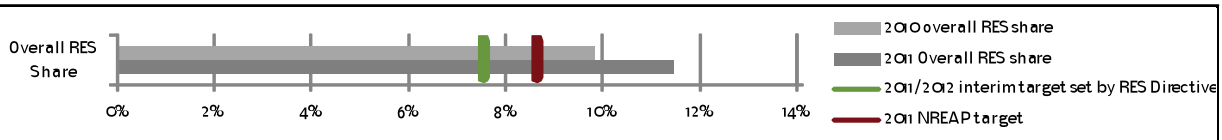
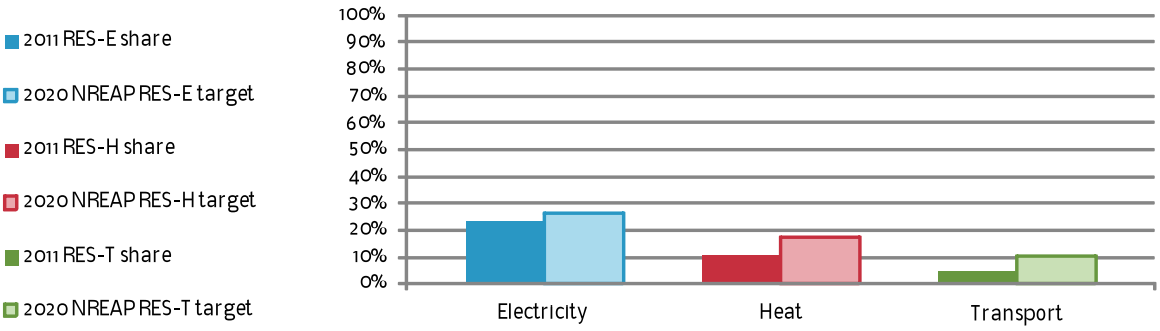
G. ITALY

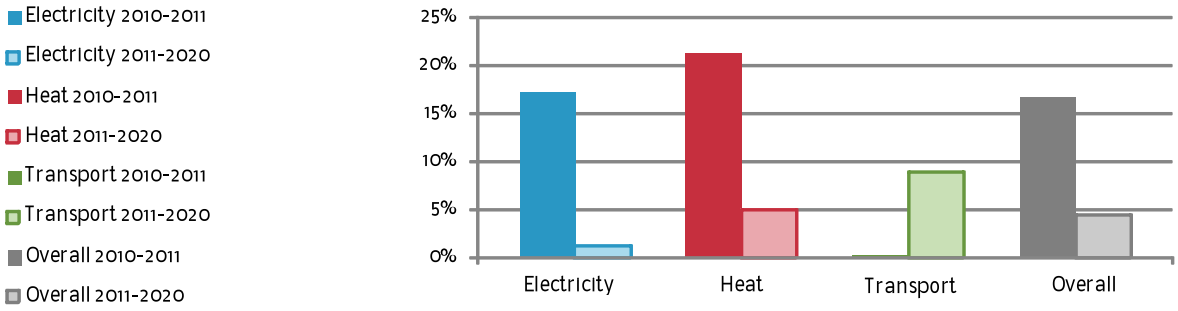
1. NATIONAL DEVIATIONS REPORT





2011 actual share of RES compared to 2020 target share in corresponding sectoral gross final energy demand

	Electricity	Heat	Transport	Total
2011 actual share of RES in sectoral gross final energy demand	23.5%	11.0%	4.7%	11.5%
2011 NREAP target	19.6%	7.1%	4.1%	8.7%
2011/2012 interim target set by RES Directive	-	-	-	7.6%
2020 NREAP target	26.4%	17.1%	10.1%	17.0%
Percentage of sector consumption in total final energy consumption in 2011	24%	44%	33%	101%
2011 Production [ktoe]	7,013	6,070	1,641	14,724
2010 Production [ktoe]	5,924	5,257	1,643	12,824
2005 Production [ktoe]	4,166	1,966	0	6,132
2020 NREAP target production [ktoe]	8,504	10,456	2,530	21,490
Deviation [%] of actual from planned share in 2011	20.32%	54.69%	13.46%	32.64%



RES growth rates achieved from 2010 to 2011 compared to RES growth rates required from 2011 to 2020 by sector

- Italy has met its 2011/2012 interim target and the NREAP 2011 target with an overall increase in RES production from 2010 to 2011 by 16.7 %.
- The 2010-2011 growth rate in the electricity sector almost doubled compared to the prior 6-year average while growth in the heat sector remained on a constantly high level.
- With the growth rates of 2010-2011, targets will be achieved in the electricity and heat sectors while transport production needs to grow faster.

