Session SBI45 (2016)

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Question by Japan at Wednesday, 31 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Stakeholder coordination for projections

For preparation of projections, are the coordination with stakeholders (business communities, relevant ministries and NGO) carried out? If so, could you tell us the contents of the coordination?

Answer by Italy, Thursday, 27 October 2016

For the preparation of the projections a coordination among the stakeholders has been carried out.

In Italy the protection of the environment, ecosystem and cultural resources are under the exclusive competences of the central Government.

The Inter-Ministerial Committee for Economic Planning (CIPE) is a collective governmental body chaired by the President of the Council of Ministers whose competences include also the climate change. The Committee is in charge for taking the resolutions concerning the national plan for the reduction of emissions of gases responsible for the greenhouse effect.

The CIPE resolution n. 123, adopted in 2002 (available at the following URL: http://www.cipecomitato.it/it/il_cipe/delibere/download?f=E020123.doc), established the Technical Committee on Emissions (CTE), coordinated by the Ministry for the Environment Land and Sea, where all the relevant Ministries and local authorities are represented. The main task of CTE is the annual preparation of a report on implementation the planned measures, also on the basis of the information collected at regional level, and on the emissions trends and scenarios in comparison with the WEM scenario; on this basis the CTE proposes additional policies and measures to be considered by the CIPE. Each year, following the outcomes of the CTE's report and proposal, the Minister for the Environment Land and Sea officially proposes the adoption of the additional measures needed to achieve the targets.

The latest CIPE resolution was adopted in 2013 in order to enable Italy to reach the goals set by the EU legislation by 2020.

Moreover, from 2011 (law n. 39/2011 http://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:2011;39), a report concerning the state of implementation of commitments to reduce greenhouse gases emissions, and describing emission trend and projections, is prepared by the Ministry of the Environment in consultation with other relevant Ministers. The report is annexed to the economy and financial document (DEF) to be annually approved by the Government.

In the framework of the definition of national target for the 2030 following the EU INDC, in 2014 an interministerial working group has been set up by the Interministerial Committee on European Union Affairs office of the European Affairs Department of the Head of Government Offices, where Ministries of Economic Development, Environment Land and Sea, Economy and Finance, Transport, Agriculture, ISPRA and ENEA are represented. This working group was aimed to the comparison of Italian Reference Scenario, prepared by the European Commission, with the national one. In this

context, policies and measure and scenarios for the reduction of GHG emissions have also been discussed and agreed.

In 2015, a panel has been established by the Head of Government Offices, supported by ISPRA and ENEA, involving the relevant Ministries, stakeholders, research Institutes and Universities, business and industrial communities and NGOs with the goal to prepare a National Low Carbon Strategy at medium and long term (2030-2050), defining the policies and measures to be adopted and implemented to achieve the 2030 national emissions reduction commitment. The panel is organized in four working groups; the first one is involved to collect all the basic data and parameters and their projections, the second one is considering the technologies available in the short and medium term, the third one compares different projection and scenario models while the last one will consider all the information collected defining the list of policies and measures to be further planned and implemented.

According to the art. 12 of the Monitoring Mechanism Regulation MMR 525/2013 a National System for Policies and Measures and Projections has been set up in 2015 in framework of the process of ratification of the Doha Amendment by Italy, assigning to ISPRA the responsibility for the preparation and update of the system as well as the management and archiving of the relevant data and information.

Question by Brazil at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Estimates of mitigation impacts 2

Regarding “CTF Table 3 Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects”, many countries have difficulties establishing some of the estimates of mitigation impacts for their actions. Could Italy explain how it managed to estimate the mitigation impact for all those actions? Is the monitoring system already established for the actions that have numerical information in the estimates of mitigation impacts?

Answer by Italy, Thursday, 27 October 2016

The ex ante evaluation of impacts for each measure follows a methodology developed by ENEA available at this URL: http://old.enea.it/produzione_scientifica/pdf_volumi/V2010_QSN.pdf (additional information are included below)

For example if the measure involves a target, as white certificates or green certificates, the stepwise trend to reach the target is elaborated. The emissions avoided are estimated calculating the level of the target parameter (electricity or natural gas saving, RES in electricity generation) multiplied by the

average emission factor of fuel mix involved by the measure. If the measure is financial, as for subsidies to renewable capacity, the hypothetical renewable new power capacity is estimated, considering specific investment costs and other technological parameters. The emissions avoided are calculated considering the estimated production multiplied by the average emission from the thermoelectric plants.

