# Sweden's Methane Action Plan

Mapping of Sweden's methane emissions, projections, policies and measures

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#### 1. Introduction

Enabling an efficient climate transition is an important priority for the Swedish Government. According to the Paris Agreement, the central aim is to strengthen the response to the threat of climate change and limit global warming to well below below 2° C and pursue efforts to limit the temperature increase to 1.5° C above pre-industrial levels. A significantly higher level of ambition globally is needed if we want to limit global warming in line with global agreements. In 2017, the Swedish parliament decided by a large political majority to introduce a climate policy framework for Sweden. This framework includes new climate targets, a climate policy council and a climate act. This reform is a central part of Sweden's implementation of the Paris Agreement.

Methane is a powerful short-lived climate change pollutant that has a disproportionate impact on near-term temperature. According to the IPCC:s sixth assessment report, methane is estimated to account for almost a third of the global warming observed to date and are one of the most significant drivers of climate change. Sweden is a proud supporter of the Global Methane Pledge that was formally launched in November 2021. The pledge entails a collective goal to reduce global methane emissions by at least 30 percent by 2030 compared to 2020, and to take voluntary actions to contribute to this collective effort. With more than 100 countries as signatories, representing almost 50 per cent of global anthropogenic methane emissions, the pledge is and will be a key instrument in pushing for more ambitious action on methane.

This document is a direct response to the call from the United States and the European Commission on developing a methane action plan ahead of the next ministerial meeting at COP27. Sweden recognizes that even though the reduction goal is collective, concrete action must take place on the national level. Sweden's methane action plan focuses on current methane emissions in Sweden as well as policies and measures in place to reduce methane emissions in Sweden and globally. The document is a foundation for further work on developing Sweden's action on methane. This, in turn, is interlinked with the process of developing Sweden's forthcoming climate action plan that follows from the regulations set out in the climate policy framework.

# 2. Methane emission sources in Sweden

Methane emissions in Sweden are dominated by emissions from the agricultural sector, followed by the waste sector, LULUCF¹ and energy sector. In addition, there are some minor emissions from industrial processes and product use (IPPU). In 2020, total emissions of methane excluding LULUCF accounted for 4.1 Mt CO₂-eq.² which corresponds to approximately nine per cent of Sweden's total greenhouse gas emissions. The total amount of methane emissions including LULUCF is approximately 4.6 Mt CO₂-eq. Since 1990, methane emissions including LULUCF have decreased by approximately 42 per cent. The main reason for the decrease is mitigation measures undertaken in the waste sector (described in detail in 3.3). For the total methane emissions in Sweden 1990 to 2020 see Figure 1.

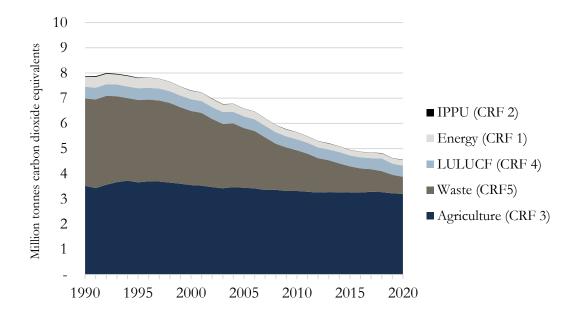


Figure 1. Total methane emissions in Sweden 1990-2020 presented in CRF sectors<sup>3</sup> and calculated as CO<sub>2</sub>-eq. In 2020, total methane emissions amounted to 4.6 Mt CO<sub>2</sub>-eq. including LULUCF.

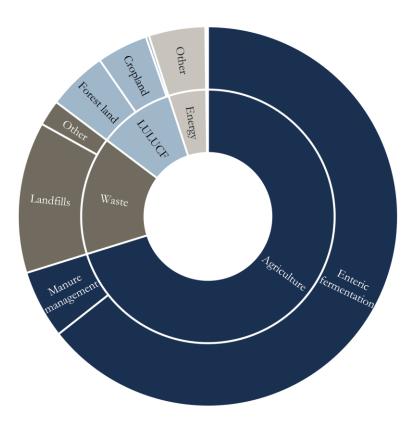
The total emissions of methane in the agricultural sector amounted to 3.2 Mt CO<sub>2</sub>-eq. in 2020. These emissions mainly originate from enteric fermentation

<sup>&</sup>lt;sup>1</sup> Land use, land-use change, and forestry.