2. NATIONAL BARRIERS REPORT

The Italian RES-E Sector

Support scheme

In Italy, electricity generated from renewable energy sources is promoted through a number of feed-in and premium tariffs and a tendering system. Depending on the source and the size, RES-E plant operators may be obliged to opt for a certain system or may choose between the available ones. Electricity not promoted through a FiT system may be sold on the free market or through "ritiro dedicato" (purchase by Gestore dei Servizi Energetici at a guaranteed price). Under certain conditions, electricity producers can make use of "scambio sul posto" (net-metering) (RES LEGAL Europe database). These last two mechanisms are not compatible with new support scheme introduced by the Legislative Decrees of 5 and 6 July 2012 (the first for PV sector, the second one for the other RES).

Barriers to RES-E

Authorisation procedures for grid connection, grid expansion and plant construction

Authorisation procedures play a relevant role in terms of posing a barrier to RES-E development, deployment and integration. As regards grid connection, three main issues have been reported as relevant: **time-consuming grid connection procedures**, **lack of stability of the current regulatory framework** and **frequent legal modifications changes** (Bruno, Urania, Viganò, APER) needed to deal with the issue of virtual saturation. (Galliani, AEEG) These issues have been referred to as able of creating a bottleneck in the plant construction process. Because of their parallel presence - along with other issues, outlined below - producers find themselves often facing delays in grid connection and being offered connection solutions (points of connection to the grid) not deemed efficient and that imply high costs for carrying out the connection process. In addition, authorisation procedures are to a large extent regulated at regional level, thus plant operators need to deal with different regulations and procedures, depending on the area in which they need to build a plant. (Zorzoli, ISES) This may be particularly relevant in case the plant and the connecting line range across two regions with different regulations.

Grid operators, also face **difficulties in the expansion and reinforcement of the grid** because of existing blockages linked to authorisation procedures. This barriers concerns in turn also RES-E plants, as reinforcing and expanding the grid is a necessary step to accept additional RES-E capacity. Given their steep growth, PV and wind are the most affected technologies. Because of the current regulatory framework for grid expansion and reinforcement, grid operators need to obtain permission to construct or reinforce the line from all local authorities affected by the project. With respect to the previous situation, Legislative Decree 387/2003 managed to simplify the procedure to a large extent, although it was not fully able to solve the issue and issues linked to the administrative procedure for grid expansion and reinforcement still persist (RES Integration - National Report Italy). Furthermore, in some parts of Italy, especially in the south of the country, the grid is relatively weaker and there is wide availability of wind energy. Plants, however are generally located far away from urban centres and industrial areas, and cannot always exploit their full potential because of the weaker grid infrastructure (Bruno, Urania, Viganò, APER). RES-E have grown at a very fast rate in recent years, and to match this growth in generation, grid capacity should also have kept pace with this development. This, however, has not always been the case because of the administrative issues mentioned above. As a consequence producers' waiting times for grid connection can be very lengthy (RES Integration - National Report Italy), causing in turn a disincentive to producers to invest in new plants (Bruno, Urania, Viganò, APER). It should also be mentioned that, although the investment level in grid expansion and reinforcement is now adequate, there has been a delay in adapting the level of investments in grid development to the needs of RES-E generators in the past years (Zorzoli, ISES), creating further difficulties for plant operators. A possible solution could be to further facilitate the authorisation process for the construction of new lines. Contextually, additional resources for grid development could be invested.

