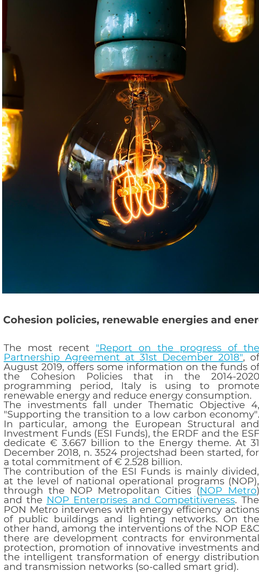
Data Card - Renewable energy



EUSEW - the European Week dedicated to renewable energies is an initiative of the European Commission scheduled between 22 and 26 June. This year, also following the corona virus outbreak, the chosen theme is "Beyond the crisis: clean energy for green recovery and growth" dealing with the issue of overcoming the crisis, and how clean energy can be a tool for recovery and sustainable growth. The European Week is the reason for this Data Card, dedicated to OpenCoesione projects that promote renewable energy and energy efficiency.
In Italy, in January 2020, was published the Integrated National Plan for Energy and Climate (PNIEC), prepared by the Ministries of Economic Development, the Environment and Infrastructure and Transport. The Plan encloses the novelties contained in the Climate Decree Law as well as those on investments for the Green New Deal envisaged in the 2020 Budget Law. As regards the gross final consumption of energy from renewable sources, Italy intends to pursue a coverage objective, in 2030, by 30%, "outlining a path of sustainable growth of renewable resources with their full integration into the system" explains the PNIEC. "In particular, the target for 2030 provides for a gross final energy consumption of 111 Mtoe (Million Tons of Oil Equivalent), of which about 33 Mtoe from renewable resources".

Cohesion policies, renewable energies and energy efficiency

The most recent "Report on the progress of the Partnership Agreement at 31st December 2018", of August 2019, offers some information on the funds of the Cohesion Policies that in the 2014-2020 programming period, Italy is using to promote renewable energy and reduce energy consumption.
The investments fall under Thematic Objective 4, "Supporting the transition to a low carbon economy". In particular, among the European Structural and Investment Funds (ESI Funds) the ERDF and the ESF dedicate € 3.667 billion to the Energy theme. At 31 December 2018, n. 3524 projectshad been started, for a total commitment of € 2.528 billion.
The contribution of the ESI Funds is mainly divided, at the level of national operational programs (NOP), through the NOP Metropolitan Cities (NOP Metro) and the NOP Enterprises and Competitiveness. The PON Metro intervenes with energy efficiency actions of public buildings and lighting networks. On the other hand, among the interventions of the NOP E&C there are development contracts for environmental protection, promotion of innovative investments and the intelligent transformation of energy distribution and transmission networks (so-called smart grid).

Also contributing to the achievement of European objectives is the NOP School, for the energy efficiency of school buildings, and the NOP Infrastructures and networks with projects for the construction of intelligent transport systems and all Regional Operational Programmes.
The Report also highlights how Italy has already reached the goal of reducing greenhouse gas emissions in sectors not subject to the Emission Trading Scheme set for 2020 (target in 2020 equal to 294.41 MtCO2eq / year) with a value still decreasing in 2017, equal to 268.94 MtCO2eq / year. That the share of renewable energy equal to 18.3% in 2017 confirms the achievement of the EU2020 target, further improving compared to 2015. And, finally, that the levels of primary and final energy consumption, in 2017 respectively of 148.95 and 115.19 Mtpe per year, continue to meet the EU2020 objectives (158 and 124 Mtpe / year respectively).

The European Environment Agency

Agenzia europea dell'ambiente

The latest report from the European Environment Agency (EEA) is useful to "focus" on the importance of investments that reduce use of fossil fuels (coal, natural gas) in the process of the production of electricity.
According to EEA estimates, in fact, between 2005 and 2018 the percentage of energy from renewable sources in EU countries doubled, reaching 18 percent of the total energy used."If the percentage of energy produced from renewable funds in the countries of the European Union had not increased since 2005, it would have been necessary to burn an important quantity of fossil fuels to cover energy needs. In this case, the greenhouse gas emissions of the 'European Union in 2018 would have been 11% higher, thus compromising the achievement of European targets for the mitigation of the effects of climate change".