<sup>&</sup>lt;sup>2</sup> Carbon dioxide equivalents.

<sup>&</sup>lt;sup>3</sup> The common reporting format (CRF) are United Nations Framework Convention on Climate Change (UNFCCC) reporting template for countries to report their greenhouse gas emissions by sector and is used in Sweden's national inventory of greenhouse gas emissions reported to the UNFCCC.

(2.9 Mt CO<sub>2</sub>-eq.) and manure management (0.3 Mt CO<sub>2</sub>-eq.). Compared to 1990, methane emissions from agriculture have decreased with nine per cent in 2020. In the waste sector, total methane emissions amounted to 0.68 Mt CO<sub>2</sub>-eq in 2020 of which the main part originates from landfills. That is a decrease of approximately 80 per cent since 1990. For the LULUCF sector, methane emissions amounted to 0.4 CO<sub>2</sub>-eq. in 2020 (forest land 0.23 Mt CO<sub>2</sub>-eq. and cropland 0.2 Mt CO<sub>2</sub>-eq.). The emissions in this sector mainly occur due to drained organic soils on forest land and cropland, and to very small extent due to fires on forest land. In the energy sector, methane emissions originate mainly from energy industries and manufacturing industries, transport and stationary combustion. The total amount of methane emissions in the energy sector amounted to 0.2 Mt CO<sub>2</sub>-eq in 2020. For a detailed breakdown of methane emissions in Sweden, see Figure 2 below.



**Figure 2.** Total methane emissions in Sweden 2020 (4.55 Mt CO<sub>2</sub>-eq. including LULUCF). Methane emissions from the IPPU sector are excluded in this figure due to the small amount compared to the total level of methane emissions in Sweden. Total methane emissions in the agriculture sector amounted to 3.2 Mt CO<sub>2</sub>-eq (enteric fermentation 2.93 Mt CO<sub>2</sub>-eq and 0.26 Mt CO<sub>2</sub>-eq in manure management). Total methane emissions in the waste sector amounted to 0.68 Mt CO<sub>2</sub>-eq (0.58 Mt CO<sub>2</sub>-eq in landfills and 0.1 Mt CO<sub>2</sub>-eq in other). For the LULUCF sector, total methane emissions amounted to 0.44 Mt CO<sub>2</sub>-eq (0.23 Mt CO<sub>2</sub>-eq forest land and 0.2 Mt CO<sub>2</sub>-eq in crop land). Total methane emissions in the energy sector amounted to 0.20 Mt CO<sub>2</sub>-eq and mainly consists of emissions from energy industries, manufacturing industries, transport, and stationary combustion (in this figure these categories are included as Other).

## 3. Projections of methane emissions in Sweden

Methane emissions in Sweden are expected to decrease in the future, mainly in the waste sector due to implemented measures that continue to contribute to reduced emissions. By 2030, total methane emissions in Sweden are projected to decrease by approximately 53 per cent compared to 1990. Between 2020 and 2030, total methane emissions in Sweden are projected to decrease by approximately 17 per cent. In the waste sector, methane emissions from landfills are projected to decrease by 88 percent until 2030 compared with 1990. The main cause for the decrease is the ban on depositing combustible materials in landfills, which was introduced in 2002, and the ban on depositing organic materials in landfills, which was introduced in 2005. These measures and enabling circular economy policies are described in more detail in the next section. In the agriculture sector, methane emissions are expected to decrease by 23 per cent until 2030 compared with 1990, mainly due to a reduced number of cattle. This projection is mainly based on the assumptions of increased productivity and future production prices. For projections on methane emissions in Sweden until year 2050, see Figure 3.4

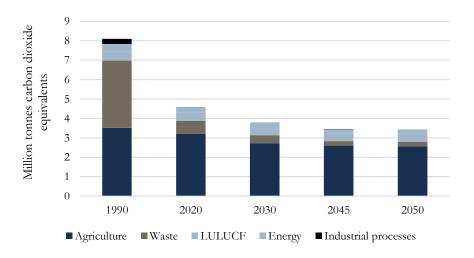


Figure 3. Swedish methane emissions 1990, 2020 and projections for 2030, 2045 and 2050 (Mt  $CO_2$ -eq).

