



For years, the Province of Siena has enabled the project **2015 Siena Carbon Free** with the goal to be the first wide area with zero emissions by 2015.

The project covers the annual calculation and the ISO 14064/1 certification of the CO₂ release and resorption balance (made according to the IPCC approach by the University of Siena). It also concerns a whole series of actions, such as: programming with the new Provincial Energy Plan Staff, the provision of incentives for energy efficiency and energy supplying from renewable sources, the design of RES systems for the structures and information on the subject.

Alongside these initiatives, an important ordinary activity is pursued with the controls on the heating systems and the fire prevention assistance.

Finally, some projects designed for the Green Economy have been developed. Like the science and technology Pole for renewable energy and the brand 2015 Siena Carbon Free which the businesses in the area will join to feed the range of initiatives essential to achieve the ambitious goal of a zero emissions land.

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Greenhouse Gas Balance

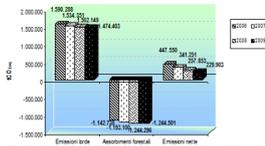
Since 2007 it is active the calculation of greenhouse gases Balance in collaboration with the University of Siena - Department of Chemistry - and the Italian Naval Register s.p.a- (now RINA Services s.p.a.).

The calculation is performed in accordance with the *Guidelines for national greenhouse gas inventories* established by the IPCC (Intergovernmental Panel on Climate Change).

The examined areas are::

Emissioni	Energia	Energia elettrica
		Prodotti petroliferi
		Termovalorizzazione
	Industria	Discarica
		Compostatore
		Acque reflue
	Rifiuti	Uso del suolo
		agricoltura
		allevamento
Assorbimento	AFOLU	Assorbimento forestale

The assessment can be taken into consideration because a strong electronics industry is present in the area, which is a source of energy and emissions.



2006, 2007, 2008, 2009, 2010. The ISO 14064/1 certification issued by RINA Services SpA for the **The energy efficiency of buildings**

The Province of Siena performed a series of **energy audits** on their real estate (Mk. 400,000) making a series of analyses through APEA LTD:

- Monitoring data on consumption of energy and water
- Analysis on the efficiency of energy conversion and on the use of energy resources
- Planning to implement the use of energy efficiency
- Best conditions for supplies
- Consumption markers to compare
- Specific operations: regulation of electrical systems, improving the energy efficiency of the heating systems, supply from renewable sources to upgrade the buildings' energy efficiency

Feasibility studies were performed through APEA LTD for the installation of **photovoltaic panels in some school buildings**

It was then opened the call for energy audits to enhance the energy efficiency of **municipal buildings**

Funds were provided to support the deployment of diagnostic and design procedures for the **energy retraining**

of public buildings in the municipalities around Siena. The funds amount to € 200,000 and a communal participation of 10% was provided for a maximum of € 20,000 per municipality. Projects were financed for 220,000.

Funds have been allocated for **small size photovoltaic systems** in order to install panels:

- Allocated funds € 2,200,000
- Investment volume € 21.85 million
- kWp installed 4,340
- MWh / year produced 5423
- Questions no. 692
- CO2 reduction = 2,982 t / year.

A survey of the energy potential was carried out on the sites owned by the municipality of the province (cover of buildings, disused quarries and dump sites, properties ...) for the purpose of energy recovery, installation of equipment for the production of FER renewable energy, production and use of biodiesel and / or other biomass fuels produced in the province. The survey performed by A.P.E.A. LTD brought to the cognitive framework:

CENSIMENTO POTENZIALITA' ENERGETICHE SITI PUBBLICI

Zone di intervento	Potenza installabile (kWp)
Aree/Terreni	2336
Scuole	1333
Impianti Sportivi	1548
Altro	1441
Totale Potenza in kWp	6658

Control Actions

In order to achieve the ambitious target to zero the CO2 emissions by 2015 it is essential to control those events on the territory that can lead to environmental pollution such as heating systems and forest fires.

The controls on heating systems

The Province of Siena has signed a Memorandum of Understanding together with the City of Siena, the Chamber of Commerce of Siena, associations of craftsmen and consumer organizations to make more effective and efficient the audits to perform on heating systems. It is crucial to facilitate citizens in the fulfillment of legal obligations, to give the operators and owners of the plants a set of predetermined rules and guarantees, then conforming the practices concerning the controls on the heating systems lower than 35 KWh for which you can use a self-certification. This Protocol provides the same procedures for all the thermal plants located in the municipalities of the province and therefore also for the municipality of Siena (this municipality population counts more than 40,000 inhabitants and it is responsible for controls on heating systems located in its territory). The Protocol also expects the commitment of the Province to enable an information and awareness campaign called clean and safe boilers with a dedicated website:

www.caldaiesicure.provincia.siena.it

All the technical and administrative activity has been delegated to the Energy, Environment and Sustainable Development State Agency,. This is a contact receiving the practices of self-certification for the systems of less than 35 kWh, the tests on the self-certified plants, the search for evasion and the controls on plants greater than or equal to 35 kWh.

The wood fire fighting activities

The Province of Siena regularly carries out the fire fighting activity in collaboration with the State Forestry Corps and voluntary associations.

The Provincial Operations Centre set to coordinate the forest fire fighting throughout the province has the task of coordinating the activities of prevention, management and shutdown, during the high risk period, from June 15 to September 15, as required by the Wood Fire Fighting Operational Plan in the Province of Siena.

This important activity is strictly necessary for the reduction of CO2 emissions into the atmosphere since the forest surface actually absorbs these emissions.

The information



Energy efficiency and renewable energy are the key to reducing CO2 emissions and the cost



Green Economy



To orientate an economy set to save natural resources and reduce CO2 emissions, the Province of Siena signed the Memorandum of Understanding together with the Tuscany Region, the City of Siena, MPS Bank, MPS Foundation, University of Siena, Chamber of Commerce., the Siena development Financial, SICI (Tuscany innovation Fund). The agreement aims at the creation of a science and technology Pole for renewable energy in order to trigger actions to promote and support the activities useful to the development of research activities and to the location and development of production activities defined as industry of the renewable sources and energy efficiency. The companies adhesions to the notice of interest have been collected.

Awards

Liveable Communities Award

The Province of Siena took part in the International Liveable Communities Awards event, sponsored by the United Nations Program for Environment (UNEP), held in Seoul October 26 to 31, 2012, to compete to a range of awards for sustainable communities.

With the 2015 *Siena Carbon Free* project, a plan to zero the CO2 emissions in 2015, the Province of Siena was admitted to all the awards categories:

Whole city

, for the global project concerning landscape, art, participation, environment, lifestyle, planning;

Project

for the innovativeness of the project itself and

Bursary

, a cash prize of £ 10,000.

The delegation from Siena was part of the 77 delegations, for a total of 450 delegates from 26 countries around the world, selected out of 338 submitted projects, which met in Seoul in South Korea, in the district of Songpa, for the important international competition, born in 1997 as a window to show projects and programs in its capacity as territory of sustainable communities.

The Province of Siena won two major awards: a Silver Award for the Project category and a Bronze Award for Whole City.