Climate change, urban regeneration and construction

In 2018, the total emissions of greenhouse gases measured in Europe was 25.2% lower than the 1990 level. In Italy buildings (from residential to service buildings and to the public sector dedicated buildings) measure about one fifth of climate-altering emissions (ISPRA, 2020): a challenge is to adapt the lifestyle, redesigning the urban environment, both at the neighbourhood scale than at the building scale. Urban regeneration interventions and the ability to affect existing buildings to reduce excess energy consumption and increase environmental sustainability and the resilience of buildings will become increasingly important in the coming years. Equally important is having tools to control and measure the quality of interventions to contribute to the development of cities that offer opportunities for all, with access to basic services, energy, housing and transport.

The "ITACA Protocol", in Italy

One of the tools for measuring the environmental performance of the buildings or of urban districts is represented by the ITACA Protocol, approved on January 15, 2004 by the Conference of Regions and Autonomous Provinces and subsequently adopted by numerous Regions and municipal administrations in various initiatives aimed at promoting and encouraging sustainable construction through: regional laws, building regulations, tenders, urban plans.

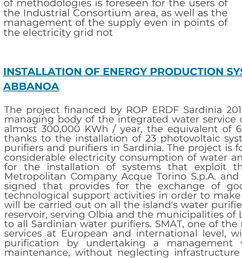
ISTITUTO PER L'INNOVAZIONE E TRASPARENZA DEGLI APPALTI E LA COMPATIBILITA' AMBIENTALE

IAs part of the ITACA Protocol, the new UNI PDR 13: 2019 was recently published, a reference practice for assessing the sustainability of buildings and is the result of the activity of a research group, made up of representatives of the regions, of research and universities and representatives of the labour, coordinated and organized by the Institute for Innovation and Transparency of Tenders and Environmental Compatibility ITACA. By the means of criteria and measurable indicators, valid support is provided for public bodies, technical bodies and private enterprises in evaluating the sustainability of a territory, starting from the definition of reliable, measurable and verifiable performance objectives, supporting the decision-making processes of planning at territorial level.

6 Projects funded by cohesion policy

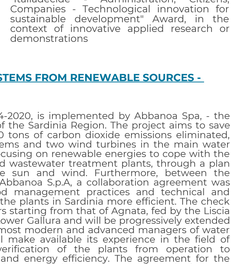
GENOVA NOP METRO 14-20 GE 2.1.1.a

The operation pursue the objective of improving the performance of the lighting service offered, containing energy consumption, reducing polluting emissions and the economic costs of the Public Administration. The interventions reported were 37 and involved 55 streets, streets and gardens present in the 9 city municipalities for n. 688 LEDs installed.
An example of energy consumption reduction and CO2 reduction is represented by the intervention in



Giardini Tito Rosina

n.36 mercury vapor lamps have been replaced with LED technology.
Annual energy consumption is reduced by => - 16,054.93 kWh, which represents a reduction of **70.80%** in terms of consumption and => **8,027 kg of CO2 avoided per year**



Via Brignole de Ferrari

n.19 mercury vapor lamps were replaced with LEDs.
Annual energy consumption is reduced by => - 16,999.47 kWh, which represents a reduction of **71%** in terms of consumption and => **8,500 kg of CO2 avoided per year**

Other public lighting interventions were carried out in Piazza Piccapietra, Piazza Verdi, Piazza Rossetti, Via Cecchi and Boccadasse