<sup>&</sup>lt;sup>4</sup> More information on key parameters and underlying assumptions can be found in Sweden's fourth Biennial Report under the UNFCCC in chapter 4, see <a href="https://unfccc.int/sites/default/files/resource/Fourth%20Biennial%20report">https://unfccc.int/sites/default/files/resource/Fourth%20Biennial%20report</a> %20Sweden.pdf.

# 4. National strategies, policies, and measures in Sweden

National strategies that govern the overall environmental efforts and regulations in Sweden include the environmental quality objectives and the Swedish climate policy framework. **Sweden's environmental quality objectives** define which environment Swedish policy should steer towards. The goals provide direction for all of Sweden's environmental policies at the national, EU and international level. The system of environmental objectives also provides a structure for systematic follow-up of environmental policy as a basis for strategic action. The environmental quality objective *reduced climate impact* contains milestone targets related to the reduction of methane.

In 2017, Sweden's parliament decided by a large majority to introduce a climate policy framework for Sweden. The framework consists of a climate act, climate targets and a climate policy council. The purpose of the framework is to create a clear and coherent climate policy to ensure long term signals to the market and other actors. According to Sweden's climate act, the government shall present a climate report in its budget bill. The climate report includes a review of historic emissions, scenarios for Sweden's emissions, an evaluation of the most important policies and measures during the last year, together with an assessment regarding the need for additional measures and new climate policies introduced in the budget bill. The act also regulates that the Swedish government must present a climate policy action plan to the parliament every fourth year, no later than the year following ordinary elections. The action plan should include, inter alia, the effects of already taken measures, policies in place that will lead to further emission reductions, as well as additional measures that are required to meet Sweden's climate targets. The first action plan was presented to the parliament in December, 2019, and included several new measures to reduce Sweden's greenhouse gas emissions.

Since methane constitutes a significant amount of Sweden's emissions and are included in Sweden's climate targets, efforts to reduce methane emissions will be considered in the process of developing the next climate policy action plan. The next action plan will be presented to the parliament before the end

of 2023 and cover the whole term of office. Preparations have started and several government agencies have been commissioned by the government to suggest new climate policies. These proposals have recently been presented and a consultation process to get feedback from other societal actors, such as companies, environmental NGOs and other government agencies, have started.

The climate policy framework is an important climate reform in Sweden and a key component of Sweden's implementation of the Paris Agreement. Therefore, the climate policy framework is also central in Sweden's work to reduce methane emissions. The framework includes long-term- and milestone targets towards net zero greenhouse gas emissions by 2045. The targets included in the framework are presented in Figure 4 below.

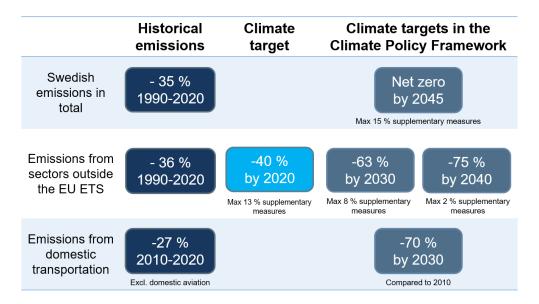


Figure 4. Sweden's national targets included in the Swedish climate policy framework. The targets that include emissions from sectors outside the EU ETS<sup>5</sup> are compared to 1990.

### 4.1 Cross-sectoral key policies and measures

The Environmental Code constitutes a framework legislation that consists of the general provisions regarding environmental protection. Among other aspects, the Environmental Code contains general rules for consideration that are to be observed in all activities and measures.

<sup>&</sup>lt;sup>5</sup> The European Union Emissions Trading System is a system for trading emission rights for greenhouse gases within the European Union.

A climate investment programmed called the **Climate Leap** was introduced in 2015. The programme supports investments in local and regional initiatives that reduce greenhouse gas emissions, including methane, in all sectors. Co-benefits are taken into consideration in the initiative, such as air pollution. The Swedish Environmental Protection Agency administers the programme. In total, 12 billion Swedish kronor has been granted for investments within the programme (as of September 2022). It has been estimated that measures supported by the programme so far have contributed to a yearly additional emission reduction of 2.5 million tonnes CO<sub>2</sub>-eq. during the lifetime of the measures. There are, however, no estimates of emission reductions divided per greenhouse gas.<sup>6</sup> Examples of investments that can be granted support are transition to renewable energy, charging infrastructure for electric vehicles, and support for the production of biogas. The latter category contributes to reductions of short-lived climate pollutants.

