



European Commission Global Methane Reduction Actions

Introduction

The European Commission (EC) became a member of the Global Methane Initiative (GMI) in September 2007. The EC is represented in the GMI Steering Committee and the Oil & Gas, Coal Mine, Municipal Solid Waste and Agriculture Subcommittees.

The GMI Steering Committee gave directive and guidance to their partners to develop their GMI Partner Action plan. The purpose of this plan is to advance project implementation, facilitate investment and creating appropriate policy frameworks that support methane abatement, recovery, and use.

The goal of the EC Global Methane Reduction Action Document is to articulate the vision for its partnership in GMI and to outline key policies, activities and priorities in order to exchange best practices and to enhance a mechanism to advance cooperation among partners.

The European Member States Bulgaria, Germany, Finland, Italy, Poland, Italy and UK are GMI members and promote their own national plans and projects in this partnership.

Methane is a major Greenhouse Gas (GHG) that accounts for 14% of the world GHG emissions and 8.6 % of the European Union GHG emissions in 2010. The EU's methane emissions have dropped from around 595 MtCO₂eq in 1990 to 405 MtCO₂eq. in 2010 (a reduction of more than 30%).

The EC participates in the following multilateral fora, in addition to its membership to GMI: Global Gas Flaring Reduction Partnership, Clean Energy Ministerial, Carbon Sequestration Leadership Forum, Global CCS Institute, IEA Clean Coal Centre, UNECE Ad hoc group of experts on CMM, the UNFCCC and the new launched Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC).

1) EC Objectives for Participation in GMI

The EC supports the GMI, an international public-private initiative that advances cost effective, near-term methane recovery and use as a clean energy source in five sectors: agriculture, coal mines, landfills, wastewater and oil and gas systems. GMI focuses on the development of strategies and markets for the abatement, recovery, and use of methane through technology development, demonstration, deployment, and diffusion; implementation of effective policy frameworks; identification of ways and means to support investment; and removal of barriers to collaborative project development and implementation.

The EC recognizes the value of cooperation with other Partners, international organizations, financial institutions, the private sector and stakeholders through the GMI for advancing methane emission reduction efforts in the EU and worldwide.

The development of the EC GMI Methane Reduction Action Document will help further mobilize relevant Commission Services on the issues related to methane emissions. The EC aims to work collaboratively with the Member States represented in the GMI partnership to ensure coordination and leverage resources. Their Partner Action Plans can show in more detail the national policy framework that support methane abatement, recovery, and use and current and future project development activities.

Furthermore, the Commission intends to encourage more EU Member States to be part of the GMI Partnership. The EC Action Document will help foster the interaction with Member States in this sense.

The EC vision of participating in GMI and to work cooperatively with other Partners and the private sector is to exchange information on emissions, abatement options and to foster the implementation of abatement on a larger scale with a view limit climate change to levels that do not cause dangerous interference and contribute to improving air quality levels and sustainability.

2) EU efforts to mitigate methane

Regulatory

Indirectly, the EU tackles methane emissions together with other GHG emissions through the so-called **Climate and Energy Package**, agreed by the European Parliament and Council in December 2008 and enacted in law in June 2009. The package aims at reducing the EU's greenhouse gas emissions by 20% in 2020 compared to 1990. The main two elements regarding methane reduction are:

- A revision and strengthening of the Emissions Trading System (ETS), the EU's key tool for cutting emissions cost-effectively.
- An 'Effort Sharing Decision' governing emissions from sectors not covered by the EU ETS, such as transport, housing, agriculture and waste. Under the Decision each Member State has agreed to a binding national emissions limitation target for 2020 which reflects its relative wealth. The targets range from an emissions reduction of 20% by the richest Member States to an increase in emissions of 20% by the poorest. These national targets will cut the EU's overall emissions from the non-ETS sectors by 10% by 2020 compared with 2005 levels. The following greenhouse gases are covered: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorcarbons (HFCs), perfluorcarbons (PFCs) and sulfur hexafluoride (SF₆). Implementation of this emission reduction will also lead to further reduction in methane emissions.

Methane emissions from the waste sector have decreased as a result of the EU's landfill Directive that targets a reduction of the volume of biodegradable waste that is landfilled by 65% in 2018 following intermediate targets before 2018. As a result methane emissions from

landfills in the EU dropped 35% (some 56 Million ton CO₂equivalent) between 1990 and 2010. The Commission works on the review of the EU's Thematic Strategy on Waste which includes the EU Landfill Directive. The Commission's Roadmap on Resource Efficiency has an indicative target to virtually eliminating landfilling for all untreated waste. Enshrining such a target in binding legislation is expected to further reduce methane emissions.

