency for all, including energy-poor households,
- II. providing active support to industry to increase efficiency, competitiveness, and the adoption of green technologies and the circular economy.



Note also the Act on Efficient Use of Energy (*Zakon o učinkoviti rabi energije, ZURE*)<sup>67</sup> which sets out measures to promote energy efficiency, measures to increase energy efficiency and measures to improve the energy performance of buildings.

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66 Available (in Slovenian) [here](#).

67 Available (in Slovenian) [here](#).



**Factors which may impact the achievement of the SPTs:** Transport has the greatest impact on the long-term management of primary and final energy consumption, which, due to its high volatility, expected growth trends and its high share in energy consumption (it accounts for around 40% of total final energy consumption), could seriously jeopardise the achievement of the 2030 targets if the measures are not implemented.

Reducing overall energy use in the transport sector is a significant challenge. Traffic volumes are heavily influenced by a complex array of external factors, including population demographics, motorisation rates, settlement patterns, employment rates, economic growth, trade, and tourism. Transport demand is also linked to European socio-economic trends, which can be difficult to predict and control.

Slovenia is small country and transport nexus, situated at the center of some of Europe's most important traffic corridors – fuel consumption by transit cargo and passengers counts towards Slovenia's energy use if said fuel is sold within its borders. Such fuel consumption disproportionately impacts Slovenia's overall energy consumption. The country's internal transport system is impacted by processes such as globalisation, which can lead to increased trade and economic activity. Economic growth remains closely tied to traffic growth exacerbates the problem.

In relation to energy efficiency in buildings, any circumstances that would hinder the progress of building renovations, not only those owned directly or indirectly by Slovenia, but also privately owned buildings, would negatively impact the achievement of the SPTs, for example a shortage of qualified contractors, high prices for construction material or unreliable supply thereof.

Economic growth is also linked to total energy use and remains difficult to decouple therefrom. An overall reduction in energy use could prove difficult in the event of significantly higher-than-anticipated economic growth by 2030.



### III. Bond Characteristics

Sustainability-Linked Bonds will incorporate one or several of the KPIs and SPTs outlined in the *Selection of Key Performance Indicators* and *Calibration of Sustainability Performance Targets* sections (as specified in the relevant documentation for each Sustainability-Linked Bond).

Failure by the Republic of Slovenia to satisfy one or more of the SPTs as of the relevant target date (as identified in the relevant documentation) or to publicly provide the reporting and verification of the SPT(s) at the target observation date could trigger a step-up coupon adjustment or premium payment.

Conversely, achievement of one or more of the SPTs as of the relevant target date (as identified in the relevant documentation) may result in a step-down coupon adjustment or coupon discount.

The applicable KPIs, SPTs, coupon step-up, step-down, premium payment amount or coupon discount, as applicable, will be specified in the relevant documentation of the specific transaction.

#### Recalculation policy

The baseline(s) and / or SPT(s) may be recalculated in good faith by Slovenia to reflect any material:

- i. Changes in the calculation methodology for any KPI
- ii. Discovery of significant data errors or material improvement in data accessibility
- iii. Changes to applicable supranational laws, regulations, rules, or policies, such as those emanating from the European Union, that may have a material impact on the Baseline(s) or ability of Slovenia to achieve the applicable SPT(s)
- iv. Updates increasing the ambition of the SPTs for the KPIs and SPTs outlined in this Framework

A recalculation may be performed in cases where any such change, taken individually or in aggregate, has a significant impact on the KPI(s)'s baselines or the ambitiousness of the SPT(s), and provided that an external verifier has independently confirmed that the proposed revision is in line with the initial level of materiality of the KPI(s) and/or level of ambition of the SPT(s). For the avoidance of doubt, recalculations will be performed in good faith at Slovenia's discretion.

Any such change will be communicated and notified as soon as reasonably practicable by Slovenia in accordance with the conditions detailed in the specific documentation of the relevant Sustainability-Linked Bond.

## IV. Reporting

Slovenia will publish and keep easily accessible annual Sustainability-Linked Bond Progress Reports on the Ministry of Finance's website<sup>68</sup>. The reports will contain quantitative and/or qualitative information on the KPIs including:

- I. the latest information on the KPI performance levels, the proportion of the target achieved, as well as the evolution of each KPI's performance over time;
- II. any information enabling investors to monitor the level of ambition of the SPTs;
- III. qualitative or quantitative explanations of the contribution of the main factors behind the evolution of the KPIs, including information on the levers actioned or means deployed towards each SPT, where relevant;
- IV. any re-assessments of KPIs, restatement of SPTs, and/or pro-forma adjustments of baselines;
- V. when feasible and possible: illustration of the positive sustainability impacts of the performance improvement.

These reports will be published within 36 months after each year-end. Slovenia will provide a qualitative report where the data on a particular KPI is not available.



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<sup>68</sup> Ministry of finance, Treasury directorate, Investor relations. Available [here](#).

## V. Verification

### Pre-issuance verification

This framework has been reviewed by S&P Global, who has provided a Second-Party Opinion on the alignment of the Framework and the associated documentation with the ICMA Sustainability-Linked Bond Principles 2024, as well as an assessment of the relevance of selected KPIs and the ambition of the proposed SPTs. The Second-Party Opinion is available on the Ministry of Finance's website<sup>69</sup>.

