

## Friends of the Earth Italy's proposals for new energy efficiency policies

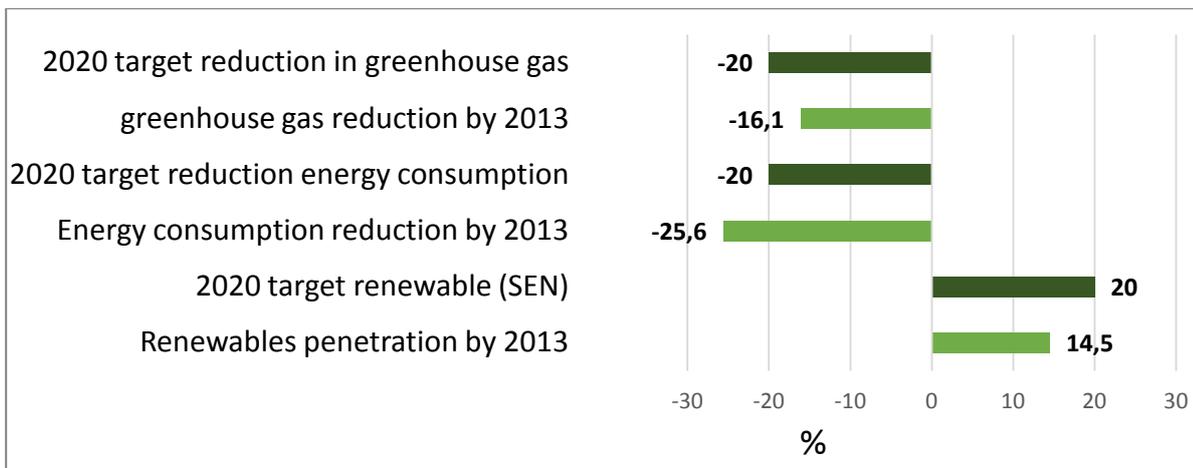
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The year 2013 indicates, for Italy, a strong acceleration towards the 2020 targets of the EU policies for energy and environment: reducing greenhouse gas emissions, use of renewable sources and energy efficiency improvement. The 2013 data and the trend of the indicators used to formulate the three objectives, the so-called 20-20-20, suggest that Italy will reach the 2020 targets set by EU policies. In the energy efficiency case, the objective appears already achieved and even exceeded. In particular:

- in 2013, the greenhouse gases emissions in Italy decreased by approximately 16% compared to 1990 in relation to a general objective for the EU of 20% by 2020;
- the penetration of the renewables sources in final energy consumption in 2013 reached approximately 14.5%, compared to a 2020 target set by the EU for Italy of 17% (increased to 20 by SEN);
- in 2013 the primary energy consumption (used as a proxy for energy efficiency) marked a reduction of 25 % (higher than 20% determined as 2020 target by the EU) in respect of expected reference scenario indicated by the EU.

In 2013, in Italy, the available data on the progress of the indicators, chosen by the EU to assess the progress towards the three objectives, show the situation as summarized in the Figure below.

### **The status of implementation of the 20-20-20 in Italy up to 2013**



Source: processing and estimates by Friends of the Earth Italy based on Eurostat data, MSE, Terna and GSE

Preliminarily, it must be emphasized that the three objectives are not formulated in a coordinated and adequate way; for energy efficiency it refers to the consumption of primary energy, while for the renewable sources it refers to the final consumption of energy. In particular, the energy efficiency is formulated in terms of simple energy consumption; consumption that can be reduced due to the economic crisis even independently from the improvements in the efficiency of use of energy resources, as it is happening in these last few years. In addition, while the goals of reducing greenhouse gas emissions are related to the historical level of 1990, for the reduction of primary energy consumption, the Directive 2012/27/UE refers to a reference scenario (no new policy) formulated before the economic crisis. Therefore, the EU 2020 target for energy efficiency is formulated in a double misleading way.