In addition to explicit policy and EU legislation regulating methane emissions, other policies influence emissions of methane. One important example is the application of Best Available Techniques (BAT) for agro-industrial installations falling under EU legislation (the Industrial Emissions Directive), such as power plants, refineries, large scale rearing of pigs and poultry and waste water treatment plants. The EU Member States have to apply BAT as described in BAT Reference documents that are updated on a regular basis (typically 8 years) to reflect advances in BAT. The BAT requirements will effectively reduce the fugitive methane losses from these installations.

Specific legislation (Stage I Directive) also deals with the reduction of fugitive losses of volatile organics and hydrocarbons from the handling, storage and distribution of liquid fuels. This will also contribute to reductions in methane emissions.

At the moment, the key sources of coal, oil and gas mining exploration are not covered by any specific EU legislation for methane emissions. Where such mining occurs, national legislation is often be in place to reduce the fugitive methane losses.

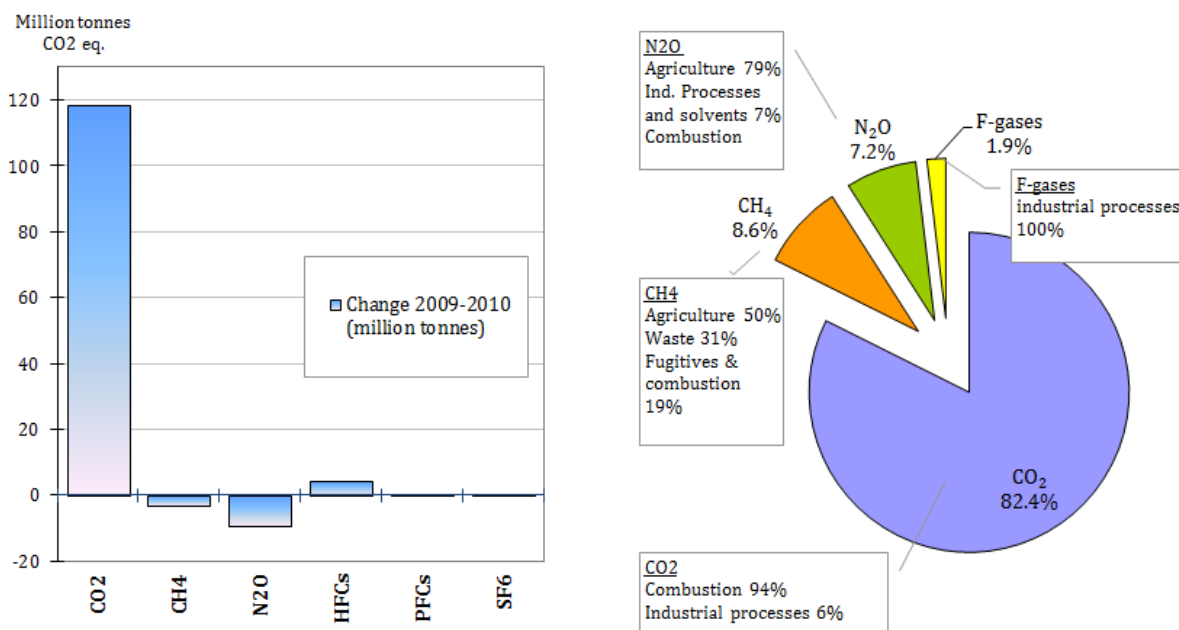
The EU Flagship Initiative and Roadmap to a Resource Efficient Europe (COM (2011) 21 and 571) support a shift to a resource efficient and low carbon economy. Resource efficiency development imply that all resources are sustainably managed, from raw materials to energy, water, air, land and soil what could contribute to the reduction of GHG emissions and climate change mitigation.

GHG Data Collection and Reporting

The combined effect of EU policy and national legislation has had a strong impact on the EU's total methane emissions contributing to the overall reduction of GHGs.

Concerning Coal Mine Methane emission and use data, the European Environment Agency collates EU data for submission to the UNFCCC. Annual CH₄ emissions for the solid fuel sector (1B1) for each country in the EEA region covering the years 1990 to 2010 can be downloaded (www.eea.europa.eu/data-and-maps/data/national-emissions-reported-to-the-unfccc-and-to-the-eu-greenhouse-gas-monitoring-mechanism-6).

Methane emissions vary considerably by sector with the agriculture sector accounting for 50 % of the total emissions. The development of the top six sources of anthropogenic methane emissions between 1990 and 2010 in the EU are shown below and demonstrate the success of the EU and national efforts.



