Session SBI41 (2014)

Session started at 01-09-2014 00:00:00 [GMT+1]
Session closed at 28-11-2014 23:59:59 [GMT+1]

A compilation of questions to - and answers by – Italy
Exported 29/11-2014 by the
UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Question from: United States of America at Tuesday, 28 October 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: Double counting prevention

How do you plan to prevent double counting with the host countries of projects that generated CERs that your country plans to use towards meeting its pledge in the pre-2020 period?

If a host country refuses to adjust its reporting towards its progress to its targets to reflect CERs it exported, do you still plan to count them?

Answered by: Italy at Tuesday, 25 November 2014

Net international transfers from market based mechanisms should be appropriately deducted from or added to a pledge. That is, when a Party acquires mitigation outcomes from another Party to meet its commitments, these should be credited to the acquiring Party (additions) and debited from the originating Party (subtractions). In this way, the integrity of the pledge is maintained. Allowing for such additions and subtractions while respecting agreed standards is the fundamental purpose of an accounting system for flexible mechanisms.
Parties agreed on exactly such a system under the Kyoto protocol which provides a robust accounting framework for market based mechanisms including the generation and use of CERs. Italy, as all other EU Member States, will follow these rules from 2008 until the end of the Kyoto Protocol's second commitment period in 2020. This means that all EU accounting towards UNFCCC commitments is underpinned by transparently measured, reported and reviewed emissions and supplementary information on transactions. The measurement, reporting, review, recording and tracking of this information is in accordance with UNFCCC agreed rules undertaken in UNFCCC certified registry systems.

Question from: Japan at Tuesday, 30 September 2014
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Title: Enhancement of measures

What kind of systems and processes work to improve existing policies and measures in response to the progress towards the achievement of emission reduction target

Answered by: Italy at Tuesday, 25 November 2014

Indicators, as number of dwellings with shell insulation, transport fleet update, industry value added, and related CO2 emissions for each sector, can be used to assess

the effects of existing policies and measures on GHG emissions reduction. Moreover starting from 2015 according with monitoring regulation Reg. 525/2013/EU each Member State should implement a National System for policies measures and projections in order to follow the reaching of target and improve policies and measure or implement new one wherever the trend appears not to be in line with the target.

Question from: Japan at Tuesday, 30 September 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: Frequency of revision of GHG projectionsHow often are GHG projections revised?

It would be helpful if the party could describe the institutional arrangement and process for the revision of projections and policies and measures.

Answered by: Italy at Tuesday, 25 November 2014

According with the Monitoring Mechanism Decision 480/2004/EC as amended by Regulation 525/2013/EU, Italy revises its GHG projections every two years with a mandatory report to EU Commission. At National level, as reported in chapter 4 of NC6, the Ministry of the Environment, Land and Sea (IMELS) elaborates the "National plan for the reduction of greenhouse gas emissions" that is discussed in the Inter-Ministerial Committee for Economic Planning (CIPE). After the Kyoto Protocol ratification the 4th CIPE deliberation 123/2002 established an inter-Ministerial Technical Committee for GHG emissions (CTE). CTE is chaired by the IMELS and included representatives of the Ministries of Economy and Finance, Economic Development, Agricultural, Food and Forestry Policies, Infrastructures, Transport, University and Research, Foreign Affairs and of Regions. The main task of the CTE is to monitor the emissions trend, the status of the implementation of the policies and measures identified in the overall national strategy of GHG emissions and in general to assist IMELS in elaborating the national plan for the reduction of greenhouse gas emissions to be proposed to CIPE for adoption. The financial support and legislative instruments to implement the plan elaborated by CIPE are identified through the Budget Law and allocated to the central and local bodies.

Question from: Japan at Tuesday, 30 September 2014
Category: All emissions and removals related to its quantified economy-wide emission reduction target
Title: Major drivers for GHG emission trends

What are the major drivers of decrease of total GHG emissions compared to 1990? It would be helpful if the party could also describe the contribution of each driver to total reduction.
In addition, what are the most effective policies and measures for each driver?