It is a quite rough esteem that could be affected by uncertainty and possible double counting; this approach, does not consider the interaction among measures but allows to set hypothesis and gather parameters, as the mentioned investment costs, useful to set up the model used to elaborate projections.

In order to take into account the interactions among the measures and to avoid a double counting effect, the integrated impacts of the measures have been estimated by using a bottom-up model. The model evaluates the impact of packages of measures using different scenarios.

Every two years GSE issues the progress report under art. 22 of the 2009/28/EU directive where the ex post assessments of the most relevant national measures related to renewable energy use and energy efficiency are reported. For the evaluation of the impact of actually implemented measures please see the document "Italy's Third Progress Report under Directive 2009/28/EC" attached and available at this URL:

https://ec.europa.eu/energy/en/topics/renewable-energy/progress-reports.

From page 10 to 27 the measures taken in the preceding 2 years and/or planned at national level to promote the growth of energy from renewable sources are listed. The results achieved by the measures are reported in paragraph 3 (from page 42). In paragraph 10 (from page 96) the net greenhouse gas emission savings due to the use of energy from renewable sources are reported.

As stated in the above mentioned ENEA report (par. 5.5.1 Annual CO2 reduction assessment, pag. 70), "starting from the data of Table 17, for each source and technology listed therein, we proceeded with the formulation of the hypothesis of delivery funding, providing the formula of capital in different percentages. In particular, the percentages referred to are the 20% and 30% with the exception of solar photovoltaic, which was considered more than 20% since the current legislation does not provide the incentive rate to private sector when the plant profits on a capital financing more than 20% (this limit does not apply to plants built in the public sector). From the funds available under the distribution assumed by source and technology, and on the basis of specific investment costs, we calculated the installed power. It is considered a lifetime investment variable according to the technology: 20 years for wind and solar, biomass and 15 years for geothermal , 30 years for hydropower. The corresponding annual energy produced was calculated on the basis of a number of hours per year of operation variable from 1234 hours for the solar (the average of the central- south) to 1900 for wind power, hydroelectric power for 3500 hours, 3000 hours for the CHP, 7000 hours the incineration of waste and exploitation of biogas from MSW and, finally, approximately 7500 hours for the geothermal. Finally, the annual reduction of CO2 emissions has been calculated from the energy produced by multiplying the annual average emission factor of thermal power plants assumed to be equal to 0.5 tCO2/MWhe. The table 19 shows the complete picture on the assumptions made for all sources and all technologies."

Tab. 19 – Hypothesis applied to assess the CO2 reduction per year

Fonte	Eolico	Solare			Biomassa				Idroelettrico/Geotermico		
Ripartizione per tecnologia		Fotovoltaico		Termico	Solo elettrico		Cogenerazione		Idroelettrico		Geotermico
		Terra	Tetti		Termov. rifiuti	Biogas RSU	Filiera	Filiera corta	Mini idro	Piccolo idro	
Taglia (MWe)	2	2	0,02	---	10	1	1	1	0,3	3	10
Vita (anni)	20	20	20	20	15	15	15	15	30	30	15
Costo investimento (M€/MW)	1,2	4,5	5,5	2,2	5,1	1,6	2,6 - 4,2		1,3 - 5	1,4 - 6	2 - 3,5
Ore/anno	1900	1234			7000		3000		3500		7500
Riduzione specifica di riferimento (tCO_2/MWh_e)	0,5			0,20 [2]	0,5						

Fonte: Elaborazioni ENEA

In the following an example of impact assessment based on figures showed in above mentioned tab. 19 and below reported tab. 21 of ENEA report is showed.

Assuming an hypothetical leverage effect of 30% for the financial sources available for subsidies, for a subsidy of 1M€ the investment on new capacity will be 3.33 M€.

Table 21 considers this hypothesis for new renewable plants for each region and technology; in the last row the national figures are reported. For example considering only the values referred to wind energy (first three columns of the table 21) the subsidy available are 162.6 M€. With the hypothesis of a leverage effect of 30% the subsidy will move investments for 542.0 M€. As reported in tab. 19 the investment costs for these plants are 1.2 M€/MW, so about 451.7 MW will be installed. Considering an average number of hours per year of operation equal to 1900 hours per year, the generated electricity will be about 858.2 GWhe. Assuming that the average emission factor of thermal power plants is 0.5 tCO2/MWhe, the avoided CO2 emissions will be about 427.3 Mt.

