

GENERAL FRAMEWORK FOR THE INTEGRATED NATIONAL ENERGY AND
CLIMATE PLAN

Part 1

General framework

SECTION A: INECP

1. OVERVIEW FOR THE ADOPTION OF THE PLAN

1.1. Contents

- i. Political, economic, environmental and social context of the plan
 - ii. Strategy related to the five areas from Article 5 of this Rulebook
 - iii. Tabular presentation of key objectives, policies and measures of the plan
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1.2. Overview of the current situation regarding policies

- i. National energy system and the policy context of the national plan
Current energy and climate policies and measures related to the five areas referred to in Article 5 of this Rulebook
 - ii. Key issues of cross-border importance
 - iii. Administrative structures for the implementation of national energy and climate policies
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1.3. Consultations and participation of national entities and entities of the Energy Community and the result of the consultations

- i. Participation of the national parliament
 - ii. Participation of local and regional bodies
 - iii. Consultations with stakeholders, including social partners, and the involvement of civil society and the general public
 - iv. Consultations with other members of the Energy Community
 - v. Interactive procedure with the Secretariat of the Energy Community
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1.4. Regional cooperation in the development of the plan

- i. Elements subject to joint or coordinated planning with other members of the Energy Community
- ii. Explanation regarding how regional cooperation is considered in the plan

2. NATIONAL GOALS

2.1. Area: decarbonization

2.1.1. Greenhouse gas emissions and removals,

- i. Elements referred to in Article 5, item 1), sub-item (1) of this Rulebook,
- ii. where appropriate, other national targets that are in line with the Paris Agreement, the law governing climate changes, the law governing energy, public policy documents relating to the aforementioned laws regarding the reduction of greenhouse gas emissions, other general and specific objectives, including sectoral targets and targets for adaptation to changed climatic conditions, if available;

2.1.2. Energy from renewable sources

- i. Elements referred to in Article 5, item 1) sub-item (2) of this Rulebook,
Consistency with long-term strategies needs to be ensured,
- ii. Estimated pathways for the sectoral share of energy from renewable sources in final energy consumption from 2022 to 2030 in the electricity sector, heating and cooling sector and the

transport sector,

- iii. Estimated pathways of technologies for obtaining energy from renewable sources, which the Republic of Serbia plans to use in order to achieve overall and sectoral pathways for energy from renewable sources from 2021 to 2030, including the expected final gross energy consumption by technology and sector, expressed in Mtoe and the total planned installed capacity (broken down into new and renewed capacities) by technology and sector, expressed in MW,
 - iv. Estimated pathways of demand for bioenergy, broken down into heat and electricity, as well as transport, and pathways of biomass supply by raw materials and origin (distinction between domestic production and imports). For forest biomass, assessment of its source and impact on the drop in the forestry and other land use sector,
 - v. If applicable, other national pathways and objectives, including long-term and sectoral ones (e.g., share of renewable energy in district heating, use of renewable energy in buildings, renewable energy produced by cities, renewable energy source communities and consumers of own renewable energy, energy obtained from the sludge received from waste water treatment).
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2.2. Area: energy efficiency

- i. Elements referred to in Article 5, item 2) of this Rulebook
 - ii. Contains indicative key stages for 2030, 2040 and 2050, measurable indicators of progress, assessment of expected savings and benefits, and their contribution to achieving energy efficiency goals, as set out in the long-term strategy for renovation of the national fund of residential and non-residential buildings (public and private),
 - iii. If applicable, other objectives, including long-term objectives or strategies and sectoral objectives, and objectives in areas such as energy efficiency in the transportation sector and energy efficiency in relation to heating and cooling.
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2.3. Area: energy security

- i. Elements referred to in Article 5, item 3) of this Rulebook
 - ii. National targets regarding the increase: diversification of energy sources and provision from third countries in order to increase the resilience of regional and national energy systems,
 - iii. If applicable, national targets for reducing the dependence on energy imported from third countries, in order to increase the resilience of national and regional energy systems,
 - iv. National targets for increasing the flexibility of the national energy system, in particular with regard to the use of domestic energy sources, demand management and energy storage.
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2.4. Area: internal energy market