Although in the last years there were some progresses to simplify procedures, with Legislative Decree 387/2003 and especially for small plants, experts indicated that the **complexity of the authorisation process** does not yet fully allow full certainty in programming timing and investment costs for developers. Specifically, this complexity is caused by some lack of clarity of procedures and by the delay experienced in the release of documents from authorities. In addition, laws may be interpreted differently in different areas of the country and different documents may be required for the same process, further adding to this complexity. An example of this is the non-homogeneous application, across the country, of Legislative Decree 115/08, related to building-integrated PV panels and small wind turbines. According to the law, in case a building is located in an area not subject to

regulatory constraints, no Activity Start-up Notice (ASN) should be required for installing a RES-E plant. According to stakeholder, however some small municipalities are not aware of this decree and still require and ASN application required even if no restriction is present. The main consequence is a delay (the 30 days required for the tacit approval) and an increase in the costs of the authorisation process for the ASN application (AEON), thus again contributing to longer lead times, and causing additional costs for the authorisation process (Bruno, Urania, Viganò, APER)

Virtual saturation and speculation

The complexity of the above-outlined authorisation procedures, together with the difficulty of expanding the grid to accept all generated RES-E capacity create a fertile ground also for another set of barriers: virtual saturation and speculation.

Virtual saturation occurs in situations in which grid capacity is technically available, but is reserved for plants under construction and cannot therefore be used for connecting other plants. During the RES-E plant project lifecycle, in fact, producers need to inform the grid operator about their plant's size and connection point. This is needed because the grid operator has to reserve a certain amount of capacity for the plant while it is under construction. This way, as soon as the plant is realised and connected, the grid will be able to accept and transmit its produced electricity. While plants are being built, then, the grid is not physically congested, but the available capacity is reserved for projects under construction. Even if other plants could quickly be built and could start generating electricity, they would not be able to connect directly because no capacity is available. To connect, they would in fact first need to request a grid reinforcement or expansion to the grid operator. The complex administrative procedures for grid expansion outlined above, though, impede a swift expansion of the grid, creating longer waiting times for grid connection for plant operators. (RES Integration - National Report Italy)

Because of this situation, **speculation practices** are also taking place in areas with large RES resources and long waiting times for grid connection. In practice, some investors would apply for several projects and request grid connection for them. Once grid capacity has been reserved, they would then attempt to obtain profits by selling the whole project for a higher price. This is made possible as buying a project with reserved capacity results attractive to interested investors. This would in fact allow other investors to jump in front of the queue of projects currently waiting for capacity reservation, and thus to realise their intended project in a shorter time. (RES Integration - National Report Italy)

This barrier leads to longer waiting times and higher costs for developers, as well as to a slower process for RES-E development. The presence of speculative behaviours, furthermore strongly fosters virtual grid saturation, giving thus rise to a vicious circle. (RES Integration - National Report Italy)

The Authority tried to solve the problem of virtual saturation in different ways, including a financial guarantee. APER and some operators have taken a legal action against this provision (Bruno, Urania, Viganò, APER). A different solution is now being applied with AEEG Regulation 226/2012: capacity reservation is now granted only after the building consent has been obtained by the plant operator, thus only after the time end effort involved in a project would justify realising the plant.

As regards real grid saturation, which is also present but limited to some lines in the southern regions (which are already being reinforced) a possible solution could be to improve energy storage, especially for PV and wind technologies. Such systems may in fact contribute to mitigate this issue (Galliani, AEEG). In most cases, however batteries remain expensive and cumbersome even if these are a highly promising solution (Bruno, Urania, Viganò, APER).

Financial environment

Because of the major changes in the past year in terms of support schemes, including also the delays that accompanied their drafting, the financial environment for RES-E producers has been indicated as uncertain to some extent (Bruno, Urania, Viganò, APER).

Currently, the **support scheme environment** presents a quite complex structure, counting on several instruments which include feed-in and premium tariffs, net metering, bidding schemes and tax incentives; the existing quota system "Certificati Verdi" is currently being phased out, as directed by Ministerial Decree 6 July 2012. Reasons

reported for causing this uncertainty among stakeholders include, among other factors, the delay with which the Ministerial Decree has been published (several months after the established deadline), and specific aspects linked to the new bidding scheme. Until the bidding process is over, plants accessing incentives via this new scheme suffer uncertainty not only with respect to the exact amount of the tariff they will be granted, but also with respect to the access to the incentive itself. Clearly, this may create additional issues, e.g. with respect to business forecasts. Stakeholders clearly indicated that more stability in the overall framework could be advised (Bruno, Urania, Viganò, APER). It should be considered, nevertheless, that it is reasonable to expect only minor modifications in this framework in the coming months, given the extent of recent changes.