Answered by: Italy at Tuesday, 25 November 2014

Total greenhouse gas emissions, in CO2 equivalent, excluding emissions and removals from LULUCF, have decreased by 11.4% between 1990 and 2012, varying from 519 to 460 CO2 equivalent million tons (Mt). In 2012, the greatest part of the total greenhouse gas emissions is to be attributed to the energy sector, with a percentage of 82.6%, followed by agriculture and industrial processes, accounting for 7.5% and 6.1% of total emissions, respectively, waste contributing with 3.5% and use of solvents with 0.3%. From 1990 to 2012, the level of decrease is equal to 9.1% for the energy sector, 26.5 % for the industrial processes, 38.3% for use of solvents, 16.0% for agriculture, 17.5% for waste.
For the energy and industrial processes sectors, the emission trend is generally driven by the economic and energy indicators, as GDP and total energy consumption. For energy, the level of decrease, especially from 2004, is to be attributed to the results of the policies adopted at European and national level to implement the production of energy from renewable sources and also a shift from petrol products to natural gas in producing energy has been observed as a consequence of the starting of the EU greenhouse gas Emission Trading Scheme (EU ETS) in January 2005. From 2009, an additional drop of the sectoral emissions is due to the economic recession (e.g in manufacturing industries and construction but also increase in efficiency especially in the chemical sector).
In the industrial processes sector, the decrease in emissions is mostly to be attributed to a decrease in chemical industry and metal production emissions. The decrease of GHG emissions in the chemical industry (-82.5%) is due to the decreasing trend of the emissions from nitric acid and adipic acid production (the last production process sharply reduced its emissions, due to a fully operational abatement technology). Emissions from metal production decreased by 71.3% mostly for the different materials used in the pig iron and steel production processes. It should be noted that the economic recession has had a remarkable influence on the production levels affecting the energy and industrial process sectors, with a consequent notable reduction of total emissions, in the last four years.
In the agriculture sector, the main drivers behind the downward trends are the reduction in the number of animals, especially cattle, the variation in cultivated surface/crop production as well as the use of nitrogen fertilizers, mainly due to the Common Agricultural Policy (CAP) measures. There has also been a significant increase in the recovery of the amount of biogas produced from animal manure in the last years contributing to the reduction of total emissions.
In the waste sector, although the continuous increase of waste production, solid waste disposed on land has decreased due to the waste policies in place in the last years, the increase of waste incineration, the composting and mechanical and biological treatments and the increasing practice of recyclable waste collected. Also, the increased percentage of methane recovered has led to a further reduction in emissions.
In absolute terms the total reduction between 2012 and the base year, equal to 59 Mt of emissions in CO2 equivalents are driven by the reduction in manufactory industry (-32 Mt), in energy industry (-10 Mt), and in the agriculture sector (-6 Mt) while increase of emissions have been observed in the transport sector (+2 Mt) and in the residential and commercial sector (+ 6 Mt). In these last two sectors significant reduction of emissions are expected in the future years due to the implementation of the adopted measures to reduce GHG emissions.

Question from: Brazil at Tuesday, 30 September 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: Tech transfer to Brazil

Please, provide the assumptions and conditions in order to consider a technology transfer to an Italian company in Brazil (Pirelli) – (NC6, page 323, BR) – as a technology transfer from Italy to Brazil.

Answered by: Italy at Tuesday, 25 November 2014

Italy participates many cooperation activities and promotes transfer of technology through different initiatives in Brazil as well as in many other Countries in the world. Within this cooperation activity also the private sector is involved, representing a channel to transfer and promote innovative technologies. Companies based in Italy but with a strong and long lasting international presence are considered to be good means for spreading technology: Countries involved can participate and benefit of the results of the development of a technology where also private sector participates leading to a win-win situation.

Question from: Brazil at Tuesday, 30 September 2014
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Title: Projection

1. In *"CTF Table 3 - Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects",* NC6 page 289 (BR), implemented measures are marked with (*) but the same table in the other file – **BR CTF** (ita_2014_v3.0_formatted.pdf) – they are not marked the same way. According to the instructions, (*) should be used to indicate that a mitigation action is included in the 'with measures' projection. Are such implemented measures included in Italia's 'with measures' projection?

Answered by: Italy at Tuesday, 25 November 2014

There was a typo. The implemented measures marked with (*) in the CTF Table 3 are consistent with those reported in the file –BR CTF (ita_2014_v3.0_formatted.pdf) and are included in the "with measures" scenario for projections. Moreover in the column "status of implementation" the relevant information for each measures is reported where implemented measures are included in the with measure scenario while planned measures are included in the with additional measure scenario.

Question from: Brazil at Tuesday, 30 September 2014
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Title: Biofuels under the commitment

Italia established a commitment by 2020 with 17% of its national final energy consumption coming from renewable sources. How much of this renewable energy would come from imported biofuels?

Answered by: Italy at Tuesday, 25 November 2014

The 17% target has been established at EU level by Directive 28/2009/EC. For this target, as reported in the National Energy Strategy, Italy has envisaged to comply with a more ambitious target (about 21%). As for biofuels a sub-target of 10% for transport fuels consumption has been established. Nowadays a planned share of biofuels import is not yet defined.

Question from: Brazil at Tuesday, 30 September 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: Budget for support programmes in developing countries

How the budget for support programmes in developing countries are established?

