



**IEA WIND TASK 28**

**SOCIAL ACCEPTANCE  
OF WIND ENERGY PROJECTS  
"Winning Hearts and Minds"  
STATE-OF-THE-ART REPORT  
Country report of ITALY**

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## Framing the issue

### 0. Introduction

#### a. Introduction by the Operating Agent of IEA Wind Task 28

In 2009, many governments and organizations set new targets for CO<sub>2</sub> reductions, renewable energies in general, as well as specific targets for wind energy deployment. All these targets require many single projects to be carried out both onshore and offshore that necessitate hundreds of siting decisions and therefore hundreds of communities accepting a wind project nearby.

Research and projects are ongoing in many countries on how acceptance could be fostered, but we need to look beyond national borders to learn from each other and to complement each other's approaches. While Denmark has one of the longest traditions of co-operatively owned wind farms, Japan may bring its expertise in generating additional benefits for the communities hosting the turbines. While Ireland and Canada know about the effects of wind parks on tourism, Norway has conducted actual research on communication between society and science, e.g. concerning bird risks with wind farms.

In the framework of the IEA Wind Implementing Agreement, Task 28 collects and disseminates the current knowledge on how to increase acceptance of wind energy projects with the aim of facilitating implementation of wind energy and climate targets.

Several countries have officially committed to Task 28 and have provided an input for cross-national comparison and discussion by writing a national report such as the one on hand. The Italian report has been incorporated into the international State-of-the-Art Report by IEA Wind Task 28, available also on [www.socialacceptance.ch](http://www.socialacceptance.ch).

#### b. The issue: Social Acceptance of Wind Energy Projects in ITALY

The EU Directive 2009/28/EC on the promotion of energy from renewable sources requires the European Member States to achieve some objectives by 2020. Italy is asked to cover 17% of gross national energy consumption with energy produced from renewable sources. Italian energy policy rely very much on wind energy to reach the assigned energy goal.

The National Action Plan for the development of renewable sources (2010) estimates that by 2020 renewable sources should contribute with an electricity production of 98,9 TWh, 25% of which to be supplied by wind energy. Within 2020 total installed wind power capacity should reach 12680 MW, with a 680 MW contribution from off-shore plants. In 2012 with a production of 13400 GWh wind plants already accounted for 17% of the electrical national target.

Following the strong incentive policy promoted by the Italian Government to support the development of renewable energy plants, the installed wind capacity has risen up to the actual 9000 MW (2013) in less than a decade, most of which located in Southern Italy. Though social opposition to specific wind energy projects has not been a large barrier to wind energy development, questions regarding the economic viability and the ability of grid operators to effectively manage wind energy have become much significant over the time. Much concern is put on the need to a further development of the transmission network deriving from the fact that most of the wind energy production are located in low consumption regions and therefore the production has to be moved towards higher consumption centers.

Since 2013 wind energy incentives have been strongly reduced and in the meantime also local political acceptance has lessen, partly due to the necessity of the Regional Governments to cope with environmental protection targets. As regard the off-shore wind plants, up to now nearly the totality of projects have faced a strong political opposition, mainly from the national board in charge for the protection of landscape and cultural heritage.

At present a great number of applications for new projects both for on shore and off shore power plants are waiting to be processed by regional or central authority.

## 1. Definitions

In this chapter the purpose is to clarify the key terms of this report and how they are defined in Italy.

### a. Social Acceptance

In Italy a wide applied definitions of “social Acceptance” is that of Wüstenhagen and his colleagues (Wüstenhagen - 2007). They identify three dimensions to define the concept of social acceptance:

- a) Socio-political acceptance refers to public opinion and the acceptance of key political and economic actors. The role of political actors is, obviously, very important. Politicians have the task and the opportunity to build effective policies to enhance the community and market acceptance of wind power.
- b) Market acceptance, that means the process by which market parties adopt and support the energy innovation. Key actors of this area include consumers and investors. The socio-political and market acceptance offer insights on the commitment of policy actors for the development of wind power. It also shows the interest of economical actors and the various models promoted for this industry.
- c) People and community acceptance. It refers to the acceptance of the local population, the communities that are directly affected by the installation of wind energy farms. The community acceptance dimension offers a local perspective of social acceptance of wind power. Some of the elements that affect community acceptance are distributional justice, procedural justice and whether the local population trusts the intentions and information of the investors and other actors from outside the community.

All these elements, combined with the local dimension, have an effect on the social acceptance of wind power.

Each aspect of social acceptance is crucial, indeed. Some dimension are more or less developed in Italy. While market acceptance is quite good, the socio-political acceptance of wind plants varies on time and space, according to local sensitivities and local economic constraints. Community acceptance is rather low, both for wind energy and other kind of project, because of an authoritative procedure that do not involve local actors, except in the last phase. A new law on public participation to public utilities structure is occurring and is under ministerial and parliament study.

However to better depict the Italian situation of the social acceptance the differences due to spatial scale should also be taken into consideration. National, regional, and local politics can have indeed very different and contrasting goals, sometimes leading to a schizophrenic legal framework, generating uncertainty among stakeholders and hindering the authorization process.