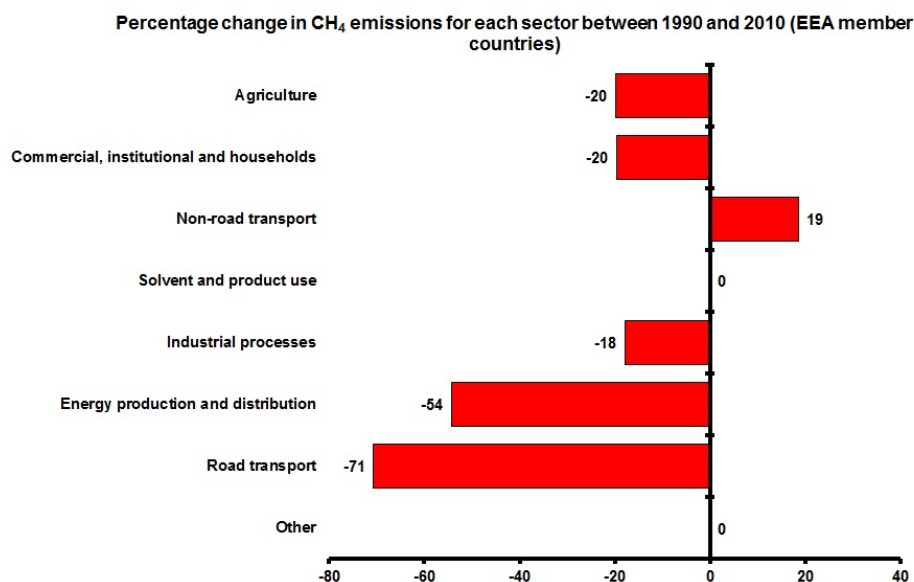
From European Environment Agency (EEA)

While agriculture and waste are accounting for 81 % of total EU methane emissions fugitive emissions from the energy sector are below the global figures and account for 19 %. Oil & Gas and coal exploration are a minor source and are expected to decline over the next decades. Associated petrol gas flaring in the EU in the European Economic Area (EEA) is included in the EU Member States international calculations of greenhouse gases and is covered by CO₂ allowances.¹

The trends for other emissions from landfill suggest that these might further decline over time as a result of the existing waste legislation whereas the decline in methane emissions from agriculture observed in the past might come to a stop.

¹ References to EU legislation:

- EC Directive 2001/81 on National Emission Ceilings for Certain Atmospheric Pollutants;
- Council Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading with the community;
- Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community.



Detailed and updated information:

<http://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2013>

European Commission Actions

The European Commission is undertaking a number of activities and is funding projects in the European Union, their neighborhood countries and in other third countries.

The EU Member States develop their national methane reduction plans and will outline these activities in their own GMI Partner Action Plan.

These funding programs are summarized below and further details are given in each of the 4 Sector Action Plans.

Projects are financed from various EC financing instruments: Thematic Programme for Environment and Sustainable Management of Natural Resources including Energy (ENRTP), 7th Framework Programme for Research (FP7) and the Research Fund for Coal & Steel (RFCS).

1. ENRTP - Thematic Programme for Environment and Sustainable Management of Natural Resources with the aims:

- Integrate environmental protection requirements into the EC development and other external policies
- Promote European Commission's environmental and energy policies abroad in the common interest of the Commission and partner countries and regions.

As part of this programme €1 million has been made available to UNEP to support the work of the Climate and Clean Air Coalition.

2. Framework Programme for Research and Innovation

The on-going Framework Programme FP 7 until 2013 focuses on Research and Innovation in different thematic areas including climate actions and energy and funded several projects in the programme period. The new Framework programme Horizon 2020² will address the societal challenges climate actions, resource efficiency, sustainable agriculture and clean and efficient energy with a specific emphasis on international cooperation.

3. Research Fund for Coal and Steel

The Research Fund for Coal and Steel promotes coal related projects in particular the efficient protection of the environment and the improvement of the use of coal as clean energy source.

4. EU Regional Policy (Cohesion and Structural Funds)

Thematic objectives of the regulations for European Structural and Investments Funds 2007-2013 and the proposal for 2014-2020 is to promote climate change adaptation, risk prevention and management; and protecting the environment and promoting resource efficiency.

5. EU External Action Instruments

- Development Co-operation Instrument (DCI)
- Instrument for Pre-Accession Assistance (IPA) - assistance to countries engaged in the accession process to the EU
- The European Neighbourhood Policy Instrument (ENP)
- Partnership Instrument (PI)
- The European Development Fund (EDF)

3) EC International Activities

The ongoing cooperative efforts to reduce methane emissions through GMI and GGFR are having a significant impact on global climate change in the near term, while delivering valuable long-term energy, economic and environmental benefits.

EC activities are focused on supporting projects in third countries to further develop and demonstrate technologies to reduce methane emission and to remove barriers to project development. The EC has provided technical, financial, and capacity building support to numerous methane reduction projects and activities around the world. Methane emission reduction efforts are integrated in the EC Development, Enlargement, Neighborhood and External policy which provide substantial funding opportunities. There is no European statistic available to show the projects and achievements in terms of methane emission reductions.