Answered by: Italy at Tuesday, 25 November 2014

Italy has implemented a number of national and international sectoral and cross-sectoral policies expected to have direct and indirect effect on the reduction of GHGs. Every three years the Italian Development Cooperation reviews its cooperation programme guidelines which include a list of priority sectors and of eligible countries. IMELS supports the internationalization of the Italian private sector and technology transfer though Bilateral cooperation and World Bank Funds

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Question from: Brazil at Tuesday, 30 September 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: Capacity building or technology development/transfer in developing countries

1. Which is the general guidance for Italy to elect capacity building or technology development/transfer support programmes in developing countries?

Answered by: Italy at Tuesday, 25 November 2014

In the specific area of climate change, the Italian Development Cooperation both at the international policy level and at ODA project level has been promoting the transfer of know-how and technology in support of integrated planning and management decision-making.
More particularly, also through of institutional capacity consolidation initiatives, focal attention has been directed to:
· Supporting the countries and the communities that are most vulnerable to climate change to adapt to the changing conditions (such as the Small Island Developing States and the mountain communities).
· Strengthening the global partnerships for sustainable development (such as the Mountain Partnership and the Global Island Partnership).
· Developing tools and methods for the actual implementation of Cancun biodiversity safeguards at national scale (UNFCCC COP 16) in the framework of REDD+ activities.
· Supporting the translation of universal environmental sustainability goals into national level actions within the post 2015 agenda and the SDGs process, promoting the ecosystem approaches for the synergistic implementation of the three Rio conventions.

Question from: Brazil at Tuesday, 30 September 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: Metric

1. Italy has chosen GWP as reported in IPCC-AR4. Is this choice in line with the European Union commitment? Has the European Union already decided to use IPCC-AR4 in its inventory?

Answered by: Italy at Tuesday, 25 November 2014

Italy has chosen GWP as in the IPCC-AR4 for its commitment in 2020 according to the values agreed under the Convention and the Kyoto Protocol for the reporting of emission estimates during the second commitment period 2013-2020. This is also in accordance with the EU commitment.

Question from: Saudi Arabia at Tuesday, 30 September 2014
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Title: The assessment of the economic and social consequences of response measures

Could Italy provide information on its experience with reporting on its different efforts and activities to address the adverse impacts of response measures, since Italy has provided substantial amount of information in its NC regarding its efforts to minimize the adverse effects of response measures but did not do so in the BR? Will Italy be providing information in the next BR?

Answered by: Italy at Tuesday, 25 November 2014

As it has been decided to annex the BR to the NC a lot of effort was put in avoiding as much as possible duplication of the information in the document. In the next BR due by 2015, as a stand alone document, we will provide the information needed according to the guidelines and in any case an update of the information reported in the last national communication.

Question from: Egypt at Tuesday, 30 September 2014
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Title: Technology transfer

how can we build sustained technology transfer bridge to adopt MRVs system and GHG inventory between annex 1 and non annex 1 countries ?

Answered by: Italy at Tuesday, 25 November 2014

In our view in this field it is more appropriate to refer to capacity building activities instead of technology transfer. For example with respect to the emission inventory and monitoring and verification process, technology transfer could be related to the availability of a software for the preparation of the inventory, the data archive and the management of QA/QC activities but a software, the IPCC software, is already available, enabling Parties to prepare a basic emission inventory based on the methodologies and emission factors reported in the adopted Guidelines; moreover an online platform, the UNFCCC CRF Reporter, is under finalization and it will allow the Parties to archive emission data and export the CRF tables with a related good level of QA/QC.
A reliable MRV system is more about the technical expertise of the persons involved and less about the technologies to be used. In this sense, a relatively simple IT tool would be enough to manage and process the data needed for the compilation of inventories or for tracking progress with relevant national mitigation actions implemented.
Constant sharing of good practices and capacity building between Annex I and non-Annex I Parties has happened during the past 20 years in the framework of the

UNFCCC and its Kyoto Protocol and also outside this framework. Some examples of capacity building in the framework of the UNFCCC would be the Consultative Group of Experts and also the knowledge sharing during the expert reviews of inventories under the Kyoto Protocol. The newly agreed International Consultation and Analysis is also expected to enhance the knowledge sharing between Annex I and non Annex I Parties.
So in terms of capacity building we could imagine, with few additional costs, the sharing of basic information, methodologies and emission factors for the whole inventory or for specific categories and sectors, that could be managed online sharing folders with one of the numerous free software available.
Anyway the country has to guarantee a solid MRV system, meaning that the institutional arrangements with other agencies and ministries which collect data in order to ensure that the information needed for the inventory purposesshould be in place. For tracking progress with the actions, depending on the scale of the action (sectoral or cross sectors), more institutions can be involved but a coordinating entity would be needed. In this sense, if resources are made available bilateral cooperation could be established with the aim to share the national experiences and circumstances and improve the system itself.