### b. On-Shore / Off-Shore

Currently, all the wind energy produced in Italy is due to on-shore wind facilities.

Onshore plants are mainly located in remote hilly areas and highlands. The distribution of wind power installed in Italy shows a net prevalence of the southern regions, especially Campania and Apulia, and big islands, according to the availability of the wind.

Italian wind energy potential has been estimated in 12000 MW onshore and 2400 MW as low to medium-depth offshore. More 8000 MW are estimated for deep water installations. Whilst the 2020's target for on shore capacity approximates very much to the estimated available potential, the Energy Plan indicates a target of only 680 MW for offshore development. Offshore development is limited by technical or economic constraints: most of the windy offshore areas are indeed located too far from the coast and/or in very deep water. This is compounded by the uncertainty of the authorization process (Perini, 2014). At present a number of application for off-shore installation are still at the environmental impact assessment phase, while only a 30 MW-project participated at the auctions provided by the actual incentive scheme for offshore wind plants.

### c. Large Scale / Small Scale

Definition of small versus large wind plants in Italy is mostly related to the rated power of the turbine.

- As regards the authorization procedures, according to the Legislative Decree n.387/2003, plants with a total power of less than 60kW can access a simplified authorization procedure,

however about one third of the Regions have extended this limit up to 1 MW. Micro turbines with height <1.5 m and diameter <1 m can be freely realized, if not located in protected areas.

- As regards the environmental procedures, according to the national legislation, plants above 1 MW must undergo the EIA procedure or other environmental evaluation procedure, however some Regions have lowered the limit to 200 kW or even to 60 kW.
- As regards the incentives scheme, small plants up to 60 kW have direct access to the incentive, while plants up to 5 MW must be enrolled in a special register in which they are entered in priority order. Larger plants follow a reverse auction scheme.

Small turbines sector appears to have grown in the last few years, although total installed capacity is not well known because only larger installations are monitored by either industry associations and regional/central government.

#### d. Transmission lines

Italian electric grid system consists of a national high voltage grid and local distribution grids. The national grid is operated by TERNA<sup>(2)</sup>. Distribution grids are owned by national companies (mainly Enel Distribuzione<sup>(3)</sup>) and by regional and local companies.

The majority of Italian wind plants are connected to the transmission line. The transmission grid has not been developed at the same pace as the power plants. Energy dispatching problems have therefore arisen in those regions where installed capacity is much higher than local consumption and energy must be transferred to major load centers. The intermittent character of wind as energy source is also a major technical hurdle for the integration of wind power into the existing electrical system. TERNA up-dates yearly the national grid development planning<sup>(4)</sup> providing reinforcement projects and other measures, such as the implementation of energy storage systems, to overcome grid inefficiencies and dispatching limitations. TERNA has also set plans for facing the integration of wind power into the existing grid. Community acceptance of transmission lines is rather low and building new transmission lines usually faces local opposition. This fact often contributes to worsen the public opposition towards wind plants.

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<sup>2</sup> <http://www.terna.it/>

<sup>3</sup> <http://eneldistribuzione.enel.it/it-IT>

<sup>4</sup> [http://www.terna.it/default/Home/SISTEMA\\_ELETTTRICO/piano\\_sviluppo\\_rete.aspx](http://www.terna.it/default/Home/SISTEMA_ELETTTRICO/piano_sviluppo_rete.aspx)

## Industry Status and Stakeholders

### 2. National Wind Energy Concepts

Wind energy started to be settled in Italy on the last '90. But the last decade was the one that shows a great development of new wind plant. After the modification of Title V of the Italian Constitution on 18 Oct. 2001, energy planning and implementation policies have gone under shared State and Regional responsibility. Although the Italian Government encourages wind energy implementation, this is not always true for Regional Governments, especially where local economy is soundly based on tourism and development strategy is primarily driven by landscape and environmental protection.

Problems at the regional scale have arisen by the delayed issuing of the National Guidelines for the implementation of renewable sources power plants, which caused a lack of decisional power in the regional Governments and hence their impossibility to steer the development of big projects within a well regulated framework.

The 2012 turnover related to wind energy in Italy was about 3.5 billion €. The Italian production of wind turbines covers about 14% of the internal market, while the national production of components covers about 48% of the market. Nowadays, a great amount of the usable wind resources has been already been exploited. The remaining quota refers to more expensive site (ex.: far from roads, deep mountains), and the less profitable ones. These elements leads to the fact that repowering should become a new deal to face with.

#### a. Policies and strategies for wind energy

One of the most important documents for Italian national climate and energy strategy is represented by the PANER, (the Italian National Energy Plan for Renewable Energy) that requires in the next few years the development of wind energy and other renewable sources in order to achieve the binding European energy targets (for Italy set at 17% of the gross final energy consumption).

The implementation of the national strategy is regulated by the Ministerial Decree of 15/03/2012, which provides the national targets for the RES-E (electric energy), RES-T (thermal energy) and RES-C (fuels for transportation) penetration, together with the details of such targets for each of the Italian Regions. Given the already high degree of exploitation of the hydraulic source, a relevant increase in electricity production is substantially expected from wind and solar sources. The technical potential for wind power estimated by the government is around to 12-14 GW, with an annual growth of the installed capacity of around one thousand MW per year. As already outlined, the National Implementation Plan calls for some 680 MW of off-shore wind until 2020.