The analysis of the 2013 data for the 20-20-20 targets and the framework that have determined them will be the starting point to set the new Italian political energy efficiency by 2020, and to support the country in the effort to set future energy and environmental policies of the European Union regarding the 2030 outlook using, as a basis, the proposal made by the Commission in its communication of January 22nd

2014. Specifically, it is necessary to verify what was the role of the penetration of renewable energy sources and improvement in energy efficiency compared to that of the economic crisis and other factors in the important reduction of greenhouse gas emissions in the last years.

### **Drivers of greenhouse gas emissions reducing**

The 2010 Italian target to reduce greenhouse gas emissions (-6.5 % compared to 1990 average values) was not achieved according to schedule. The emission levels have been recorded to be in line with the Kyoto target 2010 for Italy only since 2011 thanks to a strong acceleration in the trend of emissions reduction. **According to the data available in 2013, the level of greenhouse gas emissions in Italy have already achieved a reduction of about 16% compared to the 1990 level.** We should note that approximately 80% of the emission is due to the consumption of fossil fuels (coal, oil, natural gas).

The total emissions of greenhouse gases from 2008 to 2012 had a decrease of about 15 %, equivalent to a reduction of approximately 81,000 kt CO<sub>2</sub> eq. It may be pointed out that, in this period, more than 90% of the emissions reduction is due to three sectors: energy industries (37 %), transport (22 %) and industry (31%). Based on the recent Progress Report of the Italian Government and the most recent elaborations of the GSE (Gestore dei Servizi Elettrici = Electricity Services Management Society) it has been estimated that in the four years under consideration, the avoided emissions of CO<sub>2</sub> eq. attributable to the growth in the consumption of renewable energy sources is approximately 13,600 kt, of which 8,100 kt related to the development of renewable electricity. We can therefore conclude that, in the considered period, **10% of the reduction of greenhouse gas emissions is due to the growth of renewable electricity** and that, overall, the increase in the consumption of renewable energy sources has allowed 16.7% of the reduction of greenhouse gases between 2008 and 2012. Considering the weight of the non-energy components in reducing emissions (6%) it may be concluded that, in 2008-2012, **approximately 77.2 % of the reduction of greenhouse gas emissions is due to the decrease in the consumption of energy resources.** But how much of this decline in consumption is due to the improvement of energy efficiency and how to cyclical and structural effects of the economic crisis?

From 2008 to 2012, the primary energy consumption rose from 171.6 to 155.1 Mtep with a drop of almost 10%, but this decrease was only partially attributable to energy efficiency improvements. To quantify the contribution of improved energy efficiency to decrease energy consumption, as a first approximation, we can refer to the performance of energy efficiency ODEX for the Italian economy which, in the last years, had an improvement approximately 1% per year, about 4% in four years. It is a weighted indicator used to measure energy efficiency improvements in major sectors and for the economy as a whole. It allows you to distinguish the actual efficiency improvements in the use of energy from other factors such as the effects of cyclical and structural economic crisis.

**We can thus estimate that, from 2008 to 2012, about 40% of the decrease of energy consumption is attributable to improvements in energy efficiency and 60% reduction in consumption is the result, primarily, of the economic and structural effects related to the economic crisis.** The effects are due to the cyclical decline in demand for goods and services related to the crisis, with the consequent reduction of final consumption in transport or in productive activities. The structural effects are due to the sale (or relocation) of the production facilities of the industrial sector, in particular the facilities which are energy-intensive. As far as business cycle effects, with the economic recovery, it is likely to have a correlated growth in energy consumption and emissions. About the structural effects with disposal of industrial settlements, with the economic recovery, the energy consumption will have a smaller increase but in a scenario of depletion of the productive fabric and without energy efficiency improvements in real terms in the various production processes.

In conclusion, we can say that, between 2008 and 2012, 46.3% of the reduction of greenhouse gas emissions (37,500 kt CO<sub>2</sub> eq.) is attributable mainly to the effects of the economic crisis, 31% (25,000 kt

CO2 eq.) is connected to the improvement of energy efficiency, 16.7% to the growth of renewable energy sources, while 6% in non-energy emission processes.