The same approach has been followed also for energy efficiency measures, as stated at page 81 of above mentioned ENEA report "with a view to derive a measure that would combine each investment (expressed in €) resulting in energy savings (in toe/year for end-use) and the consequent reduction of GHG (expressed in t CO2eq./ year). The emission factors used to convert the energy savings expressed in tonnes of oil equivalent (toe) / end-use in tonnes of CO_2 are reported:

- For the electricity sector, avoided emissions by reducing the combined cycle power plants production in 2005 amounted to 4.19 tCO_2/toe end-use;

- For the heat sector, avoided emissions are related to the mix of fuels consumed in Italy in 2005, amounting to 2.56 tCO_2/toe end uses.

Also two indicators that take into account different costs of the energy conservation were considered, as appropriate:

- The total cost for replacing of equipment or infrastructure energy-intensive with a new low-consumption;

- The only extra cost, ie the higher cost to be incurred for equipment or new infrastructure at low cost compared to conventional ones."

Tab. 21 – Valutazione della riduzione annua totale di CO_2 dalle fonti eolico e solare per Regione (leva finanziaria 30% c.c.)

FONTE	Eolico			Solare								
Ipotesi finanz. (c.c.)	30%			20%								
Ipotesi ripartizione per tecnologia				Fotovoltaico (50%)						Termico (50%)		
				Terra (30%)			Tetti (20%)					
Regioni	Fondi QSN (M€)	Invest. (M€)	Riduzione annua (tCO_2/a)	Fondi QSN (M€)	Invest. (M€)	Riduzione annua (tCO_2/a)	Fondi QSN (M€)	Invest. (M€)	Riduzione annua (tCO_2/a)	Fondi QSN (M€)	Invest. (M€)	Riduzione annua (tCO_2/a)
Abruzzo	0,0	0,0	0	3,7	18,5	2.541	2,5	12,4	1.385	6,2	20,6	2.366
Basilicata	0,0	0,0	0	4,8	24,0	3.291	3,2	16,0	1.793	8,0	26,7	3.065
Bolzano	0,0	0,0	0	2,4	12,0	1.649	1,6	8,0	898	4,0	13,4	1.535
Calabria	32,4	108,0	85.145	16,0	80,1	10.983	10,7	53,4	5.985	26,7	89,0	10.228
Campania	40,0	133,3	105.118	13,5	67,5	9.255	9,0	45,0	5.044	22,5	75,0	8.619
Emilia R.	2,2	7,4	5.813	1,1	5,6	772	0,8	3,8	421	1,9	6,3	719
Friuli	0,0	0,0	0	0,0	0,0	0	0,0	0,0	0	0,0	0,0	0
Lazio	6,0	20,0	15.768	9,9	49,5	6.787	6,6	33,0	3.699	16,5	55,0	6.321
Liguria	2,9	9,6	7.531	2,1	10,4	1.426	1,4	6,9	777	3,5	11,6	1.328
Lombardia	0,0	0,0	0	0,0	0,0	0	0,0	0,0	0	0,0	0,0	0
Marche	1,3	4,2	3.287	2,0	9,8	1.337	1,3	6,5	729	3,3	10,8	1.245
Molise	1,4	4,7	3.675	1,3	6,3	863	0,8	4,2	470	2,1	7,0	804
Piemonte	25,7	85,7	67.561	15,0	75,1	10.296	10,0	50,1	5.611	25,0	83,4	9.589
Puglia	0,0	0,0	0	22,8	114,0	15.631	15,2	76,0	8.518	38,0	126,7	14.557
Sardegna	0,0	0,0	0	14,3	71,5	9.800	9,5	47,6	5.340	23,8	79,4	9.126
Sicilia	32,0	106,7	84.094	52,9	264,3	36.238	35,2	176,2	19.748	88,1	293,7	33.749
Toscana	7,9	26,2	20.639	1,9	9,5	1.301	1,3	6,3	709	3,2	10,5	1.212
Trento	0,3	1,1	876	2,2	11,0	1.508	1,5	7,3	822	3,7	12,2	1.405
Umbria	5,6	18,6	14.640	3,3	16,7	2.291	2,2	11,1	1.249	5,6	18,6	2.134
Valle d'Aosta	0,3	0,8	657	0,1	0,4	51	0,1	0,3	28	0,1	0,4	48
Veneto	4,8	15,8	12.490	0,0	0,0	0	0,0	0,0	0	0,0	0,0	0
POIN Energia	0,0	0,0	0	42,0	210,0	28.793	28,0	140,0	15.691	70,0	233,3	26.815
TOTALE	162,6	542,0	427.294	211,2	1.056,2	144.813	140,8	704,1	78.917	352,1	1.173,5	134.863