2.4.1. Electricity interconnection

The level of electricity interconnection that the Republic of Serbia plans to achieve in 2030 is determined in close cooperation with the Contracting Parties to the Energy Community and/or European Union member states, i.e., based on the results of the process of identification of systemic needs, conducted within the process of drafting a pan-European ten-year development plan, the results of mutual harmonization with the neighbouring transmission system operators and the techno-economic considerations based on the cost-benefit analysis, in accordance with the ENTSO-E methodology, and taking into account the following indicators of urgency of action:

- i. the differences in wholesale market prices that exceed the indicative threshold of 2 EUR/MWh between countries, regions or trade zones,
- ii. rated transmission capacity of connecting lines below 30% of peak load,
- iii. rated transmission capacity of connecting lines below 30% of the installed production capacity from renewable sources.

For each new interconnector, a cost-benefit analysis must be carried out in relation to

social-economic and environmental aspects, and it can only be realized if the possible benefits outweigh the costs.

2.4.2. Energy transmission infrastructure

i. Key projects for electricity transmission and gas transport and, where appropriate, modernization projects, which are necessary to achieve the objectives within the five areas referred to in Article 5 of this Rulebook,

ii. If applicable, major infrastructure projects envisaged, other than the Projects of Energy Community Interest (PECI) and Projects of Mutual Interest (PMI).

2.4.3. Market integration

i. National targets related to other aspects of the internal energy market, such as increasing the flexibility of the system, especially in relation to the promotion of market prices of electricity, in line with the relevant sectoral law, market integration and pairing with the aim of trying to increase the market capacity of existing interconnectors, smart grids, aggregation, demand management, storage, distributed energy production, delivery, re-delivery and service limitation mechanisms and real-time price-related signals, including the timeframe for achieving the targets,

ii. If applicable, national targets related to the non-discriminatory participation of renewable energy sources, consumption and storage management, inter alia, through aggregation, in all energy markets, including the timeframe for achieving the targets,

iii. If applicable, national targets in terms of ensuring that the consumers participate in the energy system and that they benefit from their own production and new technologies, including smart meters,

iv. National targets in terms of ensuring the adequacy of the electricity system as well as in terms of the flexibility of the electricity system with regard to energy production from renewable sources, including the timeframe for achieving the targets,

v. If applicable, national targets for the protection of energy consumers and the improvement of competitiveness in the retail market of the electricity sector.

2.4.4. Energy poverty

If applicable, national targets in terms of energy poverty, including the timeframe for achieving the targets.

2.5. Area: research, innovation and competitiveness

i. National targets and targets for funding public and, if applicable, private research and innovation related to the five areas referred to in Article 5 of this Rulebook, including, if applicable, the timeframe for achieving the targets,

ii. If applicable, the national targets for 2050, related to the promotion of clean energy technologies and, where appropriate, national targets that include long-term targets (2050) for the use of low-carbon technologies, including targets for the decarbonisation of energy-intensive industrial sectors and industrial sectors with high carbon emissions and, if applicable, targets in terms of infrastructure for the storage and transport of carbon,

iii. If applicable, national targets in terms of competitiveness.

3. POLICIES AND MEASURES

3.1. Area: decarbonization

3.1.1. Greenhouse gas emissions and quantities removed

i. Policies and measures for achieving the goal at the level of the economy, determined in accordance with the binding regulations of the Republic of Serbia, which include all key sectors that contribute the most to greenhouse gas emissions and sectors that contribute to eliminating

these emissions, with forecasts in terms of the long-term vision and the long-term goal to become a low-emission economy and to achieve a balance between the emissions and the removals,

- ii. If relevant, regional cooperation in this area,
- iii. Without prejudice to the applicability of the rules on state aid, financial measures in this area at the national level.