***Therefore, it appears clear that the main factor in the performance of energy-environment policy was the economic crisis, while the second one was the improvement of energy efficiency that had an impact twice as much in respect the growth of the use of renewable sources.***

The continuing economic crisis in Europe for in-depth analyses free of superficial or ideologic elements to be able to identify proper energy and environmental policies. To overcome the crisis could be possible only if we will be able to invest in the most effective after complete analysis of costs and benefits. This is even more true in Italy where mistakes have been made in fostering renewable energy plants; errors that today affect the price of the energy needed for economic recovery and that are short for a proper promotion of efficiency. Beyond the rhetoric of so-called green economy, measures are necessary to facilitate not only small and medium-sized enterprises but also our manufacturing industry in gaining competitiveness through investments in environmental quality and energy efficiency, for both the production processes and products. The real challenge of an advanced environmental policy is not to close or relocate the difficult productions but to make them environmentally sustainable.

This also applies to the European Union and the international climate negotiations. During the confrontation on the Commission Communication "Framework of energy and climate policy for the period 2020-2030," Italy may have the opportunity to promote a breakthrough in setting energy and environment policy conferring truly a priority role to energy efficiency compared to other lines of action.

If the pursuit of energy efficiency targets will be set correctly to increase the competitiveness of the productive and economic recovery, the high resistance that today blocks the negotiations at the international level for the definition of shared objectives on a global reduction of greenhouse gas emissions could be overcome.

### **2030 objectives and scenarios for the EU and Italy**

***The European Commission indicates for 2030 a target of reducing greenhouse gas emissions by 40% compared to 1990. Without for this adopting catastrophic attitudes, the goal is shared; but we cannot ignore the fact that its achievement is very challenging*** and it must be conjugated with a scenario of economic growth to emerge from the crisis and to prevent the productive fabric depletion. ***By 2030, a growth scenario of economic wealth at the level of households and firms is even a prerequisite to enable the significant investments required to improve energy efficiency is widespread in the processes of consumption and production.***

Considering the other two policy objectives of environment and energy (renewable sources and energy efficiency) and their connection with the objectives of economic and industrial policy, the framework of the Commission Communication appears largely deficient. The weak points are the lack of targets in 2030 for energy efficiency and an adequate fitting of these with consistent objectives of economic and industrial policy. The Commission document that combines target of 40 % reduction of greenhouse gases only with the growth target of renewable sources (27% in 2030) is likely to perpetuate the misconception that attaches to the penetration of renewable energy sources, in particular the electric one's, the role of the main drivers for the reduction of greenhouse gases. ***Instead, the key driver for achieving a virtuous decarbonisation, consistent with a growing economy, is improving energy efficiency in which the reduction of energy consumption is an expression of increased competitiveness and wealth and not of crisis and impoverishment.***

***It is therefore necessary that EU bypasses an inadequate approach, and that the framework of European policies on energy and climate for 2030 includes also the target for energy efficiency as a priority and a***

***fundamental tool for the reduction of greenhouse gases.*** This turn should be one of the first targets for the Government in the next six months in the EU Italian driving.

From the point of view of the economic outlook tentatively, we assume a scenario allowing an average annual growth rate of GDP, in real terms, of 1% by 2030. In this background, the 2030 target of 40% reduction in domestic emissions of greenhouse gases must be connected to a 2030 target of an improvement in energy efficiency of 20 % compared to 2010, equivalent to the average annual energy efficiency improvement of 1.5%. A more rapid growth in energy efficiency compared to economic growth will result in a significant reduction in energy intensity and the level of primary energy consumption (-20 %, with a shift from 165 Mtoe in 2010 to about 130 in 2030).

In this scenario it can be formulated, ***a goal of 2030 for Italy of a penetration of renewable sources of 30%***, a level which, together with the energy efficiency one would achieve the target of reducing greenhouse gas emissions. ***It must, however, establish certain conditions in order to achieve this goal in Italy and avoid repeating the mistakes made in the recent past, mistakes that we will pay for a long time.***

First of all, we need to concentrate the maximum effort to support a goal of ***35% renewable heat*** (14.5% in 2013). For this purpose, there may be significant policies synergies to promote (incentives and regulation) with the process of upgrading the energy efficiency of buildings (residential and tertiary sectors ) in terms of energy efficiency.