Problems have also been outlined with respect to **access to finance**. Contacted associations, in fact, have outlined how the new Decrees have introduced more demanding administrative requirements as well as a limit to the amount of plants that could receive the incentive. Because of this limit, then it may be that not all plants that apply would be granted access to the support scheme at the end. Considering that in general the economic viability of a RES-E investment still depends on support schemes, stakeholders have reported that banking institutions are being more cautious to grant loans for such investments, making it in turn more difficult for producers to actually undertake the investment for a new plant (Bruno, Urania, Viganò, APER).

Clarity in terms of taxation is a further aspect that has been outlined as problematic. Specifically, the tax structure is quite complex and many bureaucratic fulfilments are necessary at this stage. In addition, at times local tax agencies may provide different interpretations for the rules, thus leading to different treatments of operators. Experts outlined that a revision of the laws, providing a clearer, unambiguous rule, could be advisable (Bruno, Urania, Viganò, APER).

The Italian RES-H Sector

Support scheme

In Italy, a tax regulation system is currently in place for the promotion of RES-H. In addition, a loan is also provided for the years 2012, 2013, 2014, for new installations (RES LEGAL Europe database).

Barriers to RES-H

Information and awareness about RES-H

The first barrier outlined for RES-H is mainly of a cultural type. Users may not know about RES-H and the opportunities they offer, or may be misinformed and may not trust the technologies, considering them unreliable or having doubts about their renewable aspect. Banking institutions, on the other hand, may also lack sufficient knowledge about these sources and may thus prove more cautious in allowing credit for investments in this technology. This lack of awareness, apparently, also applies to the public side, where sometimes bureaucratic requests for the granting of permits from authorities exceeded the ones set by law, particularly in the case of geothermal and biomass. In some cases this also took places with respect to requesting incentives. This lack of knowledge is deemed likely to affect the decision-making processes of operators and can lead therefore to negative choices related to misjudgements and to delays in the technology diffusion and market development.

In time, bodies such as ENEA, Itabia and other industry associations, as well as regions and universities tried to solve this issue by producing brochures and other tools to raise awareness, but more effort seems to be required. In the so-called decree "conto termico" (at the time of research still a draft decree for a new incentive scheme for RES-H) some information measures that could reduce the problem are provided. Similarly, media attention about the topic has increased, in connection with the growing general interest in “green” topics and because of this basic information about RES-H is being streamlined. Further steps to be taken to overcome the issue call for the non-commercial involvement of relevant RES-H associations, possibly, with collaboration with third parties such as universities, energy agencies and scientific and technical associations (Di Santo, FIRE).

Qualification of operators

According to contacted experts, and in connection with the above-mentioned issue, the level of qualification of installers is often insufficient in Italy, except for the ones specializing in renewable heat technologies. This means that in the majority of cases, final users are not directly in touch with specialised operators and therefore it is less likely that they are provided with advice as regards the implementation of RES-H plants. Moreover, because of this lack of specialisation, projects and installations are not always carried out at a sufficiently high standard and may lead to lower returns for end users. Examples brought forward by experts in this regard include incorrect integration in existing building plans, sub-optimal sizing of the plant or flaws in the operational set-up.

One of the main causes of this barrier has been identified in the lack of control in buildings by central and local authorities. Stakeholders indicated that because of this lack of control, no actual reward is in place for installers that invest time and resources in training and therefore an incentive to undertake such activities is lacking. Furthermore, it has been reported that there is a non-negligible black market for interventions of limited size, which also does not help end users to protect themselves against lower standard works for RES-H installations. This issue appears to be particularly relevant in the case of smaller technologies for the residential market, where an extremely large number of small and unspecialised installers is operating. Only medium and large size plants, usually entrusted to specialised companies and technicians, and users in areas particularly competitive for RES-H such as mountain areas not reached by a natural gas grid, are exempt from this barrier.