3.1.2. Energy from renewable sources

- i. Policies and measures for achieving the national contribution to the binding target at the level of the Energy Community for 2030 in terms of energy from renewable sources and pathways referred to in Article 6, item 1) sub-item (2) of this Rulebook and, if applicable and available, elements from item 2.1.2 of this Annex, including sector-specific measures and technology-specific measures,
- ii. If relevant, special measures for regional cooperation, as well as a possibility, an estimated surplus of production from renewable energy sources that could be transferred to other Contracting Parties to the Energy Community and/or members of the European Union in order to achieve the national contribution and the pathways referred to in item 2.1.2 of this Annex,
- iii. Special measures for financial support, if applicable, for the improvement of production and the use of energy from renewable sources in electricity, heating, cooling and transport,
- iv. If applicable, the assessment of support for electricity from renewable sources which is supposed to be carried out in accordance with the European Union regulations,
- v. Special measures for the introduction of one or more focal points, the rationalization of administrative procedures, provision of information and professional training as well as easier acceptance of agreements on the purchase of energy.

A summary of policies and measures based on the incentive framework that the state must establish in order to encourage and facilitate the development of own consumption and the development of the Renewable Energy Community,

- vi. Assessment of the need to build new infrastructure for district heating and cooling, produced from renewable sources,
- vii. If applicable, special measures to encourage the use of energy from biomass, in particular for obtaining new biomass, taking into account:
 - the availability of biomass, including sustainable biomass: domestic potential and imports from third countries,
 - other uses of biomass in other sectors (agriculture and forestry sectors), as well as measures for the sustainability of biomass production and use.

3.1.3. Other elements of this area

- i. Policies and measures for the achievement of other national objectives, if applicable,
 - ii. Policies and measures for the achievement of low-emission mobility (including the electrification of transport),
 - iii. If applicable, national policies, deadlines and measures planned for the phasing out of energy subsidies, especially for fossil fuels.
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3.2. Area: energy efficiency

Planned policies, measures and programs for achieving the indicative goal for 2030, as well as other goals from item 2.2 of this Annex, including the planned measures and instruments (and those of a financial nature), for the improvement of energy performance of buildings, which are especially related to:

- i. Policy measures related to achieving the goal of cumulative energy savings, in accordance with Annex 2 of this Rulebook,

- ii. Long-term strategies for the renovation of the national fund of residential and non-residential buildings, public and private, including policies, measures and actions for the encouragement of financially viable major renovations, policies and actions aimed at the segments of the national building fund with the worst properties, in accordance with the law governing planning and construction,
 - iii. Description of policies and measures to encourage energy services in the public sector and measures to remove the regulatory and non-regulatory barriers that prevent the implementation of agreements on energy performance and other energy service model agreements,
 - iv. Other planned policies, measures and programs for achieving the indicative goal for 2030, as well as other goals from item 2.2 of this Annex, such as: measures which make public buildings and energy efficient public procurements exemplary, measures for the encouragement of energy audits and for the improvement of energy management systems, consumer information and training measures, as well as other measures for the improvement of energy efficiency,
 - v. If applicable, a description of policies and measures to promote the role of local energy communities in contributing to the implementation of policies and measures under sub-items i., ii., iii. and iv. of this Annex,
 - vi. Description of measures for the identification of measures whose aim is to exploit the potential for increasing the energy efficiency of gas and electricity infrastructure,
 - vii. Regional cooperation in this area, if applicable,
 - viii. Financial measures in this area, including international support.
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- 3.3. Area: energy security
 - i. Policies and measures related to the elements from item 2.3 of this Annex,
 - ii. Regional cooperation in this area,
 - iii. Financial measures in this area at the national level.
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- 3.4. Area: internal energy market
 - 3.4.1. Electricity infrastructure
 - i. Policies and measures for achieving the target level of interconnection referred to in Article 5, item 4), sub-item (1) of this Rulebook,
 - ii. Regional cooperation in this area,
 - iii. Financial measures in this area at the national level, including European Union support and the use of European Union funds, if applicable.
 - 3.4.2. Energy transmission infrastructure
 - i. Policies and measures related to the elements from item 2.4.2 of this Annex, including, if applicable, special measures for the facilitation of the implementation of projects of interest to the Energy Community and other key infrastructure projects,
 - ii. Regional cooperation in this area,
 - iii. Financial measures in this area at the national level, including European Union support and the use of European Union funds, if applicable.
 - 3.4.3. Market integration
 - i. Policies and measures related to the elements from item 2.4.3 of this Annex,
 - ii. Measures to increase the flexibility of the energy system with regard to the production of energy from renewable sources, such as smart grids, aggregation, demand management, storage, distributed energy generation, mechanisms for dispatch, re-delivery and restriction of the service and real-time price signals, including the introduction of intraday market harmonization and cross-border balancing markets,
 - iii. Where applicable, measures to guarantee the non-discriminatory participation of renewable