Question from: Algeria at Monday, 29 September 2014
Category: All emissions and removals related to its quantified economy-wide emission reduction target
Title: Assumptions, conditions and methodologies related to the attainment of its quantified econ
Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
[1]. As a member of EU bubble, Italy doesn't pledge a national mitigation target under the UNFCCC. According to the BR1 and TRR, for those sectors not covered by EU-ETS, the emission reduction target for Italy is 13% decrease compared to 2005. However, it is not clear how much effort Italy is going to make on sectors covered by EU-ETS, nor the effort as a whole, compared with its base year level. What additional information would Italy provide in order to make its effort transparent?

Answered by: Italy at Tuesday, 25 November 2014

The EU-wide cap under the EU ETS is determined for all EU Member States and the three EEA EFTA States (Iceland, Norway and Liechtenstein) without reflecting a specific share for each Member State so that the reduction effort is placed on the industrial sector of the Continent as a whole. The allocation of allowances takes place through auctions and free allocation. The share of allowances auctioned on behalf of each Member State in each year is public and can be obtained from the relevant auction platforms. However, free allocation is provided on the basis of EU-wide rules to installation operators within a certain limit. For each of the nearly 12.000 installations in the EU ETS, the allocation has been calculated based on the common rules. A breakdown of the assigned amounts per Member State is not available. Still the breakdown of emissions per Member State is publicly available on the EEA website based on the annual emissions reports by ETS operators

(http://www.eea.europa.eu/data-and-maps/data/european-union-emissions-trading-scheme-eu-ets-data-from-citl-6).
In this sector there are no direct politics and measures at national level, however the emissions are affected by the implementation of other policies as energy efficiency or use of renewable fuels. In the CIPE deliberation 17/2013 (Annex I and II), there are the estimates of impact for each measure also on ETS sectors.

Question from: Brazil at Monday, 29 September 2014
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Title: Measures reported as a direct effort to mitigate climate change

Projections are presented for a "with measures" and a "without measures" scenario. It is claimed that "it is not possible to elaborate a scenario without measures mostly because many measures adopted in the last years are structural and linked with many sectors so that it is impossible to separate the effects of past measures and upcoming measures". Usually, projections are presented for a "with measures" and a "without measures" scenario. Measures that have been implemented since 1990, before the Kyoto Protocol has been signed and the Convention has been established should not be classified as a "with measures" scenario, since they have not been put in place because of specific actions taken by the Party to mitigate climate change, which is the main focus of such analysis. This type of classification presented by Italy also has the advantage of diminishing comparability with other Parties reporting. It is worthwhile noticing that the latest year for which a policy and measure implemented has been reported on CTF Table 3 (Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects) is 2007. Can the Party clearly state that all measures reported have been put in place as a direct effort to mitigate climate change and reduce GHG emissions?

Answered by: Italy at Tuesday, 25 November 2014
The measures included in the "with measures" scenario have been implemented or adopted up to December 2010. It is important to underline that the 1st National Plan for the reduction of greenhouse gas emissions has been elaborated in 1994 and the oldest PAM reported in the table 4.17 (chapter 4 of NC6) is for separate collection for waste sector that is Legislative decree 22 on 5 February 1997.
Moreover it is worth to stress that each measure has been implemented for GHG reductions as well as for promotion & development, to increase security of supply and so on.

Question from: Brazil at Monday, 29 September 2014
Category: All emissions and removals related to its quantified economy-wide emission reduction target
Title: "Civil" sector

In section 4.1 of the report, it is claimed that by 2020, Italy should reduce its GHG emissions by 13%, compared to 2005 levels in all sectors not covered by the EU ETS, such as transport, **civil**, agriculture and waste. "Civil" is not a designated sector in the

GHG emissions inventory. Is this related to public/commercial/residential emissions? What type of emissions is encompassed in this sector?

Answered by: Italy at Tuesday, 25 November 2014

We confirm that "civil" sector is included in public/commercial/residential emissions. All the emissions in the civil sector are related with the use of fossil fuels as reported in CRF Table 1.A.4(a).

Question from: Brazil at Monday, 29 September 2014
Category: All emissions and removals related to its quantified economy-wide emission reduction target
Title: Use of mechanisms 2

It is mentioned in BR1 that legally binding trajectories define the national annual target pathway to reduce EU GHG emissions from 2013 to 2020. National annual limits have already been adopted throughout the period for each Member State. It is also stated that the EU expects to achieve its 20% target for the period 2013 – 2020 with the implementation of the ETS Directive and the ESD Decision for the non-ETS sectors. However, the entire analysis addresses the EU and not Italy. Can the Party provide a specific analysis of its own position with regard to the potential use of market-based mechanisms to achieve Italy's national emission reduction target for the period 2013 – 2020?