#### b. Incentive programs for wind energy

In Italy incentive mechanisms and withdrawal of electricity are regulated since 2005 by GSE <sup>(5)</sup>, the state-owned company which promotes and supports renewable energy sources development. In particular, GSE fosters sustainable development of electrical production by providing support for renewable electricity (RES-E) generation and by taking actions to build awareness of environmentally-efficient energy uses.

The common feature of incentive and withdrawal mechanisms is that they apply only to certified RES power plants and to the net electricity injected into the grid.

A decisive boost to wind power development was given starting from 1999 by the Green Certificates scheme introduced with the Legislative Decree 79/99. In 2012, almost 17 million Green Certificates (size of 1 MWh) were issued, for an approximated value of 1,359 Million€. Over a half of the Green Certificates were issued for wind power production. Small producers (plants up to 200kW) could alternatively access to the Feed-in tariff, a national scheme providing a fixed rate over a 15 year period.

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<sup>5</sup> [www.gse.it/](http://www.gse.it/)



As an alternative to the incentives, small producers can access to Net Metering (Scambio Sul Posto - SSP) and to simplified purchase/resale arrangements (Dedicated withdrawal –RID). The SSP provides to the electricity producer a repayment of the expenditure for the purchase of the consumed electricity by the amount of produced energy fed into the grid from the plant. The access to SSP is dedicated to renewable sources plants up to 200 kW.

Given the actual penetration of RES-E (more than 90% of the 2020 objective), the need for a general revision of the incentive strategy (as required by UE) and for a more careful and cost-effective governance of RES plants, the Italian Government recently modified the incentive scheme for RES-E (Ministerial Decree of July 6<sup>th</sup> 2012).

The new scheme is aimed at promoting the development of a more efficient energy system, by limiting the yearly development of new electrical power plants and by supporting primarily the most environmentally and economically virtuous projects.

The Decree provides that the indicative cumulative cost of all types of incentives awarded to RES-E plants (other than photovoltaic ones) shall not exceed an overall value of €5.8 billion per year.

Power plants come into operation after January 1<sup>st</sup> 2013 can now access to two separate support schemes:

- All-inclusive feed-in tariffs for plants up to 1MW;
- Feed in Premium pattern for plants over 1MW capacity.

The main novelty of the decree is the introduction of three different ways of access to the incentives, depending on plant capacity and type of project:

- Direct access (for plants under a given power threshold – 60 kW)
- Enrolment into Registries where plants are ordered according to priority criteria aimed at promoting more economically and environmentally efficient projects;
- Participation in competitive reverse auctions (plants over 5MW). The goal of this mechanism is to promote competition and reduce costs for rate payers.

The new support scheme also introduces yearly supportable-capacity quotas, in each year from 2013 to 2015, divided by type of source and plant and in accordance with the applicable procedures for access to the incentives.

**Table 1 - Yearly quotas of power to be put to reverse auction in Italy**

	2013	2014	2015
	MW	MW	MW
On shore	500	500	500
Off shore		650	

Since the publication of the decree, concerns have arisen relating to the possible reduction of new installed capacity over the next years due to the uncertainty in the awarding of incentives. Actually, after a first year of adjustment, when the committed capacity was about 90% of the available amount, requests to access the auction procedure have exceeded the 2014 reserved capacity.

**Table 2 - Provisional contribute for the year 2014 for wind power plants (total RES-E provisional budget is about 5080 M€). Source: [www.gse.it](http://www.gse.it)**

Incentive	M€	MW
Green Certificates	1241	8000
Feed-in tariff (up to 200kW)	5.4	22
CIP6	7.1	158
Registries and auction (MD July 2012)	65.3	790 <sup>(6)</sup>
In-service plants (MD Jul2012)	17	167

<sup>6</sup> Includes 700MW allocated for plants >5MW. The 2014 provisional amount includes the previous year's unallocated power.

### c. Spatial planning

The Italian law requires that spatial planning as a whole should be regulated by the Regions by means of the Regional Landscape and Spatial Plan (PPTR), a higher-level plan to which other spatial-concerning secondary plans must comply. However, during the early wind power development, the existing PPTRs didn't include any reference to the exploitation of renewable sources and to a correct management of their development process.

Until 2010, the decisional process for the installation of renewable power plants belonged only to the licensing procedure for industrial projects and to the Environmental Impact Assessment procedure (EIA), either under provincial or regional competence.

In 2010 a Ministerial Decree was enacted containing the criteria for RES spatial and landscape planning. According to the Decree, each Region has the opportunity to identify the areas that are not suitable to host renewable power plants, in relation to different plant typologies. The designation of unsuitable areas must be consistent with the provisions of the PPTR. Unsuitable areas are not considered as definitively forbidden but only as areas with a very high risk of rejection during the EIA process. Likewise the localization outside an unsuitable area doesn't guarantee a positive environmental assessment of the project.