#### 4.2 Key policies and measures in the agricultural sector

Methane emissions from the agricultural sector have declined slightly since 1990 and further decline is expected in the future. The main reason to the decline is fewer but more productive animals, especially dairy cows. However, with a continuous, and in accordance with the Swedish food strategy, increased food production a large part of the greenhouse gas emissions deriving from biological processes will remain. To reach Sweden's climate target for 2045, these emissions will have to be compensated with complementary measures, such as increased carbon sinks. Efficient policy packages are needed to reduce the emissions from the sector as much as possible without causing negative side effects on other environmental or societal goals. There are several EU and national policies including goals, strategies and policy measures that are relevant for, or directed at, the agricultural sector.

#### 4.2.1 Common Agricultural Policy

The main economic policy instrument directed at the agricultural sector is the EU Common Agricultural Policy (CAP). Based on certain requirements, farmers can receive support for measures aimed at producing non-profitable services delivered to the wider public such as landscapes, farmland

<sup>&</sup>lt;sup>6</sup> See <a href="https://www.naturvardsverket.se/globalassets/amnen/klimat/klimatklivet/lagesbeskrivning-for-klimatklivet-2022-04-13.pdf">https://www.naturvardsverket.se/globalassets/amnen/klimat/klimatklivet/lagesbeskrivning-for-klimatklivet-2022-04-13.pdf</a>.

biodiversity and certain climate change mitigation measures. Through the CAP's second pillar for rural development, member states have access to a wide range of measures to encourage higher environmental performance, including climate mitigation and adaptation. The policy also requires member states to allocate a minimum share of funding from the second pillar to such measures.

#### Rural development programme

The second pillar of the CAP is in Sweden implemented through the rural development programme. The programme period for 2014-2020 includes support for investments grants for young entrepreneurs, capacity building, cooperation, and innovation. Furthermore, it offers support to areas with natural constraints, animal welfare subsidies, ecological farming, and environmental and climate actions. Measures specifically contributing to climate change mitigation include those aimed at: increasing energy efficiency; production and use of renewable energy (including biogas production and establishment of perennial energy crops); conversion from fossil to renewable energy sources; improved manure handling; more efficient use of nitrogen; climate and energy advice; measures to prevent the risk of nitrogen leakage; restoration and establishment of wetlands; promotion of grass ley and catch crop production in intensive cropping areas; conservation of semi-natural pastures; and other separate projects relating to climate and energy. The current programme period has been extended until 2022.

#### New agricultural policy 2023-2027

The next programme period 2023-2027 will support the transition to more sustainable production systems and has been adapted to EU:s laws and commitments in the area of environment and climate. This will address the climate impact from agriculture. The Strategic plan for implementation of the common agricultural policy in Sweden 2023-2027 includes several measures that are expected to contribute to reaching environmental and climate targets in line with measures within CAP during the current period.

#### 4.2.2 Biogas production support

Biogas production from manure contributes to reduced emissions of both methane and nitrous oxide. Support can be granted for investments in biogas facilities, for example through the Climate Leap programme. New from 2022 is that also investments for electricity generation from biogas may recieve support through the programme. Economic support for biogas

production through anaerobic digestion of manure may be granted from the support scheme for biogas production. The support scheme aims to increase biogas production from manure and thereby gain two-fold environmental and climate benefits through reduced methane emissions from manure and the substitution of fossil energy. Further economic support can be given for biogas being upgraded to biomethane used in transport sector. In the budget for 2022, 500 million Swedish kronor are set aside for a new and reinforced biogas production suggested to run until 2040 with the aim to reduce the insecurities connected to investments in biogas production.