Answered by: Italy at Tuesday, 25 November 2014

For the first years of the 2013-2020 commitment period projections do not show the need to buy additional credits and the credits already planned should be sufficient to achieve the target. Due to the uncertainty in the growth of the national economy at the moment it is not possible to estimate the amount of credits potentially needed. The update of projection in 2017 will give us a more complete figure on this matter. Anyway Italy, as investor Party, contributes with 1.6% of world-wide CDM project portfolio and is involved directly, as government, in 47 registered CDMs. The credits CERs and ERUs are mainly purchased, by Italian Government, through the Italian Carbon Fund (ICF). Italy also contributes to the Community Development Carbon Fund (CDCF) and to the BioCarbon Fund (BioCF) and the World Bank Carbon Funds will deliver credits until the end of the second commitment period.

Question from: Brazil at Monday, 29 September 2014
Category: All emissions and removals related to its quantified economy-wide emission reduction target
Title: Use of Mechanisms

Table 2(e) – Description of quantified economy-wide emission reduction target: market-based mechanisms under the Convention has not been filled since "the exact number of units that can be used during the period 2013 – 2020 can only be

determined following the availability of final data concerning the use if these units during the period 2008 – 2012 and relevant greenhouse gas emissions data." Since the Report of the individual review of the annual submission of Italy submitted in 2013, with respect to 2012 emissions has already been finalized and is available on the UNFCCC website, can the Party provide even a rough estimate for units that can be needed for the period 2013 – 2020?

Answered by: Italy at Tuesday, 25 November 2014

For the first years of the 2013-2020 commitment period projections do not show the need to buy additional credits and the credits already planned should be sufficient to achieve the target. Due to the uncertainty in the growth of the national economy at the moment it is not possible to estimate the amount of credits potentially needed. The update of projection in 2017 will give us a more complete figure on this matter. Anyway Italy, as investor Party, contributes with 1.6% of world-wide CDM project portfolio and is involved directly, as government, in 47 registered CDMs. The credits CERs and ERUs are mainly purchased, by Italian Government, through the Italian Carbon Fund (ICF). Italy also contributes to the Community Development Carbon Fund (CDCF) and to the BioCarbon Fund (BioCF) and the World Bank Carbon Funds will deliver credits until the end of the second commitment period.

Question from: Brazil at Monday, 29 September 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: Aviation/Policy implementation

The statement regarding the inclusion of aviation in the EU ETS from 2013 on is not clear neither conclusive. On page 283, it is claimed that this means that "CO_2 emissions from all flights falling within the aviation activities listed in Annex I of the EU ETS Directive which depart from an airport situated in the territory of a Member State and those which arrive in such an airport from a third country, excluding small commercial emitters." What is the implication for international bunker fuels accounting? Could there be an explanation on this policy implemention?

Answered by: Italy at Tuesday, 25 November 2014

For the period 2013-2016 only the domestic intra EU flights are included in ETS. At national level no policy has been envisaged on that issue because covered by the ETS. As concerns the extra EU flights which have a larger impact on international bunker fuel accounting we follow the international negotiations occurring under the ICAO and discussion at European level whether to include them after 2016 is still on the table.

Question from: Egypt at Monday, 29 September 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: Reliable mitigation models

kindly specify and tell me about the reliable mitigation models which were used in building your mitigation scenarios in your national communication or BUR submissions ?

Answered by: Italy at Tuesday, 25 November 2014

The optimization 3e model (energy, economy, and environment) has been used for all energy sectors. Deterministic models on spreadsheets have been used for no energy sectors.
The model used belongs to the Markal family model. It is acknowledged by IPCC.
The main features of the model can be found in the following websites:

· http://www.iea-etsap.org/web/Markal.asp
· http://www.iea-etsap.org/web/Documentation.asp

The Markal model is a bottom-up model with a technology approach and allows an integrated esteem of PAMs effect. The main parameters of model can be summarized as follow

· Technical parameters associated with commodities include overall efficiency, technology life time and lead time, the time-slices over which that commodity is to be tracked, etc. Flow parameters permit to control the share for a given input or output flow. For demand commodities, in addition the annual projected demand and load curves can be specified.
· Economic parameters include investment costs, fixed and variable costs, taxes, and subsidies on the overall or net production of a commodity. These costs are then added to all other (implicit) costs of that commodity.
· Policy based parameters include bounds on the production of a commodity, on technology, or on the imports or exports of a commodity.

The results of the model are consequences of competition among different technologies.