The Decree suggests a list of typologies that should be considered as unsuitable in relation to their particular sensitivity or vulnerability to landscape transformation, such as: natural protected areas (national, regional, local), Important Birds Areas, archeological sites, areas of high cultural and landscape value, areas of valuable agriculture and food products

Until now 11 out of 20 Regions have proceeded with the designation of unsuitable areas for wind power plants. Generally, depending on the protection targets underlying the designation of each unsuitable area, the regional regulations might allow the installation of micro or mini turbines (less than 20-200 kW) or somewhat bigger plants in case of communities targeted for specific plans, such as rural development plans.

*Most of the existing wind capacity in Italy has been installed before the entrance into force of the Decree. Given the major public concern arisen from how wind farms have been installed in the land until now, the Decree gives particular attention to this topic and provides guidelines for the correct siting and design of wind turbines within the landscape and the environment.*

An important concept of the guidelines is the acknowledgment that a wind turbine may in no way be concealed and that the visual impact can only be mitigated by letting the wind plant become a part of a new landscape. In this sense solution like: adapting the turbine spatial distribution to the landscape main geometry; locating the turbines in groups instead than scattered all over the area; ensuring that turbines within the same visual area possess homogeneous aesthetic features are some of the solutions suggested to enhance the visual effects of wind farms.

### d. Strategies: From policy to local acceptance

At the early stage, wind development in Italy has been economically very favorable not only for the producers, receiving high economic incentives granted by the support mechanism in force at that time, but also for the hosting municipalities which were allowed to make agreements with the wind companies and received production-based royalties. Very often the municipalities could suddenly rely on oversized revenues. This sort of local policy was seen in some cases as a means to enhance local acceptance but on the other hand it led to many unbalanced situation, especially because local governments could generally rely on limited resources and expertise to evaluate technical wind turbine impacts studies. The monetary driver has been more often the sole element to drive the decision at the local level.

The situation has now greatly changed since the issuing of the Ministerial Decree of September 9, 2010. The decree expresses very clearly that none monetary consideration is due in favor of the municipalities merely for the fact that they are hosting the RES-production activity. In fact, differently from water, wind as well as solar energy is not regarded as a local resource and therefore compensation for its exploitation is not provided.

The Decree, however, introduces the concept that the exploitation of local energy resources should be consistent with the local development projects and respectful of the socio-economic vocations of the



area. Compensatory measures are allowed only if the requirements linked to the implementation of the national energy strategy require high territorial concentrations of activities or the installation of high impact facilities and infrastructure.

The effect on local acceptance of this new regulatory regime has still to be evaluated.

### 3. Stakeholders / target groups

Italian legislative scheme for the development of renewable sources gives to some actors a more relevant role, and a minor one to others. In particular:

- the central administrator:
  - defines the national energy, climate protection, and other targets for the use of renewable sources
  - negotiates with regions the regional distribution of these targets
  - defines general rules for energy exploitation, and ask to the regions to detail them for the administrated land
  - identify a national incentive scheme
- The regions:
  - Detail energy exploitation rules for the administrated land
  - Manage EIA procedure, for their competence
  - Set the spatial planning
- The market: current legislative framework considers the production of electricity free activity, in respect of the obligations of public service, and its development is mainly led by the market.

#### a. Stakeholder's perspectives towards wind energy

Stakeholders are a very large and diverse group that include government officials, developers, the population in general and the local population. Stakeholder groups have different perspectives of wind energy. There are data on the perspectives of some groups but not others; this might be the consequence of the recent development of wind energy in many region of Italy.

On 2011 RSE performed a recognition of the national feeling about wind energy. The research was performed by means of focus group, inviting the major opinion makers (utilities and grid owners, developers and investors, financial institutions, national opinion makers, policy makers and wind energy company, local administrators, etc.). The survey results shown a complex picture, where the uncertainties in incentive schemes, the technical unpreparedness of local administrators to manage the energy development, the media overexposure, give to actors fuzzy role (Cavicchioli, 2012).

#### b. Utilities / grid owners

Some grid problems (congestion) versus wind energy development are evident in windy areas, e.g. Fortore (the so-called "wind triangle", between Campania and Apulia), previously not interested by electric production and relevant consumes. To cope with these problems the Italian TSO (Terna) updates yearly the National Transmission Network Development Plan, with the goal to ameliorate the dispatching capabilities of the transmission network in relation to the steady growth of Non-programmable RES. Terna is however encountering many problems to the implementation of its plan mostly due to local opposition. On the February 2014 a Memorandum was signed between Terna and ANCI, the National Association of Italian Municipalities, with the objective to achieve a better sharing in the localization of electrical lines on the Italian territory through greater harmonization among Terna development interventions and the spatial planning of municipalities and Regions.

#### c. Developers / investors

In Italy wind energy plant developers are mainly the larger companies operating on the national or international market (Cavicchioli, 2012). Most of the big companies and major investors have their head quarter in the biggest towns (Rome and Milano), but a great number of new companies have

arisen in windy regions (south Italy and Islands). Local developers are more often very small enterprises that prepare permission requests and sell the permission to others.

In the last years a large amount of plants have been acquired by the main companies, so that now the "wind energy property" results concentrated in the hands of a relative small number of owners.

In recent times, new categories of investors have approached wind power and other renewables: small and medium investors looking for alternative sectors else than the traditional investment in real estate, and large pension funds, insurance and national and international institutions.

