# DIADEME NEWS

## LIFE-DIADEME Project. Final Results

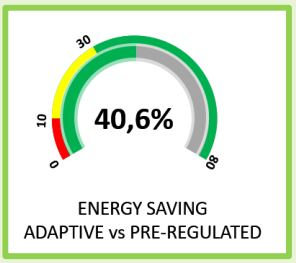
Performances of **Adaptive Lighting Systems in real time**, tested in the **Large Test Sites in Rome, Piacenza and Rimini** by the **LIFE-DIADEME** project, shown a reduction in energy consumption and emissions of extreme relevance, compared with **Pre-Programmed Systems**, currently in use in the most advanced public lighting systems, and even greater if compared with systems without such regulation, so-called **Full Light**.

At the beginning of the project, **the most ambitious expectations outlined reductions of about 30%**, but the first applications immediately showed some considerable difficulties arising, for example, from the choice of suitable materials for the detection of a large amount of data.

The experimentation of technologies and materials, in four years of work, led to incredible results, starting from the selection of the best components and solutions able to assure great performances, as necessary. The monitoring of road traffic, the detection of luminance, weather conditions and pollutants, together with the search for low-cost sensors fit to report correct data, the study of suitable solutions to apply the best technologies to the existing lamps and, finally, the choice of the best performing communication and data management systems, required enormous efforts from the staff involved in the realization of the project.

Within the 4 Large Test Sites in Rome, Piacenza and Rimini, **962 DIADEME Standard Devices** were installed for the **measurement of temperature, air pressure, luminance, environmental noise and traffic flows and for data communication through Radio Mesh and Conveyed Waves. 33 LTM**, on the other hand, take care of **traffic measurements, road luminance and weather conditions. 49 Air Quality Sensor**, built in with electrochemical low-cost sensors, finally, detect **$NO_2$, $O_3$, CO** and **NO** level, **humidity, temperature and atmospheric pressure**. For a final control, the collected data are compared and enhanced with reference to LTM computer vision.

After months of technical improvements in the field, of data gathering and appliances tests, results began to highlight the first success: **energy saving and $CO_2$ emissions reduction of the DIADEME Systems, compared with Pre-programmed installations, reach 40,6%. And compared with Full Light installations, they reach 57%**.




These reductions appear even more relevant because they have been obtained on recent plants with LED lamps.

DIADEME
SUSTAINABLE SMART LIGHTING SYSTEM

Cofinanced by
The European Commission
within LIFE Programme

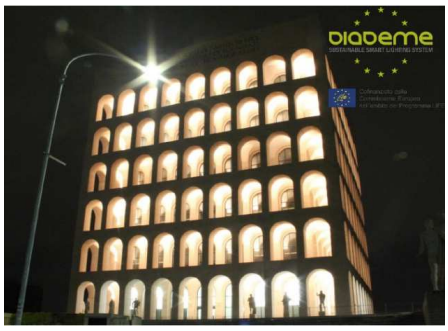
### Life DIADEME - 2020

*DIADEME project Final Results*

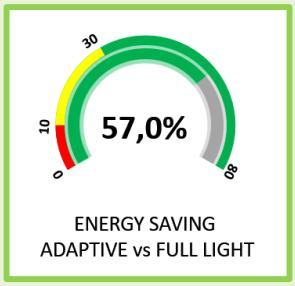
*DIADEME Final Conference Webinar*

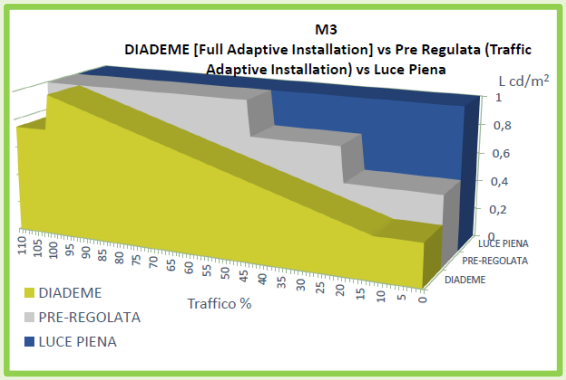
*AIDI Congress Webinar*

*DIADEME at the Fedarene Webinar*



Last but not least, **the high added value of the amount of data collected is to be noted**: traffic flows, air quality, environmental noise, weather conditions; useful data on one hand to promote **the reduction of the environmental impact in urban environment and the improvement of road safety**, on the other hand to be used for the creation of information systems (Dashboards) for public bodies to provide innovative services for citizens and companies, typical Smart Cities scenario.




Finally, it is perhaps useful to remember the particular praise given to LIFE-DIADEME by the Representative of the European Commission during the recent project Final Conference for the brilliant results achieved.

## DIADEME "Final Conference" Webinar

On **November 5, 2020**, it was held the **Final Conference** of the **LIFE-DIADEME** project.