For transport it is conceivable a target ERS of 20% (6% in 2013 ).

A level of renewable electricity to 40% (33% in 2013) should be spontaneously achieved, with a growth rate of 0.5% per annum, ceasing every incentive to large plants for commercial production through the development of technologies that have reached grid parity or the full competitiveness on the basis of incentives past. In addition, small photovoltaic plants for their own consumption of households and firms and plant biomass or geothermal cogeneration service units and district heating networks can also find forms of support in synergy with programs to improve energy efficiency.

***The proposal of the Friends of the Earth*** involves a comprehensive review of policies to support the achievement of a satisfactory state of energy and environment:

- ***immediate cessation of incentives for large wind farms and for plants producing only electricity for commercial purposes;***
- ***taxation*** of the extra benefits acquired throughout tariff-based incentivization assigned to producing renewable energy: ***the possible revenue from a similar measure has been estimated by various authors to be of the order of at least one billion per year;***
- destination of the revenue to the strengthening of incentive instruments for the promotion of energy efficiency.

### **The Friends of the Earth proposals for new energy efficiency policies**

Based on the assessment of the status of implementation of environmental energy policies in the country and the need for a new and different approach in view of the 2030 target, Friends of the Earth Italy formulate their proposals for a new era of energy efficiency policies starting from the deadline for the application at country level of Directive 2012/27/UE and the preparation of the new Italian Action Plan for Energy Efficiency (PAEE in 2014) according to the deadlines set by the Directive.

***A first general key of understanding*** in the setting of new energy efficiency policies, relevant also for the promotion of renewable heat, is the fact that ***the diffusion of energy efficiency improvements is not***

**essentially linked to the presence of economic incentives** for non-competitive technologies, such as in recent development of renewable electricity. To promote energy efficiency, together with economic incentives, we must have:

- diffusion of already competitive technologies;
- targeted information by area of intervention;
- regulatory measures (mandatory standards, ...);
- development of statistical evaluations on the spread of efficiency improvements in various areas.

These lines of development of public intervention highlight the lower cost, in terms of resources, of energy efficiency policies and the potential for greater efficiency and synergies related to the integration with the lines of sectoral policies (industrial, transport, building, ...) that are relevant. **A second key**, which is essential for new policies that promote energy efficiency, **is the direct role of families and businesses in their choice of the paramount energy use for their own needs**. The success of the energy efficiency policies therefore depends on the widespread involvement of a large number of actors. The proposals are as follows:

### **1) A new goal to combine energy efficiency and competitiveness**

For the the new PAEE it is necessary to adopt an indicator that can express the improvement of energy efficiency which is at the same time linked to the growth of competitiveness of the country, using the methods of decomposition of the causes of the reduction of energy consumption. This is also consistent with the Directive 2012/27/UE that, under Article 3, allows Member States to set a 2020 target for energy efficiency formulated in terms of energy intensity, and not only to reduce consumption. Friends of the Earth Italy therefore propose to predict, in the new decree, a 2020 target of reducing energy intensity to be included in the new Action Plan for Energy Efficiency Italy (PAEE in 2014). Energy intensity, which expresses the ratio between a unit of production of a certain value and the amount of energy required to achieve it, is an indicator that allows a much better patterns of consumption, thus recording the real improving of energy efficiency in production or consumption. **The new 2020 target for Italy should be to reduce energy intensity by 10% compared to 2010 and by 20 % in 2030. The achieving of this objective must be linked to macro sectoral targets (and specific sectoral indicators) for improvement energy efficiency in energy end-use macro sectors**. To assume, in a qualified way, the energy intensity reduction as the main objective allows us to lay the groundwork for an effective integration of environmental energy policies with industrial policies. To give priority to investments in energy efficiency of production processes in terms of increased competitiveness will be one of the determining factors for a solid recovery of the Italian economy.