Investors found very favorable opportunities in wind power in the first decade of its development. Despite the lower economic advantages following the new RES-supporting scheme there are still a lot of projects proposals waiting to be processed by the regional/provincial administrations. As the licensing rate for wind power plants slows down, developers and investors must enhance the quality of their proposals in order to meet the requirements of local governments even before the beginning of the EIA procedure.

#### **d. Financial institutions**

A wind industry turbine costs on average 1 million and 800 thousand Euros per installed MW. A medium-sized industrial wind farm of 10 MW will cost between 17 and 20 million Euros.

Generally, those who want to create an industrial wind farm, use bank financing, or project leasing, or project financing as financial instruments. Italian and foreign banks have so far financed projects on a no-recourse loans for a total of approximately 6.8 billion Euros in the wind sector. Financial institutions (banks, financial, international lending institutions, investment funds) enter into participation with those who carry out the project, putting part of the financial resources, typically 75-80 % of the total risk capital, then retrieving them over the course of 15-20 years in which the plant is expected to generate income. The financial institutions come into play when the wind farm project is in the final stage, i.e. when the single authorization has been issued and published.

In Italy the two leader financial actors in the field of renewable energy are Intesa San Paolo<sup>(7)</sup> and Unicredit Group<sup>(8)</sup>, but other important financial realities are also UBI<sup>(9)</sup> and Montepaschi<sup>(10)</sup>. In the case of projects requiring an investment of over 50 million euros, generally it will constitute the pool of IntesaSanPaolo Unicredit bank (Cavicchioli, 2012).

In addition, in support of the renewable energy sector, intervenes the European Investment Bank (BEI), which provides banks with the credit facilities. The major problems the banks encounter in their activities of financing wind energy projects are related mainly to the uncertainty and slowness of the regulatory framework.

#### **e. National opinion makers, policy makers and general opinion**

In Italy the main environmental NGOs have expressed different positions in relation to wind energy. Some of them support renewables (Legambiente<sup>(11)</sup>, WWF, Greenpeace, Kyoto Club), looking at the goal of a carbon free future. Some others, as LIPU<sup>(12)</sup> (the Italian League for bird protection) and ItaliaNostra<sup>(13)</sup> worry about impacts on birds migration and landscape, putting in foreground the conservation of the historical, artistic and natural national heritage. Opposition of any strength to wind energy has been expressed also by some politicians, sometimes supporting national and local ONG against the progress of single projects.

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<sup>7</sup> <http://www.intesasanpaolo.com/>

<sup>8</sup> <https://www.unicredit.it/>

<sup>9</sup> <https://www.ubibanca.com/>

<sup>10</sup> <https://www.mps.it/>

<sup>11</sup> [www.legambiente.it/](http://www.legambiente.it/)

<sup>12</sup> [www.lipu.it/](http://www.lipu.it/)

<sup>13</sup> [www.italianostra.org/](http://www.italianostra.org/)

A media survey, based on the analysis of newspapers, magazines, webzines and agencies, has been conducted every year in Italy from 2001 by NIMBY FORUM<sup>(14)</sup>, to monitor the number of territorial disputes and make an inventory of the opposition.

#### **f. Educators**

Several technical high school universities teach electrical engineering and energy technology.

Till the last decades, wind power has had fairly marginal role in the courses, but in recent years, particularly in area close to high wind potential, the technical aspect of renewables and wind energy have become relevant. Many companies offer stages and training periods to students for their introduction in the companies.

#### **g. National, regional and local administration**

According to Italian legislation, the Italian Government has the duty to prepare the Energy National Plan, in line with EU objectives in the field of energy, environment and global warming protection. In turn the Regions have the task to properly regulate the RES development in order to cope with their own goals. As already explained in previous chapters, wind energy has been greatly supported by national and regional governments in the first development period because it was considered a good means to contribute to the 2020 EU RES objectives especially for the southern Italian regions. At the moment both the national and regional governments have started to put a curb to the wind energy development rate since the actual installed power has reached a critical density in many sites either from a technical (transmission and distribution of electricity) or environmental point of view.

On their part, many municipalities have steadily supported renewable energy, encouraging the development of wind energy in their administrated territories. Industrial wind power (large-scale plants) are settled in 260 different municipalities, while 123 municipalities host smaller wind systems.

#### **h. Local population**

In Italy survey on local scale (on single projector area) are not frequently used.

In 2010 ANEV, the main association of companies operating in the wind energy sector in Italy, commissioned a national survey about wind energy (ANEV, 2010). The results showed that in Italy wind energy has a very good profile picture: the 80% of Italians think it is respectful of the environment, it represents an economic opportunity both on international (77%) and local (70%) spatial scale and it is a business not subject to economic and political crises (75%). With regard to personal behaviors and attitudes: the 82% of Italian people would like to have more information on opportunities related to wind energy use and the 83% were satisfied if their supplier would sell more energy coming from wind plants. Moreover, the result of the survey showed that only 52% of Italians knew that the incentives are granted only for the produced energy and not for the installed capacity.