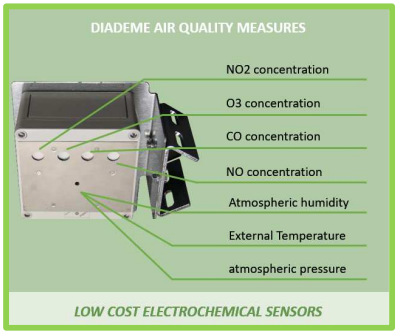
Initially planned during the **Ecomondo exhibition in Rimini**, where the project would have had its own space at the **Reverberi Enetec** Stand, **Lead Partner** of the project, the recent events related to the health crisis forced the organizers to present the final results in a **live streaming Webinar** with more than 80 participants.

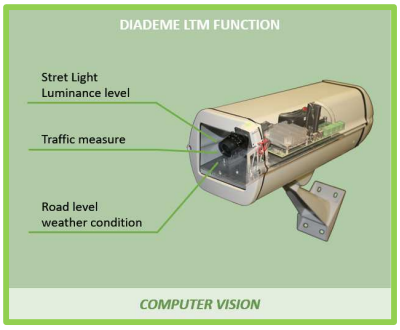
The Seminar opened with the greetings of **Gian Paolo Roscio, AIDI President, the Italian Lighting Association** that introduced the speakers and moderated the discussion, followed by the projection of the **official DIADEME Video**.

**Angelo Salsi**, **head of the LIFE and CIP Eco-innovation Unit of EASME, the European Commission Agency in charge of the management of the LIFE Programme**, praised the **DIADEME** project for its success and, above all, for the results far beyond the most optimistic expectations.

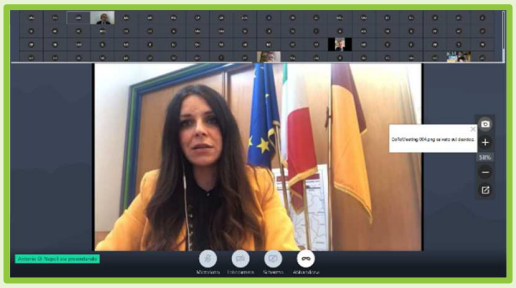
**Antonella Valitutti** of the **Ministry of the Environment** did not want to miss the appointment to underline how **DIADEME** is absolutely in line with the policies of the Ministry on energy efficiency and adaptation to climate change, thanks to the savings obtained and the reduction of the emitted pollutants into the atmosphere.

**LIFE-DIADEME in Rome EUR**


**LIFE-DIADEME Technical Features**



**Town Councillor for Infrastructures of the Municipality of Rome, Linda Meleo**, together with **Raffaele Gareri**, **Director of the Digital Transformation and Urban Economic Development Department**, pointed out the commitment of the municipal Administration in the realization of the Smart City through a series of solutions and projects of which **DIADEME** is certainly an application of absolute relevance. The data coming from the installed systems will be integrated into the **City Data Platform**, the backbone of a huge infrastructure able to offer innovative services and information to the City Users, citizens and companies.


**Marco Frascarolo**, from **Roma Tre University**, focused on illuminating engineering features and on in field measurements for the realization of the Pilot Project.


**Stefano Listrani**, from **ARPA Lazio**, praised the **DIADEME Air Quality control units** installed, for the more than satisfactory quality of the data gathering realized through low-cost electrochemical sensors.

**Eugenia Rossi di Schio, Town Councillor for Digital Innovation, Research, Development and Civic Services**, brought her greetings and thanked the **DIADEME Consortium** for the opportunity offered to the **Municipality of Rimini** to take part in the experimentation of Adaptive Lighting and briefly presented some interesting projects on waste management and green areas utilization, energy efficient buildings and electric mobility, recently developed on the town territory.


Following, the most awaited presentation was undoubtedly that one from **Andrea Mancinelli (Reverberi Enetec)**, **LIFE-DIADEME Project Manager**. To him the burden of retracing the project phases, from the initial research on materials to the Pilot of the first 100 installations in Rome EUR, up to the completion of over **1000 installations including 200 units in Piacenza and Rimini**. Concluding on the truly flattering results achieved in terms of energy savings and environmental impacts brilliantly reconciled with a certain and a very short return on investment.

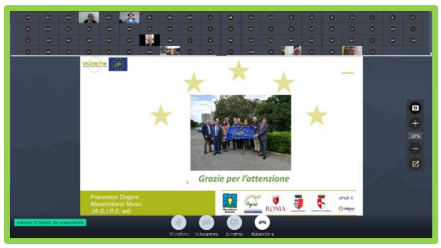
**Andrea Temporelli**, from **RSE Research on Energy System**, concluded the technical part by presenting the life cycle and environmental impact assessment (LCA and LCIA) of **DIADEME Systems**.

**Francesco Dugoni, Director of AGIRE, the Energy Agency of the Province of Mantova, DIADEME partner**, retraced the Communication and Dissemination activities carried out during the project life, considered so relevant by the EU Commission for the diffusion of actions and results of the project itself.

**DIADEME System** was studied and initially applied in the Municipality of Rome, but thanks to the collaboration between **Reverberi Enetec**, **project Lead Partner**, and local municipal Administrations, and thanks to a considerable economic effort, the model was also adopted in **Piacenza and Rimini**.