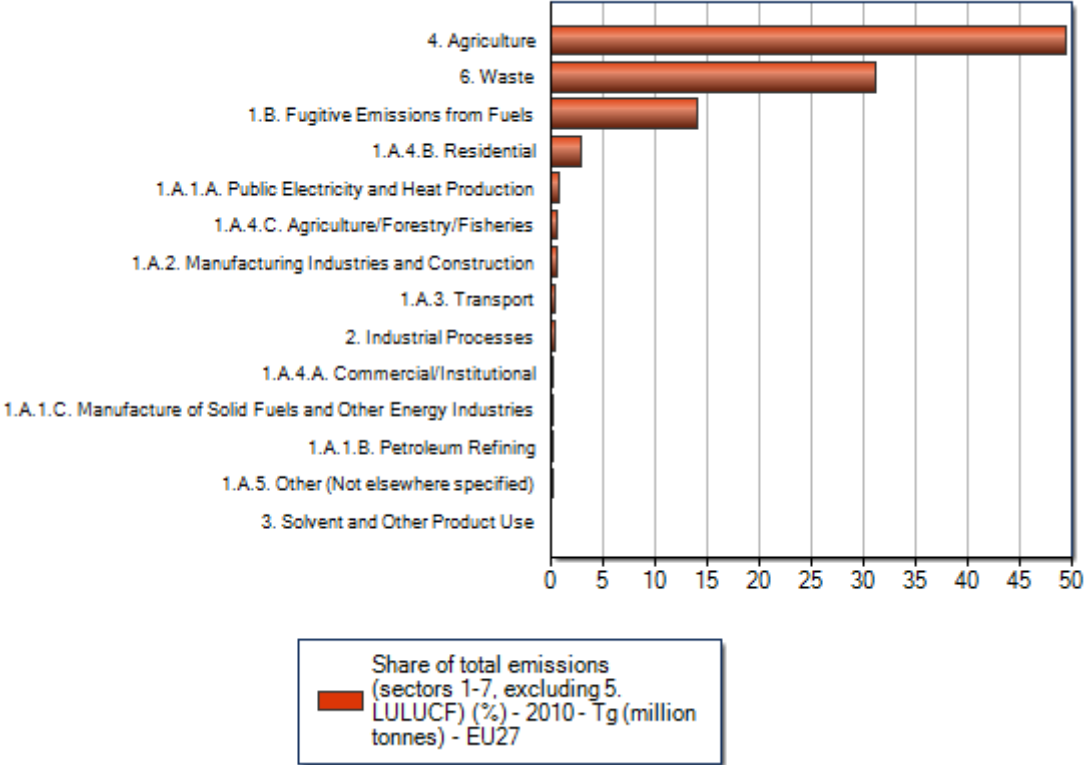
² Horizon 2020 COM proposal : http://ec.europa.eu/research/horizon2020/index_en.cfm

EC is actively engaged in the new launched Climate and Clean Air Coalition (CCAC) to Reduce Short-Lived Climate Pollutants with a focus on reducing black carbon, hydro fluorocarbons (HFCs), and methane. Sweden was one of the six founding Partner countries, and the EC and other 9 EU Member States joined the Coalition which has since grown to 28 Partners countries and 50 non-state organizations including the World Bank. The EC has committed 1 Mio € to the CCAC for their first actions and will work to ensure that the GMI and CCAC develop an optimal collaboration to the benefit of both initiatives and respective partners and most importantly to overall global methane reduction opportunities.