SOLAR THERMODYNAMIC - PUBLIC UTILITY SERVICES - OTTANA

The project financed by ROP ERDF Sardinia 2014-2020 (Axis IV Sustainable energy and quality of life, Act. 4.3.1) of which Ente Acque della Sardegna (ENAS) is the implementing body, foreseen the installation of a thermodynamic solar system and a photovoltaic system in the area of the Ottana Industrial Consortium with the aim of satisfying at least 50% of the electricity needs of the regional multisectoral water system with alternative energy.
The solar system is unique in its kind for its size, power levels and for the integration of technologies and is an example of worldwide excellence. The project for the integrated production of energy, both electrical and thermal, from solar sources intends to support the local enterprises system by supporting an adequate level of competitiveness on the reference markets.
By enhancing the co-presence of thermodynamic solar and concentration photovoltaic technologies integrated with thermal and electrochemical storage systems, at the Ottana pilot plant the testing of methodologies is foreseen for the users of the Industrial Consortium area, as well as the management of the supply even in points of the electricity grid not directly connected to the solar system and, for the surrounding area, the use of thermal energy.
The initiative is carried out in partnership with the University of Cagliari and with Sardinia Research, and aims to develop and implement new methodologies for the management and control of the production of energy from solar sources to satisfy local requests for electricity and heat. The two plants contribute, together with other plants based on renewable energy (photovoltaic and hydroelectric) to meet the electricity needs of the Regional Multisectoral Water System with alternative energy. This allows to cut public water management costs. In addition, the initiative allows the testing of systems for the production of energy from renewable sources that are innovative from a technological point of view and to reduce the costs of services provided also from an energy point of view. The Thermodynamic Solar Project of Ottana received in 2018 a special mention among prestigious "Italiadecide - Administration, Citizens, Companies - Technological innovation for sustainable development" Award, in the context of innovative applied research or demonstrations

INSTALLATION OF ENERGY PRODUCTION SYSTEMS FROM RENEWABLE SOURCES - ABBANOA

The project financed by ROP ERDF Sardinia 2014-2020, is implemented by Abbanoa Spa, - the managing body of the integrated water service of the Sardinia Region. The project aims to save almost 300,000 KWh / year, the equivalent of 60 tons of carbon dioxide emissions eliminated, thanks to the installation of 23 photovoltaic systems and two wind turbines in the main water purifiers and purifiers in Sardinia. The project is focusing on renewable energies to cope with the considerable electricity consumption of water and wastewater treatment plants, through a plan for the installation of systems that exploit the sun and wind. Furthermore, between the Metropolitan Company Acque Torino S.p.A. and Abbanoa S.p.A, a collaboration agreement was signed that provides for the exchange of good management practices and technical and technological support activities in order to make the plants in Sardinia more efficient. The check will be carried out on all the island's water purifiers starting from that of Agnata, fed by the Liscia reservoir, serving Olbia and the municipalities of Lower Gallura and will be progressively extended to all Sardinian water purifiers. SMAT, one of the most modern and advanced managers of water services at European and international level, will make available its experience in the field of purification by undertaking a management verification of the plants from operation to maintenance, without neglecting infrastructure and energy efficiency. The agreement for the optimization of Sardinian plants through technical-managerial changes stems from the increase in consumption together with the scarcity of water resources on the island: 85% of the drinking water distributed by Abbanoa in fact comes from artificial lakes and already high drinking water costs are increased by the dispersion level of the distribution network.

MUNICIPALITY OF PADULA - WORKS FOR RENEWABLE ENERGY PRODUCTION PLANTS AND ENERGY EFFICIENCY OF THE INSTITUTE INCLUDING KINDERGARTEN AND ELEMENTARY SCHOOL CAPITAL VIA DANTE ALIGHIERI

According to the School Book in Italy over 40 thousand school buildings have been registered. The owners of the buildings - the Municipalities for nursery, primary and secondary schools; Provinces and metropolitan cities for high schools - provide for the supplies and ordinary and extraordinary maintenance of school buildings. There are very few buildings owned by the state or other bodies. At the request of the owner local authority - Municipality or Province - ordinary maintenance can be delegated directly to the school (ie to the Headmaster), guaranteeing the relative financial means. The project funded by ROP ERDF Campania 2014-2020 sees the Municipality of Padula as the beneficiary of the intervention regarding the energy efficiency of the Cardogna school complex. On 7th October 2016 the official inauguration of the 2016/2017 school year and of the Capoluogo elementary school was made in Via Dante Alighieri in Padula, completely renovated after the energy efficiency and anti-seismic strengthening works that involved the institute - elementary school and maternal school.