### **2) Sectoral objectives of energy efficiency growth**

To strengthen the energy efficiency policies and promote effective investments in improving the use of resources in the various activities of production and consumption, it is necessary that the new global target of reducing energy intensity by 2020 is included in PAEE, and is closely connected to sectoral targets for improving energy efficiency in key sectors of energy consumption: industry, services, agriculture, transport and residential.

**Friends of the Earth Italy propose the inclusion in the new Action Plan for Energy Efficiency (PAEE) of macro sectoral targets for 2020 and 2030.**

This is also referred to in Annex XIV of Directive 2012/27/UE which allows Member States to determine, in their action plans, the 2020 targets for energy efficiency in major sectors such as industry, services, agriculture, transport and residential.

## Proposed of macro sectorial target for energy efficiency in 2020 and 2030

Macro sectors	Macro indicator	Target-value 2020	Target-value 2030
Industry	<i>Tep/k€</i> (value added of the sector)	0,105	0,090
Residenzial	<i>Tep/m<sup>2</sup></i>	0.0114	0.089
Terziary	<i>Tep/k€</i> (value added of the sector)	0,0202	0,0183
Transport	<i>Tep/Mpkm</i> (trasport people)	24,2	21
	<i>Tep/Mtkm</i> (trasport goods)	59,9	54

Source: Friends of the Earth Italy

We use the " macro targets " and " macro sectorial indicators " of energy efficiency terms because the sectors of energy use include production or consumption with very different characteristics from the technologic and energetic point of view (it would be absurd to compare the energy intensity of production processes inherently "energy intensive " with those which are not). This requires an assessment of the levels of energy efficiency indicators with specific consumption per unit in real terms that should be the reference for the improvement objectives, to be considered later at an aggregate level of macro sectorial items.

This definition of macro sectorial targets for energy efficiency offer the basis for a sustainable economic recovery, asking for an intervention strategy integrated with sectorial industrial policies.

### 3) Proposals for the residential sector

By carrying out energy improvements on 4.5% of buildings built before the year 1991 it is possible to achieve savings of about 8.7 Mtep with respect to consumption of 2010 Mtoe (31.67 Mtoe). Such a saving goal requires to improve significantly the measures already adopted during these years:

- **to keep permanent the tax deduction of 55% for energy saving** at least until 2030 and allocate the deduction to a number of annual installments, the lowest in the current ten years;
- to activate new standard cards as part of the TEE for the entire civil sector since this instrument has been shown to have a lower cost than direct incentive schemes (feed-in or deductions), thus streamlining administrative procedures;
- to increase controls in order to ensure the effective quality of the building work;
- to encourage the energy audits of buildings practice in relation to the redevelopment energy;
- to establish funds and to promote mechanisms that make it possible and easy the access to credit;
- to engage municipalities to enact building codes that promote measures to improve the efficiency of buildings.

#### 4) Proposals for the transport sector

Transport is a sector that has significant opportunities to improve energy efficiency through the various tools available for public intervention. The key pillars of action in this direction should be:

- on the supply side, to promote the transfer of research results and innovation applied in terms of reduced fuel consumption and emission of carriers by requiring manufacturers design standards of the carriers ever more efficient;
- on the demand side, to promote the purchase and use of the most efficient vectors in terms of fuel consumption and emissions;
- in terms of developing the infrastructure network, implementing and improving the application and use of ICT technologies in order to optimize the management and utilization of fleets and networks;
- in terms of modal shift, to encouraging migration from road to iron, to inland shipping and the motorways of the sea.
- ***a particular focus will be on the actions required for investment in urban and suburban public transport at present almost completely abandoned.***

#### 5) More energy efficiency in the industrial policy

Friends of the Earth Italy believe that the energy efficiency measures should be synergic with those to stop the process of de-industrialization of the country. A process that affects both the energy-intensive industries and those that are lagging behind in adapting to environmental standards required by the European and national legislation. It often results in the relocation of production activities to countries with lower labor costs, lower energy costs and low environmental standards, such as to cause serious local and global impacts. It is important to encourage all efforts to stop and reverse this trend.