4) Sector Action Plans

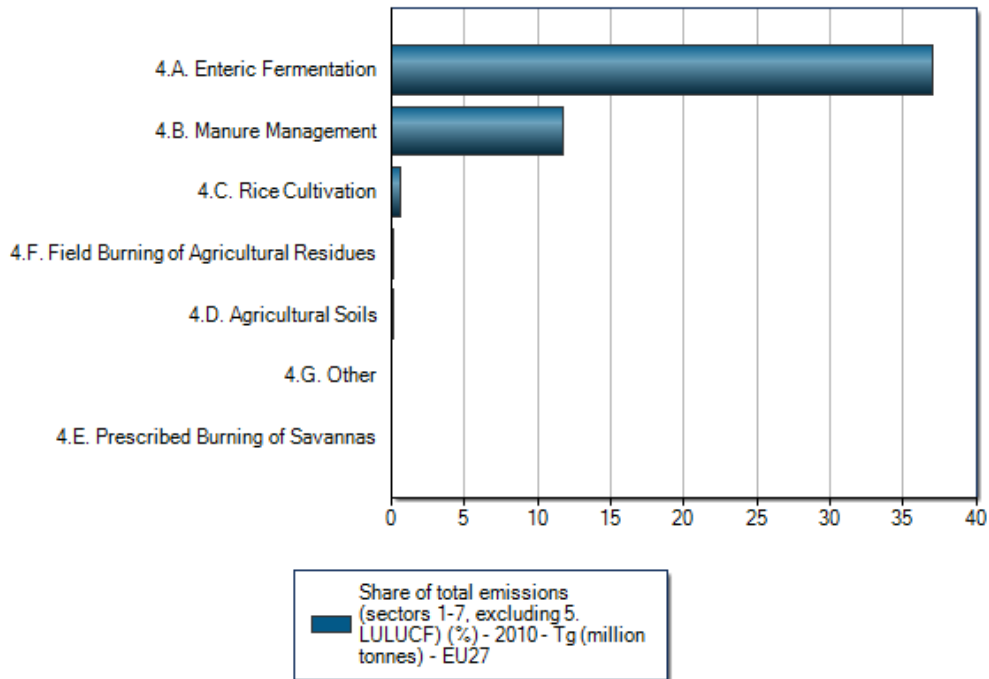
Agriculture Sector

According to national GHG inventories, agriculture is responsible for around half of EU27 methane emissions from agriculture. The graph below shows the EU-27 Member States methane emissions share by IPCC sector (source: EEA³).

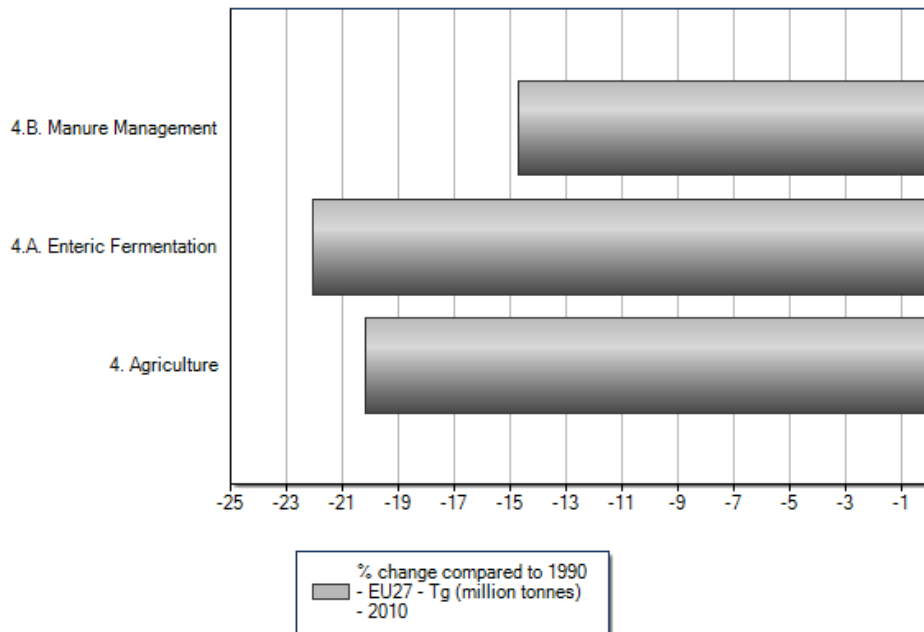


Enteric fermentation and manure management are the main contributors to methane emission in the EU. The graph below shows EU – 27 Member States agricultural methane emissions share by subsector (source: EEA¹)

³ <http://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer>



Agricultural methane emissions in the EU have been decreased in the past. The graph below shows percentage changes from 1990 to 2010, for the whole agricultural sector and for enteric fermentation and manure management (source: EEA¹)



One of the drivers for technology development in the agricultural sector has been the implementation of EU environmental, climate and agricultural policies.

It is to be noted that some environmental policies are targeting other environmental issues (e.g. water) but their implementation can bring indirect co-benefits in terms of air quality and emissions reductions. For instance, the Nitrates Directive, in place since 1991 and aiming at

protecting waters from nitrates pollution from agricultural sources, has been contributing, inter alia, to better manure management systems.

Integration of environmental challenges in other policies is also a key driver for technology development. For instance, rural development funds have been providing support for co-funding investments in agricultural projects, e.g. the construction of manure storage facilities.

The EC contribution to the GMI will be, inter alia, to illustrate existing case studies, technologies and successful policy approaches in the agricultural sector. In addition EU Member States have specific methane reduction plans targeted to agriculture with a range of different measures including supports for anaerobic digestion plants and other projects.

Municipal Solid Waste Sector

The EU Strategy on Municipal Waste concentrates on limiting the amount of biodegradable waste going into landfills. Therefore, there are no methane reduction targets or methane recovery goals at EU level. Member States are free of setting national targets or goals. Currently, there is no reporting obligation concerning methane recovery.

The general EU approach to limiting emissions of methane from landfills and to managing biodegradable waste is based on [Council Directive 1999/31/EC](#) of 26 April 1999 on the landfill of waste.