As a consequence of this issue, users may be more inclined to choose traditional technologies over RES-H. Furthermore, incorrect RES-H installation projects may cause economic losses to individual users and a consequent loss of image of the technology. In the longer term, experts reported that a lack of qualified technicians may hamper a large market growth for renewable heat, except in the areas outlined above. (Di Santo, FIRE)

Legislative Decree no. 28/2011 provides that specific programs for qualification of operators, in accordance with the existing EU directives are to be initiated from 2013 onwards, although there is evidence of delays in their implementation (Zorzoli, ISES). To this aim, trade associations and large players in the RES-H technology manufacturing sector have been working in to improve the qualification framework. Furthermore ENEA, following

a recommendation of the Ministry of Economic Development, is currently drafting training programs that will be passed on to the regional administrations and given at regional level. Regional administrations can improve or adapt these programs to their needs. The solution brought forward by Legislative Decree no. 28/2011 goes some way to solve the problem, however much of it will depend on the quality of the training programmes drafted by ENEA, on their actual implementation by regional authorities, and on the controls at the local level. Additional actions to be undertaken could be to associate to these trainings an adequate system of controls on the achievements planned and to encourage the spread of skill certification schemes by accredited third parties. (Di Santo, FIRE)

Lack development of the biomass supply chain

This barrier mainly refers to the need to set up a modern logistics infrastructure for the biomass supply chain, necessary to tackle a large-scale biomass industry. This involves, for example, forest management, short rotation forestry, emission reduction, system automation, transport logistics, management of ashes. Experts have indicated that the current lack of such systems is mainly due to a insufficient controls and land management policies. It should also be considered, however, that supply-chain-development-issues may occur in general in the market start-up phase or in the transition phase from a local market level to the national or international level. In other words, these issues are not unique to biomass, but may occur also in other sectors, depending on the development stage.

Two consequences have been identified as a consequence of these supply-chain issues:

A tendency to use imported biomass, with negative effects on the overall balance of payments and a blockage to the development of local activities.

A strong brake on the spread of technologies on a large scale.

Biomass, because of this supply chain underdevelopment, results less competitive in comparison with traditional sources and with imported biomass backed by a developed supply chain. Traditional sources supply chains, in particular, can count on several years of development and are fully automatic, less polluting and logistically developed, whereas biomass supply chains are generally not. This has another important implication: a less-developed supply chain may present higher risks than one adequately developed, and for this reason accessing finance for biomass plants may also present additional difficulties.

Other consequences of this issue include higher costs for users that need to rely on other sources or imported biomass, as well as indirect effects in terms of land not exploited or abandoned. Relevance of this barrier is quite widespread: only mountain areas not reached by the natural gas grid are exempt from the barrier, but even in this case there may be problems for the diffusion of small biomass systems and district heating networks could be favoured.

A round table at the Ministry of Agriculture has been initiated following the requests of some associations; however discussions are still in the initial phase. Experts have indicated that a larger role of the Ministry of Agriculture could be beneficial in terms of promoting laws that support a national industrial production of biomass and that include forest management in a wider perspective (Tomassetti, FIRE).

Legal framework and support schemes

A first aspect that arose about the legal framework is its peculiar **complexity**. Several laws regulate the RES-H sector and some clarity lack and instability have been brought forward as an issue. In particular, several legal provisions are set up at regional level and thus lack common references (REPAP).

Contacted stakeholders have brought forward **specific cases** with respect to different RES-H sources when it comes to the overall legal framework. In particular, problems affecting the sector include a lack of implementation of primary measures and inconsistency between measures of different nature. For example:

solar thermal is affected by a lack of regulations related to the installation of systems suitable with users in new buildings of systems suitable and the dissemination of integrated systems in the building;

For medium to large size biomass plants, the regulatory management of products causes some potential fuels to end up in the waste cycle; same goes in the case of ashes, that at the moment are not always used as soil improvers;

ground water systems are subjected to very different regulations at provincial level.

These issues, though technology-specific, can be traced back to the distribution of responsibilities to local, regional and national authorities as regards the overall legal framework. Responsibilities, in fact, appear not to always be organised and consistent when it comes to drafting and implementing provisions, or to granting authorisations. Furthermore, stakeholders have indicated in some cases a lack of internal governance organisation and of effective internal procedures both at national and at local level.

This barrier has important consequences on the implementation of legal provisions. On the one hand it makes their adoption sporadic, on the other hand it creates uncertainties that make access to credit more difficult and costly. In addition to this, this barrier has been reported to divert and waste resources within administrations, and to disadvantage the development of large corporations or the entry of foreign players in the market.