energy sources, the management of the consumption and storage, inter alia, through aggregation, in all energy markets,

iv. Policies and measures for the protection of consumers, in particular the vulnerable ones and, if applicable, consumers in energy poverty, and measures to strengthen the competitiveness and unrestricted market competition in the retail energy market,

v. Description of measures for enabling and developing the consumption management, including those that relate to the tariffs for the encouragement of dynamic pricing.

3.4.4. Energy poverty

If applicable, policies and measures for the achievement of objectives from item 2.4.4 of this Annex.

3.5. Area: research, innovation and competitiveness

i. Policies and measures related to the elements from item 2.5 of this Annex,

ii. Where applicable, cooperation with other member states in this area, including, where appropriate, information on how the objectives and policies of the Strategic Energy Technology Plan (SET) are being translated into the national context,

iii. Financial measures in this area at the national level, including European Union support and the use of European Union funds, if applicable.

SECTION B: ANALYTICAL BASIS

4. CURRENT SITUATION AND PROJECTIONS BASED ON EXISTING POLICIES AND MEASURES

4.1. Predicted development of major exogenous factors that affect the energy system and the trends in terms of greenhouse gas emissions

i. Macroeconomic forecasts (GDP and population growth),

ii. Sectoral changes expected to affect the energy system and the greenhouse gas emissions,

iii. Global energy trends, international fossil fuel prices, carbon prices within the European Union's emissions trading system,

iv. Changes in the price of technology.

4.2. Area: decarbonization

4.2.1. Greenhouse gas emissions and removals

i. Trends in current greenhouse gas emissions and removals, within the economy and the different sectors,

ii. Projections of sectoral developments with existing national policies and measures of the Energy Community and policies and measures of the European Union at least until 2040 (including projections for 2030).

4.2.2. Energy from renewable sources

i. Current share of energy from renewable sources in the final gross energy consumption and in the different sectors (heating and cooling, electricity and transport), as well as by technology in each of these sectors,

ii. Indicative projections of developments, with existing policies until 2030 (with prospects for 2040).

4.3. Area: energy efficiency

i. Current primary and final energy consumption, in total and by sectors, which is taken as a starting basis (including the industrial, residential, public-commercial and transport sectors),

- ii. Current potential for the application of highly efficient cogeneration and the efficient district heating and cooling,
 - iii. Projections of primary and final energy consumption by sectors, and of other relevant parameters until 2040 (including the projections for 2030), taking into account only the existing energy efficiency policies, measures and programs, as described in item 1.2, sub-item ii. of this Annex,
 - iv. Cost-optimal levels in terms of requirements for the energy performance of buildings, based on calculations established by regulations that govern the requirements in terms of the energy efficiency of buildings.
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4.4. Area: energy security

- i. Current energy mix, domestic energy sources, dependence on imported energy, including the relevant risks,
 - ii. Projections of developments with existing policies and measures at least until 2040 (including projections for 2030).
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4.5. Area: internal energy market

4.5.1. Electricity interconnection

- i. Current level of interconnection and main connecting lines,
- ii. Projections regarding the requests to increase the number of connecting lines (including projections for 2030).

4.5.2. Energy transmission infrastructure

- i. Key features of the existing electricity and gas transmission infrastructure,
- ii. Projections regarding the requests for network expansion, at least until 2040 (including projections for 2030).