Question from: Egypt at Monday, 29 September 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: Green house Gases assumptions and methodologies

what are the Green house Gases' assumptions and methodologies done in industrial processes to estimate HFCs ?

Answered by: Italy at Tuesday, 25 November 2014

In the following the information requested is provided at category level.

Magnesium foundries

In Italy there is only one plant which started its activity in September 1995. Since the end of 2007, SF_6, used as a cover gas to prevent oxidation of molten magnesium, has been replaced by HFC125, due to the enforcement of fluorinated gases regulation n. 842/2006 of the European Parliament and of the Council of 17 May 2006 on certain fluorinated greenhouse gases. Since 2011 HFC125 has been replaced by HFC134a. For HFCs, as well for SF_6, used in magnesium foundries, according to the IPCC Guidelines (IPCC, 1997), emissions are estimated from data made available by the company assuming that all the gas used is emitted.

Production of HFCs

There is only one facility in Italy where halocarbons productions have been carried out. Production of HFC125, HFC134a, HFC227ea and SF6 lead to fugitive emissions of the same gases. Within by-product emissions, HFC23 emissions are released from HCFC22 manufacture, whereas HFC143a emissions are released from the production of HFC134a. The IPCC Tier 2 method is used, based on plant-level data. The communication is supplied annually by the national producer, and includes information for each gas.

Consumption of HFCs

The methods used to calculate F-gas emissions from the consumption of halocarbons and SF_6 are presented in the following box.

Source category	**Sub-source**	**Calculation method**
HFC emissions from ODS substitutes	Refrigeration and air conditioning equipment	IPCC Tier 2a
	Foam blowing	IPCC Tier 2a
	Fire extinguishers	IPCC Tier 2a
	Aerosols/metered dose inhalers	IPCC Tier 2a
HFC emissions from semiconductor manufacturing		IPCC Tier 2a

Total emissions have been calculated as the sum of manufacturing emissions, use emissions and disposal emissions. The estimates are based on single gas consumptions data supplied by the national refrigerants producer and by industry and not on equipment consumption estimates. Because of the approach followed, and thus lack of data on quantity of each gas disposed, emissions from disposal are included into the emissions during the product's life for the whole time series.

Basic data have been supplied by industry, specifically:

- for the mobile air conditioning equipment the national motor company and the agent's union of foreign motor-cars vehicles have provided the yearly consumptions;
- for the other refrigeration and air conditioning equipment the producers supply detailed table of consumption data by gas;
- pharmaceutical industry has provided aerosols/metered dose inhaler data;
- the semiconductor manufacturing industry has supplied consumption and emission data for the national plants;

- the sub-source fire extinguishers, the European Association for Responsible Use of HFCs in Fire Fighting was contacted as well as the Consortium of fire protection systems.

For Stationary Refrigeration, emissions are estimated for Domestic Refrigeration, Commercial Refrigeration and Stationary Air Conditioning. Industrial Refrigeration and Transport Refrigeration estimations are included in Commercial Refrigeration because no detailed information is available to split consumptions and emissions in the different sectors.
The national refrigerants producer has supplied gas consumptions data with the indication of the relevant use sector, as reported in the following box.

Refrigerant	**Final Use**	**Equipment typology**
R 404	Refrigeration	Large Commercial Refrigeration Equipments
R 507	Refrigeration	Large Commercial Refrigeration Equipments
R 407c	Air Conditioning	Chillers
R 410a	Air Conditioning	Chillers
HFC 23	Refrigeration	Small Commercial Refrigeration Equipments
HFC 134a (pure)	Refrigeration	Domestic Refrigeration Equipments

Appropriate losses rates have been applied for each gas, taking into account the equipment where refrigerants are generally used, as suggested by a pool of national experts. On the basis of their knowledge, the appropriate emission factors are reported in the following box, distinguished in two different periods of the time series.

	1990-1999		**2000-2012**	
	Leakage rate (%)		**Leakage rate (%)**	
Equipment	Manufacturing	Product life	Manufacturing	Product life
Small Commercial Refrigeration	0.5%	5.0%	0.5%	5.0%
Chillers	3.0%	5.0%	0.5%	2.0%
Large Commercial Refrigeration	3.0%	15.0%	0.5%	12.0%
Domestic Refrigeration	3.0%	0.7%	0.5%	0.7%

For what concern the other sources of emissions of substitutes for ozone depleting substances, the following emission factors have been used, for the whole time series.