There is also a voluntary commitment programme to minimize methane emissions that can occur due to leakage from biogas production called "EvEmBi" (Evaluation and reduction of methane emissions from different European biogas plant concepts). The initiative is an international project with partners from several European countries. The purpose of the EvEmBi project has been to evaluate various European biogas concepts (types of facilities) regarding emission factors, and to disseminate knowledge about how voluntary systems can and should be designed

#### 4.2.3 Advisory service "Focus on nutrients"

Since 2001, there is a free advisory service for farmers called "Focus on nutrients" (in Swedish: Greppa Näringen), which is financed by the current rural development programme. The initial focus was on advice for higher nutrient efficiency to reduce nutrient leaching. Today, it also provides advice specifically targeting greenhouse gas emission reductions and energy efficiency.

#### 4.2.4 Other policy instruments and initiatives

There are also administrative policy instruments directed at the agricultural sector. These are regulated in the Environmental Code and in the animal welfare act, including for example requirements for storing and spreading of manure and for air quality in stables. Although not directed strictly towards reducing greenhouse gases, several of the measures connected to manure management that are implemented to reach the environmental quality objectives zero eutrophication and clean air may have positive side effects in reducing methane and nitrous oxide.

In general, measures aimed at increasing animal productivity and profitability are implemented continuously and do also have a positive side effect for the environment since they reduce climate impact per kilogram produced food.

Furthermore, there are several ongoing initiatives from the agricultural industry and food supply chain with connections to sustainability and climate impact. For example, climate calculations on farm level, innovation farms, greenhouse gas reduction targets, etc.

### 4.3 Key policies and measures in the waste sector

Methane emissions from the waste sector have declined and continues to decline in Sweden. There has been a series of policy instruments on the transition to a circular economy at both national and EU level that have contributed to the declining trend. These measures are described in more detail below.

#### 4.3.1 The Swedish strategy for a circular economy

The Swedish strategy for a circular economy aims at reducing the use of materials and waste that goes to landfill. Several EU regulations and directives play an important part in achieving a circular economy, such as the Directive on Waste (2008/98/EC), the regulation on shipment of waste (EC) No 1013/2006) and Regulation ((EC) No 1907/2006) concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). The requirements of separate collection of bio-waste included in the EU Waste Directive will be implemented in Swedish law as of 2024.

#### 4.3.2 EU Landfill directive

The Landfill Directive (1999/31/EC) requires landfilling of biodegradable waste to be reduced and for methane to be collected from landfills, preferably with energy recovery. The national legislation is more far-reaching than the EU Landfill directive, regulating landfilling of biodegradable waste as well as collection of methane from landfills. The national legislation contains a ban on landfilling of organic waste since 2005.

#### 4.3.3 Landfill tax

In 2000, a tax on landfilled waste was introduced on waste disposal to landfill (SFS 1999:676) that has increased gradually. In 2021, the tax was 555 Swedish kronor per tonne landfilled waste.

### 4.3.4 Ban on landfilling combustible and organic waste and methane collection

Under the Swedish Ordinance on the Landfill of Waste (SFS 2001:512), a ban on landfilling combustible waste was introduced in 2002 and a similar ban was imposed for organic material in 2005. The ordinance also regulates the collection and disposal of methane gas from landfills. The ordinance is intended to prevent and reduce adverse effects on human health and the environment from landfilling.

#### 4.3.5 Extended producer responsibility for producers

Producer responsibility promotes sorting, collection, and re-cycling of certain waste flows<sup>7</sup>, and aims at incentivizing producers to develop more resource-efficient products that are easier to recycle and that do not contain environmentally hazardous substances. It also aims to reduce the amount of waste. The legislation on extended producer responsibility contains national targets for recycling and has resulted in increased separated collection of waste fractions and increased recycling (apart from pharmaceuticals and radioactive products, where there are no specific targets).

#### 4.3.6 The municipal waste planning requirement

Since 1991, there has been a requirement that all municipalities in Sweden must have their own municipal waste plan. A Swedish Environmental Protection regulation (NFS 2006:6) sets out the minimum requirements of what each municipality must include in its waste plan, such as a description of the current situation, recycling plants and landfills, environmental assessment, measures, and monitoring. Both the national waste plan<sup>8</sup> and the national prevention programme<sup>9</sup> act as guidance for the municipalities in developing their local plans and deciding on prioritized actions.

### 4.4 Key policies and measures in the LULUCF sector

Methane emissions from the LULUCF sector varies somewhat over the years, but have been relatively constant since 1990 and is predicted to

<sup>&</sup>lt;sup>7</sup> Extended producer responsibility has been developed for packaging, end of life vehicles, tires, electrical and electronic equipment, batteries, pharmaceuticals.