4.5.3. Electricity and gas markets, energy prices

- i. Current situation in the electricity and gas markets, including the energy prices,
 - ii. Projections of developments with existing policies and measures, at least until 2040 (including projections for 2030).
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4.6. Area: research, innovation and competitiveness

- i. Current situation regarding the low-carbon technologies and, to the extent possible, their position in the global market (this analysis should be made at the regional level or at the global level),
 - ii. Current level of public and, if available, private spending on research and innovation in the area of low-carbon technologies, the current number of patents and the current number of researchers,
 - iii. Analysis of current price elements that make up the three price components (energy, network, as well as taxes and fees),
 - iv. Description of the energy subsidies, including for fossil fuels.
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5. ASSESSMENT OF THE EFFECTS OF THE PLANNED POLICIES AND MEASURES

5.1. Effects of the planned policies and measures described in item 3 of this Annex on the energy system and the greenhouse gas emissions and greenhouse gas removals, including a comparison with the projections based on existing policies and measures (as described in item 4 of this Annex)

- i. Projections of developments in terms of the energy system, as well as the greenhouse gas emissions and their removals and, if relevant, emissions of pollutants into the air, in accordance

with the regulations in the area of air protection, within the planned policies and measures, for at least ten years after the period covered by the plan (including projections for the last year of the period covered by the plan),

ii. Assessment of policy synergies (synergies between the existing and planned policies and measures within one dimension and synergies between the existing and planned policies and measures in different areas), at least until the last year of the period covered by the plan, especially in order to fully understand the impact of energy efficiency/energy savings policies on the determination of the size of the energy system, and to reduce the risk of lost investments in the field of energy supply,

iii. Assessment of the interactions between the existing policies and measures and planned policies and measures, as well as between those policies and measures and the policy of the Energy Community in the area of climate and energy;

5.2. Macroeconomic and, to the extent possible, health and environmental effects, effects in terms of employment and education, social effects and effects on skills (in terms of costs and benefits, as well as cost-effectiveness) of the planned policies and measures described in item 3 of this Annex, at least until the last year of the period covered by the plan, including a comparison with the projections made on the basis of existing policies and measures.

5.3. Overview of the required investments

i. Existing investment flows and forecasts of future investments in relation to the planned policies and measures,

ii. Sector or market risk factors or barriers in the national or the regional context,

iii. Analysis of additional support from public finances or the sources for filling the gaps identified under sub-item ii. of this item.

5.4. Effects of planned policies and measures described in point 3 of this Annex on other Contracting Parties and/or member states of the European Union and on regional cooperation, at least until the last year of the period covered by the plan, including comparisons with projections based on existing policies and measures

i. To the extent possible, effects on the energy system of neighbouring countries and other Contracting Parties and/or member states of the European Union in the region,

ii. Effects on energy prices, utility services and the energy market integration,

iii. If relevant, effects on regional cooperation.

Part 2

List of parameters and variables that are to be specified in section B of the national plans

The following parameters, variables, energy balances and indicators should be listed in section B of the national plans, under the heading "Analytical base", if they are used:

1. General parameters and variables:

(1) population [in millions],

(2) GDP [in millions of euros],

(3) sectoral gross value added (including main industrial sectors, construction, public-commercial and agricultural sectors) [in millions of euros],

(4) number of households [in thousands],

(5) size of households [number of tenants per household],

(6) disposable household income [in euros],

(7) number of passenger kilometers (pkm): for all modes of transportation, i.e., broken down

into road (if possible, separate cars and buses), railway and air transportation and inland navigation (as needed) [in millions of pkm],

(8) transportation of goods in tonne-kilometres (tkm): all modes of transportation except international maritime transport, i.e., broken down into road, railway and air transportation and inland navigation (inland waterways navigation and national maritime navigation) [in millions of tkm],

(9) international import prices of oil, gas and carbon [EUR/GJ or EUR/toe] based on recommendations of the European Commission,

(10) the price of trading carbon emissions in the European Union – in [EUR/EUA] – based on the recommendations of the European Commission,

(11) assumptions in terms of the Euro and US dollar exchange rate (if applicable) [EUR/Currency and USD/Currency],

(12) heating degree days (HDD),

(13) cooling degree days (CDD),

(14) assumptions in terms of the costs of the technology used in models for the main relevant technologies.