Attachment: Report 2015 Italy-EN.pdf

Question by Brazil at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Estimates of mitigation impacts

In “CTF Table 3 Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects”, a significant number of mitigation actions were listed and all of them have its estimates of mitigation impact. Congratulations for that. It is not specified, however, if the estimates of mitigation impacts are for 2020 or for 2030. Could you clarify the information?

Answer by Italy, Thursday, 27 October 2016

The estimations of mitigation impacts refer to 2020

Question by New Zealand at Wednesday, 31 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Electric vehicles

We note in the review report that significant planned policies and measures include promoting and supporting the renewal of the car fleet, with the promotion of electric vehicles. What specific initiatives or incentives is Italy planning to implement in order to encourage the uptake of electric vehicles?

Answer by Italy, Thursday, 27 October 2016

To date the relevant measures are only planned. A decree that will transfer in the Italian law the EU directive 2014/94/EU (DAFI directive) has been approved by the Government and it is under discussion in the Parliament. This decree fix objectives of a network of filling station for electric and natural gas vehicles, in particular it foresee that all petrol/diesel filling stations that sell more than a certain quantity of fuels have to install, by 2022, infrastructure for refueling electric and CNG vehicles. There are provisions also for LNG filling stations for ships and trucks.

At the moment incentives for the purchase of electric / LNG/ CNG vehicles are not enforced or planned.

Question by Brazil at Tuesday, 30 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: CTF Table 3

Regarding mitigation actions referred to in “CTF Table 3 Progress in achievement of the quantified economy-wide emission reduction target: information on mitigation actions and their effects”, are there any current estimates of mitigation impacts since the respective years of implementation?

Answer by Italy, Thursday, 27 October 2016

The last information available concerning the ex post evaluation of mitigation impacts is the report that GSE issues every two years for the European Commission under art. 22 of the 2009/28/EU directive where the ex post assessments of the most relevant national measures related to renewable energy use and energy efficiency are reported. The last editions is published in the late 2015.

The document “Italy’s Third Progress Report under Directive 2009/28/EC” is attached and available at this URL:

https://ec.europa.eu/energy/en/topics/renewable-energy/progress-reports.

From page 10 to 27 the list of measures implemented in the previous 2 years and/or planned at national level to promote the growth of energy from renewable sources is available. The results achieved by the measures are reported in paragraph 3 (from page 42). The assessment of the actual impact of each single measure is a quite hard task because of the interaction among different measures in the real world. As for the energy savings, the estimation of the impact of the White Certificates (WC) and related actions, such as use of solar collectors to produce sanitary hot water, installation of heat pumps and so on, is available since the impact of measures is directly related with the WC issues that certify energy savings in final energy uses. For other measures, such as thermal account, tax deductions, and some measures in the electricity sector, the impacts are related to the eligibility of projects subject to the incentives, which are correlated to the amount of renewable energy production or energy saving achieved.

Attachment: Report 2015 Italy-EN.pdf

Question by Brazil at Tuesday, 30 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Biofuels

In item 4.1, section on transport, it is stated that one of the targets for the sector is “10% of use of biofuel for transport at 2020”. What are the results up to date? What types of biofuel and raw materials are currently used and planned to be used in the future? Does Italy consider importing biofuels or raw material for producing biofuels in the future?

Answer by Italy, Thursday, 27 October 2016

The latest share of biofuels percentage in transport sector is 4.48% by 2014. In order to comply with the 2020 target of 10% in the next years the production of biomethane from biogas will be implemented.

According the national legislation, an annual mandatory content of biofuels in fuels (%) has been set up, in the national decree DM 10 October 2014, as in the following box.