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<sup>14</sup> <http://www.nimbyforum.it/>

## Variables Influencing Social Acceptance

### 4. Well-being

#### a. Standard of Living, Quality of Live and Health

Even if it is a relevant item, in Italy no national studies have been recently performed about relations among wind energy power plants, standard of living and indicators of life quality. Italian authors usually refers to international studies. Two major items are used to let an energy project be perceived by the local community as a factor that can increase the local standard of living: to relate the production of a wind farm with the local demand, perceived as an “energy independence”, a sort of “greening” of the local energy production, particularly if related to high quality local production company (food industry, DOP DOC, DOCG production<sup>15</sup>).

Several surveys and practical experiences denounce noise emissions as one annoyance source. Few specific studies were performed in Italy about wind farms as a source of disturbance (Curcuruto et al., 2010). To protect local residents the maximum noise level of wind turbines is fixed by the local authorities by emission protection law and a noise zoning. However, humans perceive noise level and noise quality differently. So far, it remains an open question how life quality of neighbors living in the vicinity of wind turbines is influenced by noise quality.

#### b. Dynamic of regional identity, place attachment

This is a special item of landscape perception. It is complex to monitor the perception of the home landscape and the everyday environment. Spatial and socio-cultural place characteristics are part of strongly emotional shaped experience of the known environment. Natural landmarks (old trees, the mountain profile shape, the shore line), or historical building, ruins, characterize a place. Those elements are perceived and evaluated subjectively by individuals. A new wind turbine, because of its relevant dimension and the fact it is usually sited in rural environment, represents a relevant change of this perceived environment. If wind power plants are constructed at an emotionally relevant place, this could influence the evaluation of the turbine. Italian population has generally a strong regional identity. However cultural and natural heritage is usually not well preserved and enhanced, any modification in its asset is not accepted, especially if the driver is not local. Some experiences in Tuscany, as Santa Luce (Morini, 2014), account that if the project properly involves the population, the population itself can be helped to give a proper meaning to the change and accepts it.

#### c. Valuation of ecosystems

Although landscape effects are generally the main source of concern regarding the installation of new wind plants, experience shows that attention of the proponent to the protection of the environment and wildlife is well evaluated by the population and of crucial importance for the social acceptance of wind facilities. These items have in fact a great emotional value to many people.

It worth to mention the national observatory on wind energy impact on bird life<sup>(16)</sup>, supported by the Minister of the Environment, ANEV<sup>(17)</sup> (the biggest Italian wind energy producers association), and Legambiente, (one of the most relevant environmental ONG in Italy).

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<sup>15</sup> , DOP (*Denominazione di Origine Protetta*) DOC (*Denominazione di Origine Controllata*), DOCG (*Denominazione di Origine Controllata e Garantita*) are [quality assurance](#) label for [Italian food](#) products, especially [wines](#) and various [cheeses](#)). It is modelled after the [French AOC](#). It was instituted in 1963 and overhauled in 1992 for compliance with the equivalent [EU law](#) on [Protected Designation of Origin](#), which came into effect that year.

<sup>16</sup> Protocollo di Monitoraggio dell'Osservatorio Nazionale su Eolico e Fauna – ANEV – Legambiente – ISPRA - 2011

<sup>17</sup> [www.anev.org/](http://www.anev.org/)

## 5. Distributional justice

### a. Distributional justice

Distributional justice concerns the nature of a socially fair allocation of goods in a society. The concept includes the available quantities of goods, the process by which goods are to be distributed, and the resulting allocation of the goods to the members of the society. The perceived distributional justice can have a great influence on wind turbines acceptance. Perceived costs (like changes to the landscape, decreasing property values or regional tourism) and benefits (positive image, feed-in tariff, regional value creation) have to be balanced. If there is no compensation for perceived costs and at the same time the distribution of the advantage is perceived as unfair, conflicts may arise and could result in strong opposition.

Some producer companies report positive experiences as for the management of maintenance operations. While some companies entrust these activities to external supplier (outsourcing), others prefer to maintain them inside the producer company (in house); this gives more visibility to the producer brand in the affected area and improve the perception that local people have of the producer's commitment in the region.

Some interesting results can be found in Mura & Strazzera, 2014, reporting of a wide research carried out in Sardinia with the aim to identify factors influencing the social acceptance of wind plants in the region. The most common idea that emerged from the focus groups, main tool of the research, was a certain distrust towards the ability or will of the administrators to protect the collectivity and ensure an acceptable level of distributional justice.

In Italy it has been common habit granting high cash payments or royalties, other values or services to land owners or communities (namely the involved municipalities), to ensure local support to the project, especially in the early stage of wind development.

New rules (the aforesaid 2010 Guidelines for RES-projects) forbid now the recourse to cash payment or royalties as a compensation for the exploitation of the wind, and provide that compensation measures are allowed only if the requirements linked to the implementation of the national energy strategy require high territorial concentrations of activities or the installation of high impact facilities and infrastructure.

No alternative models or procedures have been contextually suggested to maintain a fair perception of the costs and benefits of the project.

Given their recent adoption, the effect of the new rules on the perceived fairness of new projects cannot be yet evaluated.