2. Energy balances and indicators

2.1. Energy supply:

(1) domestic production by type of fuel (all energy products that are produced in significant quantities) [ktoe],

(2) net imports by type of fuel (including electricity, broken down into net imports from the European Union and net imports from outside the European Union) [ktoe],

(3) dependence on energy imported from third countries [%],

(4) main sources of imports (countries) for major energy carriers (including gas and electricity),

(5) gross domestic consumption by source of fuel (including solid fuels, all energy products: coal, crude oil and petroleum products, natural gas, nuclear energy, electricity, heat produced, renewable energy sources, waste) [ktoe];

2.2. Electricity and heat:

(1) gross electricity production [GWh],

(2) gross production of electricity by fuel (all energy products) [GWh],

(3) share of combined heat and power generation in total heat and power generation [%],

(4) capacity of electricity production by source, including the shut-off capacities and new investments [MW],

(5) heat production in thermal power plants,

(6) heat production in combined heat and power generation plants, including industrial waste heat,

(7) cross-border and interconnection capacities for gas and electricity and their expected utilization rates;

2.3. Conversion sector:

(1) fuel consumed in thermal power plants (including solid fuels, oil, gas) [ktoe],

(2) fuel consumed in other conversion processes [ktoe];

2.4. Energy consumption:

(1) primary energy consumption and final energy consumption [ktoe],

(2) final energy consumption by sector (including industry, housing sector, tertiary sector,

agriculture and transport (including, where appropriate, the division into passenger and freight transport)) [ktoe],

(3) final energy consumption per fuel (all energy products) [ktoe],

(4) final consumption for non-energy purposes [ktoe],

(5) primary energy intensity in the total economy (primary energy consumption per GDP) [toe/EUR],

(6) final energy intensity by sector (including industry, housing sector, tertiary sector and transport (including, where appropriate, the division into passenger and freight transport));

2.5. Prices:

(1) electricity prices by type of consumption sector (residential, industrial, tertiary),

(2) national retail fuel prices (including taxes, by source and sector) [EUR/ktoe];

2.6. Investments:

Investment costs in the energy conversion, supply, transmission and distribution sectors;

2.7. Renewable sources:

(1) gross final consumption of energy from renewable sources and the share of energy from renewable sources in the gross final energy consumption, both by sector (electricity, heating and cooling, transport), and by technology,

(2) production of electricity and heat from renewable energy in buildings; this includes, if available, data classified by the energy produced, energy consumed and networked energy from solar photovoltaic systems, solar thermal systems, biomass, heat pumps, geothermal systems, as well as from other decentralized renewable energy systems,

(3) if applicable, other national pathways, including long-term or sectoral share of biofuels produced from food raw materials and advanced biofuels, share of energy from renewable sources in district heating, as well as renewable energy produced by cities and the renewable energy communities.

3. Indicators related to greenhouse gas emissions and removals:

(1) greenhouse gas emissions by policy sector (including the forestry and other land use sector),

(2) greenhouse gas emissions by sector of the Intergovernmental Panel on Climate Change (IPCC) and by gas (as needed, classified into the European Union emissions trading system and the sectors to which the distribution of cargo relates) [tCO₂eq],

(3) carbon emissions in the overall economy [tCO₂eq/BDP],

(4) indicators related to the emissions of CO₂:

(a) intensity of greenhouse gas emissions in domestic production of electricity and heat [tCO₂eq/MWh],

(b) intensity of greenhouse gas emissions of final energy consumption by sector [tCO₂eq/ten],

(5) indicators related to emissions that do not contain CO₂,

(a) livestock: dairy cows [1,000 heads], cattle [1,000 heads], sheep [1,000 heads], pigs [1,000 heads], poultry [1,000 pieces],

(b) nitrogen intake through the application of artificial fertilizers [kt nitrogen],

(c) nitrogen intake through the application of manure [kt nitrogen],

(d) nitrogen bound through crops that bind nitrogen to themselves [kt nitrogen],

(e) nitrogen in crop residues that return to the soil [kt nitrogen],

(f) area of cultivated organic land [hectares],

(g) creation of municipal solid waste (MSW),

(h) municipal solid waste (MSW) ending up in landfills,

(i) the share of CH₄ return in total CH₄ generated at landfills [%].