DEMETRA PROJECT "REDUCTION OF CONSUMPTION AND ENERGY PRODUCTION FROM RENEWABLE SOURCES" P.O. TROPEA(VV)

Public buildings that are part of the hospital-health heritage of the Calabria region can directly contribute to the achievement of specific objective 4.1 "Reduction of energy consumption in public buildings and structures or for public, residential and non-residential use and integration of renewable sources", ensuring a significant reduction in energy consumption and production costs of the public service. Therefore, the "DEMETRA" P.O Tropea Project was admitted for funding on the ROP Calabria ERDF / ESF 2014-2020, with the executive decree no. 7091 of 04.07.2018 (Axis 4 "Energy efficiency and sustainable mobility" (TO 4 ERDF)).The project sees as beneficiary and implementing body the Provincial Health Authority of Vibo Valentia for the implementation of the energy requalification interventions for the Tropea Hospital, such as:

- improvement of the insulation of the building envelope through the construction of the thermal coat through the installation of panel elements on the building facades and roofs;
- replacement of external fixtures with high quality components;
- creation of a centralized monitoring system for the management and control of energy performance;
- replacement of current lamps with low consumption LED ones.

ROP MARCHE ERDF 2014/2020 AXIS 8 INTERVENTION 25.2 URBAN ITI MACERATA

The municipal administration of Macerata, following the "Macerata Che Sarà" campaign, aimed at stakeholders' consultation of needs and visions in the creation and construction of the Macerata of the future, has developed a shared and participatory vision of a collective desire to a city-landscape, inserted in the natural context of the territory in which it is located and with which it communicates. Accessible to all, where to live in safety, technology and innovation to facilitate human relationships.

in·nova macerata

INVESTIMENTI TERRITORIALI INTEGRATI URBANI (ITI)

An opportunity to start this path was offered by the regional call for ITI - Integrated Territorial Investments, 17 million European funds that the Marche Region invests in urban development, an important opportunity to which the city strongly aspires. One of the basic choices was the consideration of energy efficiency as an integral part of a path of green development and innovation. A path that, also in the next few years, will see innovation and energy as inseparable elements for the new economic and social balances: an inevitable path for a recovery of the green economy and to also drag the future post Covid19 recovery.

ITI IN-NOVA Macerata is a sustainable urban development strategy financed by the ITI (Integrated Territorial Investments) instrument foreseen in the ERDF and ESF programming of the Marche Region 2014-2020, with funding of € 6.600.000,00 (5.900.000,00 ERDF + 700.000,00 ESF).The project aims to adopt intelligent and low-consumption lighting solutions for the installation of high-tech network to be tested within the city of Macerata. The goal is to achieve energy savings of about 30% by using the best performing technological solutions and a different distribution of light points within the town. In addition to energy saving, the intervention aims to redefine a new night landscape for the city of Macerata and to enhance the main historical and cultural buildings. There were various types of intervention financed with 1 million euros from ROP ERDF Marche funds in the municipality of Macerata:

▶ relamping with replacement of energy-efficient lighting fixtures and installation of automatic systems for adjusting the points of light with the use of brightness sensors or remote energy management of the public lighting network;

▶ artistic lighting and high energy efficiency of the historic center and construction of high energy efficiency systems for the enhancement of the urban landscape

The 2019 season of the Macerata Lirica festival was opened with the slogan *#rossodesiderio* marked by the lighting of the Sferisterio with the highly efficient system that affects the main facade on Piazza Nazario Sauro and the round part of the hemicycle along via Diomede Pantaleoni. Further LED luminaires illuminate the entrance portico to the monument.