### Post-issuance verification

Reported KPI performance and input data are subject to reviews by the European Union, UNFCCC and/or Eurostat.

Slovenia is also opting to obtain an additional annual post-issuance verification report for the purposes of reporting on the progress against the SPTs. The external verification will be conducted for each KPI at the reporting date. These reports will be published on the Ministry of Finance's website

### Amendments to this Framework

As the Sustainability-Linked finance market continues to evolve, Slovenia's Framework may be subsequently revised or updated to remain consistent best market practices and regulatory requirements. Any material revision of the Framework will be subject to a new Second Party Opinion.

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<sup>69</sup> Ministry of finance, Treasury directorate, Investor relations. Available [here](#).



## Appendix I: KPI 1 – methodology description<sup>70</sup>

- ▶ **Data collection methodology for KPI 1:** data are expressed in kilotonnes of CO<sub>2</sub> equivalent, with or without emissions from land use, land use change and forestry.
- ▶ **Data processing methodology for KPI 1:** Most of the input data for the calculation of emissions are obtained from the SURS (*Statistični urad Republike Slovenije*, Statistical Office of the Republic of Slovenia) database, mainly data on fuel consumption and associated calorific values, and data from agriculture (number of animals, amount of crops and fertiliser consumption). Data on the vehicle fleet and kilometres travelled for the calculation of emissions from road transport are obtained through the Ministry of the Interior and the Road Directorate of the Republic of Slovenia. Other input data is obtained from the ARSO databases. These are mainly data related to emissions trading and waste management. To a lesser extent, data are also obtained on the basis of individual agreements with emitters or consumers. The data are collected annually and are also revised when necessary.

GHG emissions are calculated according to the IPCC methodology developed under the UN Climate Change Convention. GHG emission inventories have been compiled based on the IPCC methodology (IPCC 2006 amended by 2019 Refinement<sup>71</sup>), using different levels of complexity (Tiers) depending on the significance of the source and the data available. For the estimation of emissions from fuel consumption, national emission factors were used for CO<sub>2</sub> emissions from domestic lignite and from natural gas, whereas default IPCC emission factors were primarily used for other fuels. However, with the inclusion of larger installations in the Emissions Trading Scheme, installation-specific CO<sub>2</sub> emission factors have also been determined for other fuels since 2005, notably for various types of coal, pet coke and waste. Fugitive CO<sub>2</sub> emissions from the power sector are taken into account through emissions from flue gas desulphurisation in thermal power plants and cement works. They are calculated on the basis of carbonate consumption data. Emission factors for fugitive CO<sub>2</sub> and CH<sub>4</sub> emissions in the mining sector have been determined on the basis of measurements in Slovenian coal mines, and also include estimates of CH<sub>4</sub> emissions from closed and abandoned coal mines. The new IPCC methodology has made it possible to determine fugitive emissions from the transport and distribution of natural gas from the fuel sold using default emission factors. Emissions from industrial processes are mostly determined using data obtained directly from manufacturers or from emissions trading and using national emission factors, while emissions from product use are calculated from statistical data and data from the F-Gas database. In agriculture, methane emissions from enteric fermentation in cattle have been determined in detail. For manure management emissions, a more detailed approach has been applied for pig and cattle farming. For N<sub>2</sub>O emissions from manure management and indirect emissions from livestock manure management, the input data obtained from the methane emissions assessment are used for N<sub>2</sub>O emissions from manure management and indirect emissions from livestock manure management. For N<sub>2</sub>O emissions, the IPCC default factors determining the conversion of nitrogen to N<sub>2</sub>O are used. Methane emissions from solid waste management are determined using a first-order method that takes into account the temporal dynamics of methane release.

The new methodology also determines emissions from composting and incineration. Methane emissions from wastewater are determined using data on treatment rates, while N<sub>2</sub>O emissions are determined using data on protein consumption in the human diet.

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<sup>70</sup> Summarised from [here](#).

<sup>71</sup> Available [here](#).