### b. Ownership models

Approaches for the broader financial involvement of local and regional actors in the construction and operation of renewable power plants are one way to create acceptance. In this context, local ownership models like community wind farms play an important role: by this means multiple regional interests (environmental, economic and landscape) can be better recognized and integrated.

The approaches of a broad financial involvement of local and regional actors is not widely applied and supported in Italy. Some pioneering project (cfr Cavicchioli, 2012) applied this model in Italy, and proved that community ownership leads to higher social acceptance of wind power installations. These experience also evidenced the importance of clear and consistent choices for a stable financial support system that guarantees the process and prevent risks.

In the past 15 years important experiences have been carried out from which to take inspiration for new "socially oriented project". These good practices were carried out by some local administrators that have understood the importance of a local leadership for connecting energy exploitation with developing opportunities. The initiative were more successful where the local authorities (municipalities, mountain communities and provinces) played a role as a co-proponent. We can list some municipalities that have implemented such approach (Cavicchioli et al., 2011): Santa Luce (PI), Tocco da Causarla (PE), Scansano (GR), Peglio (PU), Mammola (RC).

### c. Welfare



A great quota of the existing Italian wind farms pays royalties to local municipalities. This allow local administrator to guarantee their municipalities with higher standards than neighbors ones. The relevance of the incoming tax is sometimes the 80% of the municipal balance sheet (Cavicchioli; A. Scassellati, 2011), even if the tax is about 2-3% of the value of the produced energy. This is also related to the fact that the windy territories in Italy are more often in remote areas, with small municipalities affected by depopulation.

Since the issuing of the Ministerial Decree of September 9, 2010 royalties payment for wind energy exploitation has been banned and compensation measures must be explicitly linked to the affected components.

## 6. Procedural Design

### a. Procedural design

No specific studies about the relevance of the procedural design have been conducted in Italy.

Existing regional or provincial procedure for the project implementation do not differ substantially from each other and as regards the public involvement they all follow the minimum requirement provided by the national legislation for the Environmental Impact Assessment procedure.

Public evidence of the project proposal must be given at a very beginning of the process, through the publication on one or more local newspapers, the regional web site, the regional official journal. Observations can be sent in written form within a limited period after the publication (public consultation phase).

Within the Italian legislation, however the term “public” has a very wide meaning, including either expert or non-expert, organized or non-organized subjects, individuals, citizen groups or trade associations, and this organization of the public consultation is more intended for organized and expert stakeholders rather than for common citizens.

Some Regions (Tuscany and Emilia Romagna) have implemented participation procedures<sup>18</sup> but they have not been applied to wind energy, yet.

A relevant experience is that of Fortore Energia SpA. This company, before presenting its own project, signed with two Mountain Communities an agreement in order to share the possible development areas. They carried out a feasibility study, co-funded by the Ministry of Environment, focusing on the Apennines in southern Italy, which is the area where it is expected a further growth of wind plants. Within these territories, homogeneous basins, comprising some municipalities, have been identified starting from the wind distribution and the morphological characteristics. The feasibility study comprised five phases:

- Meetings with local actors for each homogeneous basin, involving administrators, businessmen, representatives of associations and citizens.
- Evaluation of the potential of renewable energy sources
- Promotion of business initiatives with the development of specific business plan
- identification of the most suitable financial instruments to support not only direct investment (plants from renewable energy sources), but also industries and services companies in the sectors coherent with territory vocation (e.g. agriculture , tourism).
- Defining a shared roadmap for the authorization processes, involving local authorities and private individuals, as well as other local organizations like Mountain Communities.

### b. Communication strategies, public consultation

Many Italian experiences prove that communication strategies strongly influence the public acceptance of a wind plant (Zanchini, 2014, Cavicchioli & Scassellati, 2011).

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<sup>18</sup> Tuscany Regional laws n° 69/2007 and n° 46/2013 on « Public debate and the promotion of participation in the formulation of regional and local policies »; Emilia Romagna Regional laws n° 3/2010 on „Standards for the definition, reorganization and promotion of procedures for consultation and participation of population in the formulation of regional and local policies“



So far, in Italy there haven't been made major efforts to influence the social acceptance, even if the installation of new renewable plants will widely interact with natural or anthropic areas. It has to be noted that some regions (only 2 out of 20) and, centrally, the Ministry of the Environment have started to work on a law for the introduction, in the permitting process, of a scheme similar to the French *Debat Publique*.

### **c. Cultural relationship, local context**

In the Italian legislation, the main tool to protect landscape and the local most significant cultural sites is the the Landscape Plan. It is drawn up by the Region in conjunction with the Ministry of Heritage and Culture and it aims to protect, both as conservation and preservation, specific categories of goods such as territorial mountain areas, lakes, volcanoes, rivers, coastal areas, parks and reserves, forests and the like.

It is a strong instrument of control because all spatial planning acts must conform with it. The landscape plans, with reference to the area of interest, recognize the aspects and peculiar characters, as well as the landscape features, and demarcate their areas. For each area the landscape plans define specific requirements and forecasts directed towards the conservation and restoration of the landscape values, the redevelopment of the areas affected or degraded, the preservation of landscape features and the identification of lines of urban development and construction, consistent with the different values landscaped recognized and protected.