In the recent National Energy Strategy launched by the Ministry of Economic Development, some space is devoted to the review and the efficiency of the governance system, however stakeholders outlined that it is unlikely that this transformation will be able to take place if efforts are only concentrated in the energy sector, as reviewing the governance system is a long and difficult undertaking. To this aim an introduction of a single, centralised legal source could provide additional clarity. This could be published, for example, as a legal regulation of the Authority for Electricity and Gas.

A further issue outlined in this context is that **specific support schemes for RES-H** are currently lacking. Some incentives and tax deductions exist for energy efficiency measures and these cover in some cases also RES-H plants (RES LEGAL Europe database), namely:

- A 55% tax deduction scheme, linked to proof of energy savings with a new RES installation
- A loan for new installations ("Fondo Kyoto"), running at least until 2014.

These schemes do not currently have the same breadth as a larger, specific support scheme. It should be indicated, however, that a more comprehensive support scheme for RES-H is currently being drafted and that the draft law, is undergoing the approval process in the parliament. It is expected that this new scheme will enter into force in early 2013.[68]

For building-integrated solar panels, the **non-homogeneous application of Legislative Decree 115/08** is a further identified barrier. According to the Decree, if the building is located in an area not subject to regulatory constraints, project developers do not need to submit an Activity Start-up Notice (ASN) to the competent authority. Some local authorities (e.g. small municipalities), however, may not be aware of Legislative Decree 115/08, and may thus require the ASN application even if no specific restriction is present on the area. This has been reported to cause delays in the process, beyond the 30 days after which a tacit approval is granted by law if no answer from the authority is received, and an increase in the costs of the authorisation process for the ASN application. (AEON)

Administrative procedures for environmental processes have also been indicated as disproportionate in the case of low enthalpy geothermal energy plants. Legislative Decree 22/2010 places vertical loop ground heat pumps under the jurisdiction of local authorities. Two consequences arise from this: firstly, a fragmentation in terms of regulation, and secondly, since in most Italian Regions geothermal heat pumps must comply with stricter general environmental, soil and water protection legislation, specific environmental legislation for these plants is lacking. For this reason, this technology might be burdened in some cases with having to comply with disproportionate administrative requirements. This is particularly relevant if the case of closed loop technologies is considered: these have lower groundwater and soil contamination risks, but need to comply with the same environmental requirements of other technologies. As a consequence, the authorisation process is further stretched and may take longer than expected.

[68] At the time of research, such a scheme had not yet been adopted. With Ministerial Decree 28 December 2012, however, a renewable heat incentive has been officially established.

The Italian RES-T Sector

Support scheme

The main support scheme for biofuels in Italy is a quota system. This scheme is the main tool through which the 2020 biofuels goal are meant to be achieved. (RES LEGAL Europe database)

Barriers to the transport sector

Information

The main barriers outlined in this context are the lack of sufficient information and the insufficient knowledge of involved actors. According to experts, this issue is impacting all the process steps in the RES-T sector, from the beginning (initial decision process) to the identification of suitable support schemes. A possible solution brought forward would be a further involvement of the Ministers of Transport and of Agriculture in terms of implementing a more specific regulatory framework for the development of sustainable transport systems (Bruno, Urania, Viganò, APER)

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comprehensive science. For example the International Food Policy Research Institute (IFPRI) model used to calculate the factors fails to take into account certain agricultural realties and animal feed co-products. If fuel suppliers are required to report against the factors as they stand now, they will be seen to be producing a product that is against the aims of the RED. This in turn will cause significant damage to the public perception of biofuels in the EU (REA 2012).

Proposed double/quadruple counting

According to REA (2012), both first and second (advanced) generation biofuels are struggling to obtain project finance due to perceived market and technology risks. "Although the proposal for double or quadruple counting for second generation biofuels is welcomed, it will not help to get projects financed as the mechanism is yet untested and the value uncertain. Without a stable market beyond 2020 and a timeframe that allows returns to be made in line with rational business plans, technology developers and potential investors will not be willing to commit to the market. Lacking longevity and stability, even quadruple counting is unlikely to bring forward the necessary investment".

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