One of its aims is to reduce the production of methane gas from landfills, inter alia, in order to reduce global warming, but also for safety reasons and other nuisances. This aim is achieved by two measures:

- the reduction of the disposal of biodegradable waste and
- the requirements to introduce landfill gas control.

The first aim is achieved by setting targets to be met by Member States. It requires gradual reduction of amount of biodegradable municipal waste (BMW) landfilled up to 35% by 2016 and by 2020 for some MS in relation to BMW generation of 1995.

Further policy documents since 2010 are

- Communication from the Commission on future steps in bio-waste management in the European Union - COM(2010)235 final;
- The Roadmap to a Resource Efficient Europe (COM(2011) 571).

Further limiting of landfilling of biodegradable waste up to "zero landfilling" is marked as priority policy.

Member States are reporting from 2009 and in March 2013 Eurostat has published a press release presenting the new data 2011 about municipal waste generation and treatment:

http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/8-04032013-BP/EN/8-04032013-BP-EN.PDF

The Commission shall in 2014 publish an analysis and if relevant legislative proposal for further targets on limiting landfilling of BMW.

As for gas control, landfill operators must ensure that the gas is collected, treated and used. The residual gas that cannot be used to produce energy must be flared. Finally, gas monitoring is required to take place monthly in the operational phase and every six months in the after-care phase.

The above provisions are compulsory for all landfills built after the date of entry into force of the Directive -16 July 2001 - while existing landfills have to comply with the Directive not later than 16 July 2009.

This means that for all Member States it is compulsory to install gas collection and treatment installations at all landfills receiving biodegradable waste which generates such gas.

There is currently a Working Group which works on the preparation of more detailed guideline for control of landfill gas. The guidelines shall be published by early 2014.

Of course, methane generation potential would vary in Member States depending on how much they rely on landfills to dispose of their waste and to what extent they apply others waste treatment techniques such as incineration, composting and recycling.

Projects in methane recovery and use

In comparison to earlier info the project and funding opportunities linked specifically to climate change are no longer under DG ENV but has been moved to DG CLIMA – see link on funding possibilities: http://ec.europa.eu/clima/funding/index_en.htm

There are many projects funded by the Commission on management of municipal waste (especially under Cohesion and Structural Funds) but they rarely can be attributed directly to methane management.

Coal Mines Sector

Coal Mine Methane (CMM) accounts for just 5% of total EU methane emissions, according to the latest estimates from the European Environment Agency. In absolute terms, methane emissions from coal mining in the EU are in decline, since hard coal production has followed a downward trend over many decades.

Annual CH₄ emissions for the solid fuel sector (1B1) for each country in the EEA region covering the years 1990 to 2010 can be downloaded (www.eea.europa.eu/data-and-maps/data/national-emissions-reported-to-the-unfccc-and-to-the-eu-greenhouse-gas-monitoring-mechanism-6). The data shows the trend in CH₄ emissions from the coal sector in every EU Member State since 1990 and differentiates between deep-mined coal, coal storage & transport, open-cast coal mining.

More information is given in the national inventory submission to the UNFCCC. According to the 2011 reports the UK recovered 17% of methane emissions from underground mines and

Poland 70 % – gas which was either used or flared. For other EU member states, the data can be taken from their UNFCCC submissions.

Methane emissions from surface coal mines are not measurable and are considered to be minimal, methane in near surface the coal-bearing strata having largely already migrated to atmosphere over geological time. Whilst a (low) factor can be used for reporting purposes, it is of no practical use since the actual methane emissions will vary significantly from one mine to another, and are typically not capable of being captured or recovered. Open-cast mines are therefore not in special focus of EU policy.

Methane can be released from the remaining coal in closed underground mines over the abandoned roadways and workings and over long time after the closure of the mine. This can lead to further methane emissions at the surface potentially causing harm to residents and damaging the environment. Methane emissions from closed down coal mines at the surface are relatively minor at any one point (often only measurable in ppm, if at all), but are spread over a huge area and therefore may sum up to high amounts of methane. Methane from closed underground mines is referred to as Abandoned Mine Methane (AMM) and is captured and exploited via degassing pipes installed during the closure of the mine or new boreholes into old roadways. It is not possible, however, to capture AMM at the surface due to the large-area dispersion. AMM is the only type of CMM exploitation in France, the most important in the UK and Germany (roughly about 2/3 of the total utilized methane) and has an essential share in the Czech Republic.

As a safety precaution to avoid any risk of explosion, mining legislation in Europe stipulates that methane concentrations in underground workings have to be kept below 1%. Methane is primarily a safety hazard – an unwanted gas that must be removed from mines either by drainage or by ventilation. The volumes of methane emitted from a coal mine vary enormously and cannot be linked to production levels since the gas can infiltrate into the mine from unworked areas. Gas contents of the coal also vary from seam to seam, with depth or regionally. The use of CMM as a source of useful energy is of secondary importance to safety. In many EU countries, CMM has been successfully exploited using a variety of techniques at both operating and abandoned mines.