	Leakage rate (%)	
	Manufacturing	Product life
Mobile Air Conditioning – new vehicles	4%	10%
Mobile Air Conditioning – retrofit vehicles	8%	20%
Metered Dose Inhalers	1.95%	100%
Foam	10%	5%

Fire Protection	0%	5%

Question from: China at Monday, 29 September 2014
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Title: progress towards the national target

As there is no national-wide emission reduction target for Italy, it is difficult to see its progress as a whole. Moreover, since the official GHGs data for 2013 is still unavailable, it is difficult to see progress in those sectors covered by or not covered by the EU-ETS. However, it is important for Italy to disclose how it monitors whether it is on track to meet the target, for the non-ETS and ETS sectors, as well as the whole. Additional information is needed to address this concern.

Answered by: Italy at Tuesday, 25 November 2014

For the second commitment period under the Kyoto Protocol, the European Union, its Member States and Iceland have inscribed a joint emission reduction commitment of 80 (reducing average annual emissions by 20% compared to base year emission levels during the years 2013 – 2020) in an amended Annex B to the Kyoto Protocol based on the understanding that these commitments will be fulfilled jointly.
The 2009 'Climate and Energy package' forms the basis for the EU's international obligation in the second commitment period under the Kyoto Protocol. Based on the Climate and Energy package, the EU and its Member States are already implementing a 20% emission reduction by 2020. This allowed them to implement their commitments under the Kyoto Protocol's second commitment period as of its start on 1 January 2013. According to that there is not a single target at national level and the national emissions have to be separated for ETS and non-ETS sectors. For non-ETS sectors emissions an annual target has been set for each EU Member States.
In the preparation of the National Emissions Inventory verified emissions reported in the EUTL Registry (European Union Transaction Log) are taking into account. The non-ETS emissions are calculated subtracting the ETS emission from the total.
In the framework of the Monitoring Mechanism Decision 480/2004/EC as amended by Regulation 525/2013/EU, Italy revises its GHG projections every two years with a mandatory report to EU Commission. At National level, as reported in chapter 4 of NC6, the Ministry of the Environment, Land and Sea (IMELS) elaborates the "National plan for the reduction of greenhouse gas emissions" that is discussed in the Inter-Ministerial Committee for Economic Planning (CIPE). After the Kyoto Protocol ratification the 4th CIPE deliberation 123/2002 established an inter-Ministerial Technical Committee for GHG emissions (CTE). CTE is chaired by the IMELS and included representatives of the Ministries of Economy and Finance, Economic Development, Agricultural, Food and Forestry Policies, Infrastructures, Transport, University and Research, Foreign Affairs and of Regions. The main task of the CTE is to monitor the emissions trend, the status of the implementation of the policies and measures identified in the overall national strategy of GHG emissions and in general

to assist IMELS in elaborating the national plan for the reduction of greenhouse gas emissions to be proposed to CIPE for adoption. The financial support and legislative instruments to implement the plan elaborated by CIPE are identified through the Financial Law and allocated at the central and local bodies.

Question from: China at Monday, 29 September 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: clarification on national target

As an EU member, Italy has not pledged a national mitigation target under the UNFCCC. According to the BR1 and TRR, for sectors not covered by the EU-ETS, the emission reduction target for Italy is 13% decrease compared to 2005. However, it is not clear how much effort Italy is going to make on sectors covered by the EU-ETS, nor the efforts as a whole, compared with its base year level. Additional information is needed in order to make its effort transparent.

Answered by: Italy at Tuesday, 25 November 2014

The EU-wide cap under the EU ETS is determined for all EU Member States and the three EEA EFTA States (Iceland, Norway and Liechtenstein) without reflecting a specific share for each Member State. The allocation of allowances takes place through auctions and free allocation. The share of allowances auctioned on behalf of each Member State in each year is public and can be obtained from the relevant auction platforms. However, free allocation is provided on the basis of EU-wide rules to installation operators within a certain limit. For each of the nearly 12.000 installations in the EU ETS, the allocation has been calculated based on the common rules. A breakdown of the amounts per Member State is not available.
In this sector there are no direct politics and measures at national level, however the emissions are affected by the implementation of other policies as energy efficiency or use of renewable fuels. In the CIPE deliberation 17/2013 (Annex I and II), there are the estimates of impact for each measure on ETS sectors.

Question from: New Zealand at Sunday, 28 September 2014
Category: Progress towards the achievement of its quantified economy-wide emission reduction target
Title: Progress towards 2020 target and mitigation policies for HFCs

Italy's First Biennial Report and Sixth National Communication show a projected increase of HFCs to 2030. How does Italy reconcile the growth in these emissions with meeting its 2020 target? Does Italy have any particular policies in place to address this growth in emissions, and what is the observed/expected impact of these policies/measures?