## Appendix II: Sources and methods for data collection for KPIs 2 and 3<sup>72</sup>

### Data are collected annually with the following surveys:

- ▶ **E1-EE/L** – Electricity and heat production with technical information on energy devices. The survey collects data on production (by energy source), consumption and sale of electricity and heat, on fuel consumption as well as on types, number and power of engines that drive generators. The data are obtained by questionnaires sent by mail (annual questionnaire on the electricity and heat production) and from the administrative source managed by Borzen.
- ▶ **E3-TOP/L** – Heat supply. The survey collects data on production of heat by energy source, on purchase of heat, on fuel consumption in heat only plants, on distribution of heat as well as on heat pipelines. The data are obtained from the administrative source managed by Energy Agency.
- ▶ **E4-EEP/L** – Electricity transmission. The survey collects data on purchase, transmission, import, export of electricity and on losses in transmission grid. The data are obtained by questionnaires sent by mail (annual questionnaire on the electricity transmission).
- ▶ **E5-EED/L** – Electricity distribution. The survey collects data on electricity and fuel consumption. The data on electricity distribution are obtained from the administrative source (EPOS) managed by is the Ministry of the Environment, Climate and Energy – the Energy Directorate.
- ▶ **E8-NPT/L** – The survey collects data on petroleum products trading, sale to trade companies, energy sector, manufacturing and mining sector, construction sector, road and rail transport, households, and other sectors. The data are obtained by questionnaires sent by mail (annual questionnaire on the petroleum products trade).
- ▶ **E9-PL/L** – Gas supply. The survey collects data on import, export, purchase, own use and losses and structure of sale of natural gas and liquefied petroleum gas. The data are obtained by questionnaires sent by mail (annual questionnaire on the gas supply).
- ▶ **E11-TG/L** – Coal extraction. The survey collects data on production, sale and export of brown coal and lignite. The data are obtained by questionnaires sent by mail (annual questionnaire on the coal extraction).
- ▶ **E-PE/L** – Consumption of energy, fuels, and selected oil derivatives. The report includes fuel consumption also for production of electricity and heat for sale. The data in this survey are obtained by online questionnaire (consumption of energy, fuels, and selected oil derivatives). Data for reporting units with a certain activity according to the NACE Rev. 2 (A01, A02, and D35) are obtained from other statistical surveys (KME-PMG, E1-EE/L and E5-EED/L). The KME-PMG survey provides data on energy consumption in agriculture and forestry, by type of energy source. Data from these statistical surveys are obtained with the paper questionnaire. Aggregated data on the consumption of certain energy sources for activities A01 and A02 (NACE Rev.2) are obtained from ARSO. Data on electricity consumption for activities A, C33, D, E and F (NACE Rev.2) are obtained from the Operator of the combined transmission and distribution power network (ELES).
- ▶ **E-RES** – Energy consumption in the services sector. The Survey collects data on energy consumption in the services sector by type of energy source and data on the use of alternative technologies. The data in this survey are obtained by online questionnaire (energy consumption in the services sector).

- ▶ **APEGG** – Energy consumption in households. The data in this survey are obtained by modelling. The Jožef Stefan Institute (IJS) also participates in the survey, namely by preparing a model of energy consumption in households by which data on energy consumption by end use and type of energy source, the consumption of electricity, types of space and water heating systems and energy sources for them are calculated. Input data for the model are the result of the survey Household energy consumption (which is carried out by SURS every 4 years), data on energy supply, which are collected by the above-mentioned surveys in the field of energy, and data from various administrative sources (Eco Fund, Geological Survey of Slovenia) obtained by the Jožef Stefan Institute – Energy Efficiency.
- ▶ **Renewable energy** –The report collects data on renewable energy sources (wood biomass, biogas, wind energy, solar energy, geothermal energy, etc.). The data in this survey are obtained by the above-mentioned questionnaires sent by mail, by combined (web and field) survey combined with modelling (APEGG) and from the administrative sources (EPOS, Geological Survey of Slovenia, Borzen).
- ▶ **E3-TOP/L** – Heat supply. Data are obtained from an administrative source, which is the Energy Agency. The Energy Agency, acting under public authorisation, carries out the administrative and other tasks specified in the Energy Act, which determine the competences of the national energy regulators, or in general act of the agency adopted on the basis of the energy legislation.
- ▶ **APEGG** is a sample survey in which dwellings occupied by private households are chosen. SURS does not obtain data for APEGG from the administrative sources. The Jožef Stefan Institute - Energy Efficiency Centre, itself obtains data from administrative sources and these are the input data for the model of energy use in households.

## Disclaimer

The information and opinions contained in this Framework are provided as at the date of this document and are subject to change without notice. Slovenia does not assume any responsibility or obligation to update or revise such statements, regardless of whether those statements are affected by the results of new information, future events or otherwise.

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No representation is made as to the suitability of any Slovenia Sovereign Sustainability-Linked Bonds to fulfil sustainability criteria required by prospective investors. Potential purchasers of Slovenia Sovereign Sustainability-Linked Bonds should determine for itself the relevance of the information contained or referred to in this Framework or the relevant bond documentation for such Slovenia Sovereign Sustainability-Linked Bonds regarding the appropriateness of KPIs and ambitiousness of SPTs, and their purchase of Slovenia Sovereign Sustainability Bonds should be based upon such investigation as it deems necessary.

Slovenia has set out its intended policy and actions in this Framework in respect of KPIs and associated SPTs, and investor reporting, in connection with Slovenia Sovereign Sustainability-Linked Bonds. However, it will not be an event of default or breach of contractual obligations under the terms and conditions of any Slovenia Sovereign Sustainability-Linked Bonds if Slovenia (including any government body or agency) fails to adhere to this Framework, whether by failing (due to a lack of reliable information and/or data or otherwise) to provide investors with reports on KPIs and associated SPTs as anticipated by this Framework, or otherwise.

In addition, it should be noted that the proceeds from the issuance of the Slovenia Sovereign Sustainability-Linked Bonds will not be earmarked for specific projects, and the use of proceeds may not be reported.

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REPUBLIC OF SLOVENIA