A main driver for the capture and recovery of coal mine methane has been the implementation of EU environmental, climate and energy policy. The environmental impact assessment for coal mining operation requires to mitigate negative impacts on the environment and climate and to mitigate methane emissions.

The EU Directives and Regulations on Health and Safety at work are the main regulatory framework to reduce methane emissions. Under the privacy of safety detailed regulation was developed and implemented.

There is no EU legislation to penalise emitters of methane caused by coal mines but a strong encouragement to capture and utilise the methane as a valuable energy resource. For example, in Germany CMM is treated like a renewable resource and is therefore eligible for generous feed-in tariffs when it is used to generate electricity. In the UK, CMM projects have benefited from certain tax breaks and were even included in the UK Emissions Trading Scheme which rewarded its use but in no way penalised mine operators who continued to vent methane. The UK approach led to many small generation projects and also the installation of flares which had not previously been considered because there had been no economic driver to oxidise methane to less potent GHGs – water and carbon dioxide. However, once removed

from the mine, it is good policy to incentivise the use of CMM – as in Germany and the UK. To that end, the EU has actively supported R&D and demonstration of different techniques to capture and use CMM (see Table).

A method to reduce the methane yield in coal mine workings is the pre-drainage by surface wells. This, however, can only be applied under favourable conditions, i.e. relatively high permeability of the coal and limited depth of the seams and, thus, confining drilling depth and costs. In addition to methane reduction during mining, methane production and gas utilisation, generation of CERs can be a potential driver. Methane drainage in virgin areas can be eligible under the CDM mechanism if a defined time-span between methane production and subsequent mining of the seam is not exceeded. The produced gas has typically very high CH₄ contents of around 90 %, which increases the calorific value significantly and can facilitate feeding into natural gas pipelines.

Where methane is drained from coal seams at high concentrations, its use is relatively straightforward, although not always cost effective. Unfortunately, much of the CMM emitted from coal mines is contained in the ventilation air (VAM or ventilation air methane). This is much more problematic to exploit because it is not directly combustible and must be oxidised in special, often very large devices. The very first demonstration of VAM oxidation was in the UK at Thoresby Colliery in 1994. Today, thermal and catalytic processes are available at scale. They are not a commercial proposition and can only be contemplated if rewarded with GHG emissions reduction credits. This is the case in China where a UK investor is developing a CDM-approved project and to demonstrate the world's first near-zero methane emission coal mine at Duerping in Shanxi Province. The EU ETS was the driver for this project since CDM credits were allowed in the ETS, although this will not be the case in the future since the EU has decided that Certified Emission Reductions (CERs) under the CDM will no longer be allowed in the ETS. The Duerping project shows how EU policy can have a global impact, which is by far the most important consideration in EU policy making. As EU coal imports grow, it will be CMM emissions outside the EU that will have the biggest climate impact and EU policy must therefore reflect this reality.

Cooperation and projects on methane recovery and use

The European Commission has been engaging in various bilateral and multilateral initiatives to exchange best practices, policies and technologies, on the coal value chain (from production, coal mine methane to use), carbon capture and storage (CCS).

Bilateral coal and clean coal working groups and workshops have been conducted with governmental and industry representatives from India, South Africa, China, Kazakhstan and other third countries. CMM and CBM technologies including methane utilisation solutions were addressed and further activities like workshops, studies and project co-financing foreseen in the future.

The EC's has actively supported supported R&D and demonstration of different techniques to capture and use coal mine methane within the EU and in selected third countries.

Project title and acronym	Programme	Duration	Description
AVENTO – Advance tools for ventilation and methane emissions control	RFCS	Jul 2012 – Jun 2015	To develop new concepts on ventilation monitoring systems, taking into account the new risks appearing in the current and future production fields, in order to improve the safety and climatic conditions at the working areas, with special attention to the actions to be taken after severe methane incidents. To reduce the costs involved in ventilation, analysing different aspects such as the dynamic regulation of air flow (“Ventilation On Demand”), and new systems of fan control for better efficiency and reliability.
CARBOLAB – Improving the knowledge of carbon storage and coal bed methane production by “in situ” underground tests	RFCS	Jul 2009 – Jun 2013	The proposal aims to improve the practical knowledge of the physical and chemical processes involved in the Enhanced Coal Bed Methane (ECBM) technique, by means of a series of “in situ” tests of CO ₂ injection and CBM production.
COGASOUT – Development of novel technologies for predicting and combating gas outbursts and uncontrolled emissions in thick seam coal mining	RFCS	Jul 2010 – Jun 2013	To develop new technologies that predicts gas outbursts and emissions from thick and/or steeply dipping thick coal seams. The results should help when draining coal gas from seams before mining.
COMETH - Coal mine methane new solutions for use of CMM- reduction of GHG emissions	FP7	Nov 2008 – Oct 2011	Develop, build and test units for new CMM utilisation technologies (use of CMM vented from a mine and CMM liquefaction) and analyse the emission reduction potential of such CMM utilisation.
GHG2E – Greenhouse gas	FP7	Oct 2011 – Mar 2015	To achieve significant improvements in methane drainage efficiency and purity in