<sup>8</sup> Swedish Environmental Protection Agency, 2012, From waste management to resource efficiency, Report 6560

<sup>&</sup>lt;sup>9</sup> Swedish Environmental Protection Agency, 2015, Tillsammans vinner vi på ett giftfritt och resurseffektivt samhälle Sveriges programme för att förebygga avfall 2014–2017, Report 6654, ISBN 978-91-620-6654-3

continue to be of similar size in the future. The dominating source of methane emissions from this sector is drained organic soils, mainly originating from waterbodies that have been created by excavation (ditches) on forest land and cropland. There are limitations in efficient measures to reduce these methane emissions from biological processes.

#### 4.4.1 Management of wildfires

To manage wildfires, Skogsforsk, the central research body for the Swedish forestry sector, has developed guidelines for risk management of forest fires. These guidelines are common for the largest forest owners in Sweden, the Swedish Forestry Agency, the Fire and Rescue services and the Swedish Civil Contigencies Agency. The guidelines include measures on how to prevent fires and how to limit the spreading of fires. If natural fires are prevented or limited, the total amount of methane emissions is less compared to a scenario if no measures would have been implemented through management.

The Nordic forest fire and wildfire cooperation aims at strengthening the capacity of fighting forest fires and wildfires in the Nordic countries by for example increasing the capability of sharing resources in an event of wildfires.

#### 4.4.2 Conservation fires

The implementation of the environmental quality objective Sustainable Forests<sup>10</sup> includes restoration, regeneration, and development of environmentally adapted management methods.<sup>11</sup> Prescribed burning plays an important role in such restoration work and as a management tool in the protected boreal and boreonemoral forests. A detailed burning plan is drawn up for each individual stand to be burnt with clear biological goals and highlighting all safety aspects. Two County administrative boards carries out these so-called nature conservation burnings. The private forest sector also carries out conservation fires as a conservation measure. Besides the positive effects on biodiversity, the approach of performing conservation fires increase the preparedness and knowledge in how to prevent or limit natural fires that contribute to methane emissions when occurring.

<sup>&</sup>lt;sup>10</sup> See <a href="https://www.naturvardsverket.se/en/environmental-work/environmental-objectives/sustainable-forests/">https://www.naturvardsverket.se/en/environmental-work/environmental-objectives/sustainable-forests/</a>.

<sup>&</sup>lt;sup>11</sup> Swedish Environmental Protection Agency, 2005, Naturvårdsbränning Vägledning för brand och bränning i skyddad skog, Report 5438.

### 4.5 Key policies and measures in the energy and IPPU sector

In the energy sector, the methane emissions originate mainly from energy industries and manufacturing industries, transport and stationary combustion. The total amount of methane emissions in the energy sector amounted to 0.20 Mt CO<sub>2</sub>-eq in 2020. Since 1990, the methane emissions in this sector have decreased by approximately 45 per cent. In the IPPU sector, total emissions amounted to 0.09 Mt CO<sub>2</sub>-eq.

#### 4.5.1 Biogas production support

In 2022, the government decided on a regulation (2022:225<sup>12</sup>) that provides companies who produces biogas the possibility to apply for production support for biogas that is upgraded to biomethane in gas or liquid form with such quality that is required for gas grids. The Swedish Energy Agency is responsible for administrating the grant. In the long run, this can reduce the dependence on imports of fossil natural gas, for example due to that biogas then can replace natural gas in industries or be used as fuel in gas trucks, heavy trucks, and sea transport. This will reduce methane emissions by reducing methane leakage from feedstocks that can be used for biogas production and then upgraded to biomethane. In the budget for 2022, 450 million Swedish kronor are set aside for a new and reinforced biogas production suggested to run until 2040.

#### 4.5.2 LBG production support

During 2019 to 2022, an innovation cluster called "Drive LBG", with support from Swedish Energy Agency, has promoted the introduction and demonstration of technology for liquid biogas (LBG) as a fuel for heavy transport. Within the frame of Drive LBG, the whole chain from production of LBG to its utilization as fuel for long haul transport has been demonstrated.