In reference to the hierarchical order of planning instruments, the landscape plan prevails over national and regional plans and programs and other acts of planning to territorial impact.

Its practical implementation resulted in heterogeneous outcomes. While in some area it proved a useful tool, in other it was not able to preserve effectively the landscape quality of the areas.

Many studies tried to focus on the technical assessment of visible interferences, i.e. the perception of wind turbines as foreign objects in a measurable landscape (Battistella et al. 2012).

Some studies (Battistella, 2010, Battistella et al., 2011) were performed in order to facilitate a visual prevision of the perceived change BEFORE the plant construction, and facilitate the governance on local energy resource exploitation. Many items were considered in order to identify and measure the local feelings on landscape: Cultural emergencies, permanencies (agricultural, natural, historical ones) on territories. They all integrate to create local identity as a unique landmark.

Wind energy is strongly perceived by the populations as a common good that belongs to the local community. This conflict between population's feeling and legislation is now generating intolerance against new plant settlement.

## 7. Implementation Strategies

Figures on installed capacity in Italy show that implementation strategies have been successful so far, for better or for worse.

However, with the decrease of the land available for wind energy exploitation, public concern about the impact of wind plants on the environment and landscape is going to reach a higher level of attention. Therefore wind developers and producers have to keep improving implementation tools, approaches and strategies in order to avoid the triggering of a process opposite to that had till now.

### a. Visual impacts, photomontage, Communication campaigns

National guidelines on the correct siting and design of wind plants gives suggestion based on the acknowledgment that a wind turbine may in no way be concealed and that the visual impact can only be mitigated by letting the wind plant become a part of a new landscape. In this sense solution like: adapting the turbine spatial distribution to the landscape main geometry; locating the turbines in groups instead than scattered all over the area; ensuring that turbines within the same visual area possess homogeneous aesthetic features are some of the solutions suggested to enhance the visual effects of wind farms.

More generally, in Italy many studies were performed on the visual impact of energy infrastructures (in particular grid and wind power plants). An example can be found in Battistella et al. (2012).

International architectural tender were supported by ENEL (the major electric producer, ) and TERNA (the Italian TSO), especially for high voltage grid, in order to find less impacting solutions and increase the public acceptability..

Results evidenced that the quality of the project strongly influences the perceived impact of the wind plant and also the changing of the “home-view” landscape.

It worth to mention the study conducted by some architects to combine technical requirement with aesthetic standards (Battistella, 2010). The base idea is that wind energy generation is an opportunity for the evolution of the landscape, as opposed to those who deny a priori any form of action.

No legislative scheme is provided in Italy on this theme

Visual impact studies and photomontage are instruments usually used by plant developers as a means to communicate with the local population and local administrators (Perini, 2014). Communication campaign are usually conducted by proponent, by their own or with the support of experts.

### b. Communication strategies, Social marketing

Communication strategies and social marketing are instruments usually used by plant proponents as instrument to communicate with the local population and local administrators. These actions are usually conducted by proponent, by their own or with the support of experts.

### c. Checklists, guidelines: conclusions from existing examples

Besides the issuing of the national Guidelines, a major effort has been made in the latest years by ANEV and Legambiente to develop and publicize good practice and voluntary protocols for the implementation of wind power plants.<sup>19</sup>

Good practices are also listed by GSE (the Italian national board for renewables) on the website<sup>20</sup>.

<sup>19</sup> ANEV, Legambiente, Greenpeace – “Protocol on the promotion of wind energy in Italy and its insertion into the landscape”

<sup>20</sup> [www.gse.it/](http://www.gse.it/)

## Summary and Conclusions

### 8. Conclusions

#### a. What we know already

In Italy the wind energy exploitation was conducted as a market driven scheme. Independently by the level of social acceptance, past policy has resulted in record-breaking growth of the installed capacity which has mainly involved the less developed areas of the country, bringing in some cases unexpected welfare to the hosting municipalities. Although wind energy still enjoys a quite high level of support from the wide public as well as by the national policy, Regions are now trying to curb a development sometimes perceived as a true gold Rush. Among other measures enacted to enhance the governance of wind energy development, the new legislation no longer recognize wind energy as a social good, and royalties for its exploitation are forbidden for new plants. This scheme does not help social acceptance itself and is now generating more opposition against new plants settlement. On the other hand neither communication nor public engagement have been till now a strength of the Italian legislation and authorization processes.

#### b. What needs to be done yet

With respect to social acceptance, areas where further research is required are to be seen in relation to the development of the wind energy expected in the near future, namely the diffusion of small wind plants, the repowering or refurbishment of older wind plants, the development of off-shore projects.

On a local level, studies need to be conducted on the feeling of local populations which have been living for years near wind power facilities and which are likely to be involved by re-powering projects. Improving our understanding of what impacts these groups have experienced and what expectation they have will be critical to the development of siting best practices. A better understanding of the impacts from specific turbines or plants designs could arrive from a thoroughly analysis of data deriving from the application of the monitoring protocols which have been lately required to the plants owners upon releasing of the operating permit.

Studies on the perception of general public toward large off-shore facilities should help facing in the best way the possible future development of this sector (however up to now the main opposition seems to arrive from some part of the central government).

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