recovery from coal mines and unmineable coalbeds and conversion to energy			coal mines in the emerging economies of China and India, where methane drainage is employed with relatively low yields of gas and purity; and to develop a novel and effective gas drainage techniques for the ultra-thick seam and gassy mining operations in Europe.
LOWCARB – Low carbon mine site energy initiatives	RFCS	Jul 2009 – Jun 2013	Investigate and develop modern technologies and techniques that can significantly reduce the coal mining industry’s carbon footprint in terms of both emissions of CO ₂ and CH ₄ and operational energy consumption whilst remaining technically and commercially competitive
RECOPOL - Reduction of CO ₂ emission by means of CO ₂ storage in coal seams in the Silesian	FP5	2001-2005	Combined research and demonstration project to investigate the technical and economic feasibility of permanently and safely storing CO ₂ in coal seams whilst simultaneously producing

Sources: CORDIS and RFCS

Oil & Gas Sector

Emission from oil & gas systems account for 8, 9 % of total EU emissions and are expected to decline.

In the EU and in the European Economic Area (EEA) gas flaring without specific permission of a national government is not allowed. Such permissions can be given because of technical or safety reasons to avoid explosion by preventing air from entering the system. Flares allow a quick and controlled combustion when gas needs to be released from pipes in an emergency and for maintenance. Very small volumes of gas may be released without being burnt (emergency venting). Hence the methane reduction potential in the Oil & Gas sector in the EU and in the European Economic Area (EEA) is marginal. In addition a strong policy to reduce gas leaks has been launched within the industry, and particularly, significant reductions have been reported in the UK sector of the North Sea where a new ambitious objective of an additional reduction of 50% has been fixed.

A new EU Directive⁴ on safety of offshore oil and gas operations entered into force on 18 July 2013. The new rules (initially proposed to take the form of a regulation) will make sure that the highest safety standards will be followed at every oil and gas platform across Europe. It will also ensure that we react effectively and promptly should an accident nevertheless occur. This would help minimize the possible damage to the environment and the livelihoods of coastal communities. The new directive sets clear rules that cover the whole lifecycle of all exploration and production activities from design to the final removal of an oil or gas installation.

Companies and their subsidiaries registered and operating in Europe have to implement a corporate major accident and environmental damage prevention policy and to apply global best practises with a statement that their operation in third countries are covered by this policy.

A further driver to contribute to the reduction of gas flaring worldwide is the revised Fuel Quality Directive 2009/30/EC. It amends a number of elements of the petrol and diesel specifications as well as introducing in Article 7a a requirement on fuel suppliers to reduce by 6% the lifecycle greenhouse gas intensity for fuel and other energy supplied for road transport (Low Carbon Fuel Standard) by end of 2020.⁵ In addition the Directive establishes sustainability criteria that must be met by biofuels if they are to count towards the greenhouse gas intensity reduction obligation. Due to the fact that the EU imports over 60% of its gas and over 80% of its oil, the European Commission expects that the requirement on the life-cycle greenhouse gas emission reduction will contribute to gas flaring reduction also in non-EU countries.

The EU is fully aware of significant negative effects of gas flaring: waste of a valuable non-renewable energy resource, massive greenhouse gas (GHG) and other emissions, and negative health effects and undertakes activities and projects in developing countries. Therefore the EU supports investment projects of various International Financial Institutions in area of associated petrol gas utilisation, including the European Bank of Reconstruction and Development, the European Investment Bank and the World Bank Group. The EC is strongly engaged in the Global Gas Flaring Reduction Initiative (GGRF). GGFR is a public- private partnership led by the World Bank to support national governments and the petroleum industry in their efforts to reduce flaring and venting of gas associated with the extraction of crude oil by promoting effective regulatory frameworks and tackling the constraints on gas utilization, such as insufficient infrastructure and poor access to local and international energy markets, particularly in developing countries.

Cooperation on primary energy savings, including the utilization of the associated petrol gas, is on the agenda of the EU Dialogues with the oil and gas supplier countries. Inter alia, the obstacles for associated petrol gas utilization, related to specific geographical and climate conditions, are discussed with our partner countries.

⁴ Directive 2013/30/EU on safety of offshore oil and gas operations and amending Directive 2004/35/EC. Link to EN version is: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:178:0066:0106:EN:PDF>

⁵ Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC (Text with EEA relevance)