***One of the most effective tools for the growth of competitiveness in the industrial sector is precisely the potential synergy in the production process between the goals of improving energy efficiency and the environmental compliance objectives.*** Consequently, even for the measures to promote energy efficiency in production processes, it is necessary to give priority to interventions that ensure environmental-compatible energy requirements in excess in respect to those required under the regular environmental legislation. For this purpose, a particularly effective tool could be ***the use of incentive schemes that meet the criteria of state aid for environmental protection***, as required by the relevant Community rules. It is also to be noted that this type of instrument allows aid intensity higher than that ordinarily permitted and is also suitable for large enterprises.

In addition, in detail, in order to not penalize industrial initiatives of particular value, it is worthwhile to consider the need to abolish the payment of the general system charges for Auto Production Systems (December 12nd, 2013 AEEG resolution 578/2013/REEL) in the instance in which the production of electricity takes place by heat recovery of the same production cycle in which energy is used.

With the aim of making coherent policies to reduce the cost of energy in small and medium enterprises and those for the competitiveness of manufacturing industry, ***we propose to make the tariff discount for "energy-hungry" companies dependent upon energy efficiency investments*** (in line with Article 17 of Directive 2003/96/EC).

#### 6) To eliminate the progressive rate that penalizes the efficient use of the electric vector

The efficient use of the electric vector (heat pumps, electric mobility), in Italy, is heavily affected by the progressive structure of the electricity tariff and by the charges for the promotion of renewable power which today account for 20% of the cost of electricity.

The Ministerial Decree of December 20, 2012 provided for the removal of this distortion and the Authority for Electricity and Gas has recently approved the launch, on an experimental basis, of a new non-progressive rate from July of this year.

Also Directive 2012/27/UE calls on member countries to remove tariff barriers that hinder the diffusion of an efficient use of the electric vector. In this direction, it is particularly clear the address of the enabling act under which the government has prepared the draft legislative decree at present being examined by Parliament.

The standard implementation of this indication, as formulated in paragraph 2 of Article 11 of the draft Decree, it seems reductive. Friends of the Earth Italy propose to finalize the new tariff and correct it so that the current price distortion that penalizes the efficient use of the electric vector is effectively eliminated.

### **7) Strengthen the mechanism of white certificates (EEC)**

According to the provisions of Article 7 of the draft Decree, 60% of the national energy savings is to be achieved through the mechanism of white certificates (EEC). To achieve this it is necessary **to strengthen and consolidate the mechanism of EEC.**

In this context, we intend to propose:

- to increase the " minimum reference value " of EEC € 250 (compared to 100 € presently);
- the lengthening of EEC delivery duration in all the "useful life" of the intervention (and not just 5 years as is now the case );
- the abolition of the Tau factor for EEC (this would allow an accounting "real" energy saving ", as well as the elimination of risks for the public administration to anticipate the value of energy savings that may never be achieved (e.g., for bankruptcy of the company or substantial change in the production process or relocation of the same);
- the guaranteed withdrawal EEC by the Electrical Services Management (this would allow the bankability of EEC themselves with obvious positive consequences for companies that implement energy efficiency measures );
- the increase and simplification of standard cards for requesting EEC (the aim should be to have at least 70% of EEC generated from standard cards, compared with 20% at present).

### **8) To make operational the potential of the "smart" meters**

Article 9 of the draft decree applying Directive 2012/27 refers to the need to ensure that smart meters provide information on the actual time length of energy use. It is necessary that they are able to detect of the instantaneous fuel consumption even remotely, to allow management systems to optimize energy consumption in the house. Although it is not specified the characteristics of the service, the decree should provide that the counters are adequate for future service that will undertake.

### **9) Keep the role and resources for district heating**

It is necessary to maintain the originally resources envisaged by Legislative Decree n. 28/2011 to support the development of district heating by the Guarantee Fund.

### **10) The consultation process for the new PAEE**

Friends of the Earth Italy ask that in a timely manner a consultation phase on the content of the new National Plan of Action for Energy Efficiency (PAEE) is activated. It is necessary a process of confrontation with the social partners concerned about industrial policy objectives to foster a revival of the industry's competitiveness based on a new cycle of investments to improve energy efficiency and environmental quality.