Year	Q%	Q% of advanced biofuels
2015	5%	
2016	5.5%	
2017	6.5%	
2018	7.5%	1.2%
2019	9%	1.2%
2020	10%	1.6%
2021		
From 2022	10%	2%

Minimum share of biofuels expressed as a percentage (Q%), to be released for consumption in a given year, starting from 2015

In addition, as explicated in the box, in line with the directive 1513/2015, Italy has already introduced ambitious sub targets coming from advanced biofuels (starting from 2018)

Regarding the raw materials or biofuels used, the implementation of the directive will change the market; for example, only biofuels made with materials that are in annex IX of the directive could be counted towards the targets foreseen for the advanced biofuels

Regarding plans to import biofuels or raw material please consider that the national rules fix the overall objective but then it is up to operators to decide whether use imported or national raw material and / or import directly biofuels. A major operator has already built infrastructure to produce high quality biofuels and it plan to further expand it.

Question by Brazil at Tuesday, 30 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: Nuclear energy

What is the current situation of nuclear energy (power plants, generation, etc.) and what are the plans of Italy for the nuclear energy sector in its actions for mitigation and projections for GHG emissions in the future?

Answer by Italy, Thursday, 27 October 2016

Italy has no running reactors since 1988 after the referendum vote, when Italy has rejected the production of energy by nuclear source. There is no planning for electricity generation by such source in the future.

Question by China at Monday, 29 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: updated information on mitigation PaMs

As listed in Table 4.1 in BR2, mitigation actions such as the "National Action Plan for Renewable Energy 2010" are planned to be implemented since 2015. How is the progress and effects of those mitigation actions? Have those PaMs been taken into account in the WM scenario projection?

Answer by Italy, Thursday, 27 October 2016

It is too early to provide a first assessment of the effects of these measures. As for the second question according to the UNFCCC guidelines the planned measures have to be considered in the WAM scenario.

Question by China at Monday, 29 August 2016

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: projections

As Figure5.1 in the BR2 shows, the projection of primary energy consumption in BR1 and BR2 are considerably different. Italy stated that this is due to ongoing economic crisis and new measures. Could Italy provide further information on the details of the new measures and estimated effects of those measures?

Answer by Italy, Thursday, 27 October 2016

The most relevant measure to reduce primary energy consumption is "White Certificates". The white certificates are aimed to energy efficiency and energy savings. According to the GSE report the energy saving has been of 2.3 Mtoe in 2013 and 2.6 Mtoe in the 2014 primary energy, see paragraph 3.A.1. White Certificates, page 44 of the report "Italy's Third Progress Report under Directive 2009/28/EC" attached and available at this URL: https://ec.europa.eu/energy/en/topics/renewable-energy/progress-reports.

The National Energy Strategies, approved in march 2013, has set the energy saving target at 2020 of 15 Mtoe of final energy.

Attachment: Report 2015 Italy-EN.pdf

Question by China at Monday, 29 August 2016

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 August

Title: renewable energy target

Italy has set the 2020 national target of increasing renewable energy share to 17%. Could Italy provide further information on the progress towards the achievement of this renewable energy goal? It will be appreciated if detailed information on each type of renewable energy could be provided.

Answer by Italy, Thursday, 27 October 2016

The national target for renewable in 2020 is around 20-21%, the reported figure is the EU target for Italy.

The latest official figures referred to 2014 show that Italy's renewable share is already 17.1%. This result is partly due to the economic crisis (the denominator, total final consumption, has always decreased between 2011 and 2014). In the report attached "Italy's Third Progress Report under Directive 2009/28/EC" and available at this URL: https://ec.europa.eu/energy/en/topics/renewable-energy/progress-reports, the share of renewable sources achieved for electricity, transport, and heating/cooling sectors are reported.

Table 1: **The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources[2]**

	2009	2010	2011	2012	2013	2014
RES-H&C[3] (%)	16.43%	15.64%	13.82%	16.98%	18.10%	18.89%
RES-E[4] (%)	18.81%	20.09%	23.55%	27.42%	31.30%	33.42%
RES-T[5] (%)	3.68%	4.57%	4.66%	5.68%	4.93%	4.48%
Overall RES share[6] (%)	**12.78%**	**13.02%**	**12.88%**	**15.44%**	**16.74%**	**17.07%**
of which from cooperation mechanism (%)[7]	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
surplus for cooperation mechanism (%)[8]	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table: Renewable energy contribution of each sector to final energy consumption

Attachment: Report 2015 Italy-EN.pdf

Session SBI45 (2016)

Session closes at 28-10-2016

UNFCCC - LAST PAGE OF EXPORT