Answered by: Italy at Tuesday, 25 November 2014

The share of HFCs in 2020 and 2030 projections are 2.4% and 3.2% respectively in the with measures scenario while in the with additional measures scenario the share became 2.8% and 3.8% respectively. Although the amount of HFCs emissions grows up, the relative weight does not affect the achievement of the target, also considering the offsetting reduction of other GHG.
Moreover, the original F-gas Regulation n°842 of the European Parliament and of the Council of 17 May 2006 on certain fluorinated greenhouse gases adopted in 2006, is being replaced by a new Regulation adopted in 2014, which applies from 1 January 2015. This strengthens the existing measures and introduces a number of far-reaching changes, which will be taken into account for the future projections.

Question from: **Bosnia and Herzegovina** at Thursday, 25 September 2014
Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target
Title: emission reduction goals

1. How do you set your emission reduction goals (do you use some type of software of expert judgment etc.) ad how do you follow up on these goals?

Answered by: Italy at Tuesday, 25 November 2014

Emission target at national level are decided in the framework of the international context and agreements together with the other European countries. For the first commitment period of the Kyoto protocol the EU as a whole engaged in a common reduction target subsequently shared among the 15 Member States according to the national circumstances and estimates of potential reduction of emissions.
For the second commitment period under the Kyoto Protocol, the European Union, its Member States and Iceland have inscribed a joint emission reduction commitment of 80 (reducing average annual emissions by 20% compared to base year emission levels during the years 2013 – 2020) in an amended Annex B to the Kyoto Protocol based on the understanding that these commitments will be fulfilled jointly.

The 2009 'Climate and Energy package' forms the basis for the EU's international obligation in the second commitment period under the Kyoto Protocol. Based on the Climate and Energy package, the EU and its Member States are already implementing a 20% emission reduction by 2020. This allowed them to implement their commitments under the Kyoto Protocol's second commitment period as of its start on 1 January 2013. According to that there is not a single target at national level and the national emissions have to be separated for ETS and non-ETS sectors. For non-ETS sectors emissions an annual target has been set for each EU Member States.

The monitoring of these goals and the individuation of the appropriate policies and measures to be implemented occur through a specific model.

The optimization 3e model (energy, economy, and environment) has been used for all energy sectors. Deterministic models on spreadsheets have been used for no energy sectors.
The model used belongs to the Markal family model. It is acknowledged by IPCC.
The main features of the model can be found in the following websites:

· http://www.iea-etsap.org/web/Markal.asp
· http://www.iea-etsap.org/web/Documentation.asp

The Markal model is a bottom-up model with a technology approach and allows an integrated esteem of PAMs effect. The main parameters of model can be summarized as follow

· Technical parameters associated with commodities include overall efficiency, technology life time and lead time, the time-slices over which that commodity is to be tracked, etc. Flow parameters permit to control the share for a given input or output flow. For demand commodities, in addition the annual projected demand and load curves can be specified.
· Economic parameters include investment costs, fixed and variable costs, taxes, and subsidies on the overall or net production of a commodity. These costs are then added to all other (implicit) costs of that commodity.
· Policy based parameters include bounds on the production of a commodity, on technology, or on the imports or exports of a commodity.

The results of the model are consequences of competition among different technologies.

Question from: Bosnia and Herzegovina at Thursday, 25 September 2014
Category: All emissions and removals related to its quantified economy-wide emission reduction target
Title: key uncertainties and elaborate plans for recalculations and improvements related to GHG i

1. Can you identify key uncertainties and elaborate plans for recalculations and improvements related to GHG inventory in the sectors of waste management and transport?

Answered by: Italy at Tuesday, 25 November 2014

Italy prepares and updates annually a QA/QC plan (http://www.sinanet.isprambiente.it/it/sia-ispra/serie-storiche-emissioni/quality-assurance-quality-control-plan-for-the-italian-emission-inventory) where the major recalculations as well as the improvements planned are indicated at sectoral level both for the GHG and other pollutants inventories. Specifically for the waste sector the following priorities have been identified for improvements and/or update of the parameter actually used:

Disposal on landfills and incinerators	AD	CO2, CH4	Waste composition and Carbon content of waste managed in landfills or incinerated
Domestic Wastewater treatment	MCF	CH_4	Methane conversion factor from domestic and commercial wastewater will be investigated in the future.
Waste incineration	EFs	GHG	Assessment of the changes in GHG EFs across the time series with the aim of reflecting efficiency improvements

For the transport sector the main uncertainties are for aviation and maritime emission estimates but they regard mainly the availability of basic information enabling more advanced Tiers for the estimation of atmospheric pollutants as NOX, HCs, CO and PM.
With regard projections the key uncertainty is related for the waste sector to the achievement of the target for organic waste management collection and recycling established in the EU framework, while for the transport sector the most critical issue regards road transport and the fulfilling for diesel vehicles of the NOX emissions threshold in terms of g/km for new vehicles according to the EU legislation (EURO5 and EURO6).