### 4.5.3 EU methane emissions reduction in the energy sector

There is currently a proposal<sup>13</sup> for regulation on methane emissions reduction on EU level as part of the European Green Deal addressing

<sup>&</sup>lt;sup>12</sup> See <a href="https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2022225-om-statligt-stod-till\_sfs-2022-225.">https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2022225-om-statligt-stod-till\_sfs-2022-225.</a>

<sup>&</sup>lt;sup>13</sup> See <a href="https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A805%3AFIN&gid=1639665806476">https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A805%3AFIN&gid=1639665806476</a>.

decarbonization of the gas sector including the issue of energy-related methane emissions. The proposal applies to methane emissions in oil and fossil gas upstream exploration and production, fossil gas gathering and processing, gas transmission, distribution, underground storage and liquefied natural gas (LNG) terminals as well as operating underground and surface coalmines, closed and abandoned underground coal mines. According to the proposal, the EU should reduce its methane emissions in these areas by 58 per cent by 2030, in comparison with 2020 levels.

# 5. International cooperation

Sweden is engaged in several international initiatives to advance climate action and to support countries' work to address climate change. This includes efforts to implement effective methane mitigation measures as well as to improve data collection and reporting accuracy in key sectors. Sweden has a long history of supporting climate action in developing countries in an array of sectors and on a long-term basis. Sweden has also raised its ambitions further since the adoption of the Paris Agreement. A large number of Swedish actors, such as ministries, government agencies, stateowned companies, non-governmental organisations, universities and the private sector are engaged in advancing climate actions in the international arena. This includes providing grants and innovative finance, technology transfer, research and various forms of capacity building.<sup>1415</sup>

In 2012, Sweden together with Unep, Bangladesh, Ghana, Canada, Mexico, and the United States launched the Climate and Clean Air Coalition (CCAC) to reduce short-lived climate pollutants. As a member of, and donor to, the CCAC, Sweden is continuously engaging in the coalition's work. In particular, Sweden is engaged in the CCAC waste hub leadership group to support overall waste management strategies of national and sub-national governments and municipalities. Since 2012, Sweden has supported the CCAC Trust Fund with approximately 59 million Swedish kronor.

Within the context of bilateral environmental cooperation<sup>16</sup>, Sweden cooperates with several countries within the framework of Sweden's environmental policy and Swedish development cooperation policy. An example is the global capacity building programme "Strengthened institutions for a sustainable climate" which is a multi-country and multi-stakeholder initiative to address climate change by enhancing the use of

<sup>&</sup>lt;sup>14</sup> More information on Sweden's Provision of financial, technological and capacity building support to developing country parties can be found in Sweden's fourth Biennial Report under the UNFCCC, see <a href="https://unfccc.int/sites/default/files/resource/Fourth%20Biennial%20report\_%20Sweden.pdf">https://unfccc.int/sites/default/files/resource/Fourth%20Biennial%20report\_%20Sweden.pdf</a>.

<sup>&</sup>lt;sup>15</sup> The Swedish Energy Agency is responsible for Sweden's program for International Climate Initiatives that support the development of international climate cooperation, see <a href="https://www.energimyndigheten.se/en/cooperation/swedens-program-for-international-climate-initiatives/">https://www.energimyndigheten.se/en/cooperation/swedens-program-for-international-climate-initiatives/</a>.

<sup>&</sup>lt;sup>16</sup> See <a href="https://www.naturvardsverket.se/en/environmental-work/international-cooperation/bilateral-environmental-cooperation">https://www.naturvardsverket.se/en/environmental-work/international-cooperation/bilateral-environmental-cooperation</a>.

<sup>&</sup>lt;sup>17</sup> See <a href="https://www.naturvardsverket.se/en/environmental-work/international-cooperation/multilateral-cooperation/global-climate-programme/">https://www.naturvardsverket.se/en/environmental-work/international-cooperation/multilateral-cooperation/global-climate-programme/</a>.

climate related data for informed climate action.<sup>18</sup> The activities carried out in the programme also relates to methane mitigation measures and strengthened capacities for transparent reporting procedures.

<sup>&</sup>lt;sup>18</sup> The programme is led by the Swedish EPA in close cooperation with several Swedish agencies as well as other national and international stakeholders currently working with partner organisations in Ethiopia, Kenya, Mozambique, Rwanda, Uganda, and Zimbabwe.