**Alberto Carone**, from **Citelum SA (EDF Group)**, explained the activities developed in the **Municipality of Piacenza**, the innovative technologies applied in the roads affected by the experimentation and the first results obtained. Just after, **Luca Marchi** from **Enel X Italia Srl (Enel Group)**, illustrated the areas of intervention in the **Municipality of Rimini**, together with advantages and savings of the Adaptive Lighting in this case.

For the conclusions of the **Final Conference**, representatives of other projects were invited, a **Networking** activity particularly relevant for the success of a project co-financed by European funds. **Patrizia Bellucci, ANAS Project Manager**, presented the **LIFE-Dynamap** project developed in Rome and Milan and focused on the acquisition and analysis of environmental noise through the utilization of low-cost sensors able to automatically update acoustic maps in real time. **Alessandro Drago, Councillor for Mobility and Community Projects of the IX Town Council of the Municipality of Rome**, presented **Elviten** project, a **Horizon 2020** on sustainable mobility with innovative applications for parking and electric charging services. Finally, **Katia Raffaelli, Project Manager** and officer at **Emilia Romagna Region**, presented **LIFE-PrepAIR**, a huge and important project that involved the Regions of the Po Valley to support them in the implementation of Air Quality Plans and measures, foreseen by specific agreements, to be applied on a territory including a large part of Northern Italy.

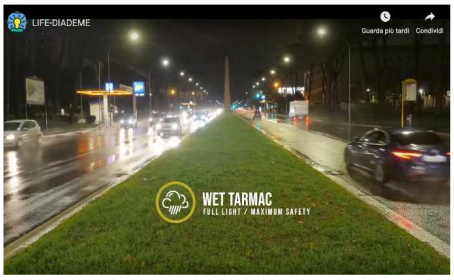

## LIFE-DIADEME Video

Towards the conclusion of the project and before the presentation of the final results, an explanatory three-minute **Video** was created for marketing and dissemination purpose, explaining effectively, but shortly, **DIADEME System** with suggestive images of the **Rome city Capital** where most of the Adaptive Lighting systems were realized and installed by the project. The Video can be seen on **DIADEME website** at [www.diademe.it](http://www.diademe.it). A second shorter version, used for the **Final Conference** advertising, is also visible on **DIADEME Facebook page** at [www.facebook.com/LIFEDIADEME](http://www.facebook.com/LIFEDIADEME).


## AIDI Congress Webinar

Even the **AIDI National Congress** – the **Italian Lighting Association** – was affected by the pandemic and was forced, for its XIX edition, after a first postponement in October, to renounce to the city of Naples for an **Online Webinar**, divided into six meetings held between November and December 2020.


The Congress, with the subtitle "**THE LIGHT BETWEEN CULTURE AND INNOVATION IN THE DIGITAL AGE**", addressed some issues related to new technologies that allow to design a more effective, flexible, dynamic, energy efficient and high-quality lighting.




Particularly interesting was the session dedicated to **urban lighting in the age of Smart Cities**, on November 17, during which **LIFE-DIADEME** was presented as an "**innovative IoT project of Adaptive Lighting in the Smart City**". The presentation, by **Raffaele Gareri**, **Director of the Digital Transformation Department of the Municipality of Rome**, focused on the most exquisitely technical and experimental features, with particular emphasis on the integration of environmental data collected by DIADEME systems into the **City Data Platform**, capable to offer innovative information and services to the City Users, citizens and companies.



A positive feedback to the innovations presented thanks to **LIFE-DIADEME** project was concretely reflected in the following discussion and in a good number of explanatory questions and answers.

## DIADEME at Fedarene "General Assembly"

The **Annual General Assembly** of **Fedarene**, the **European Association of Energy Agencies**, was held online in a Webinar format in this fateful 2020

with the authoritative presence of the **Commissioner for Energy of the European Union Kadri Simson**. **AGIRE Energy Agency** is member of Fedarene and was invited to present a project experience developed in Italy. On **November 26**, during the **Networking Café Estaminet**, organized to promote the knowledge of Best Practices and projects implemented by the members of the Association, moderated by **Secretary General Seamus Hoyne**, **Andrea Mancinelli, LIFE-DIADEME Project Manager**, from **Reverberi Enetec**, presented the project to a real interested and particularly skilled audience. Many requests for information during the discussion revealed similar projects in some European Countries (Portugal, Crete). But **LIFE-DIADEME** proved to be a very advanced experimentation in the field of **Adaptive and Distributed Public Lighting (DAI)**, just implemented in the Large Test Sites in Rome, Piacenza and Rimini.


## DIADEME at the Seminar on "Environmental Governance" by Ministry of Environment

The **Ministry of the Environment** is promoting the project "**Let's put ourselves in RIGA, Integrated Strengthening of the Environmental Governance**" to realize horizontal actions to increase the efficiency in the decision-making process related to public investment programs, promoting moreover the dissemination of tools and methodologies capable to improve the Multi-Level Governance for addressing choices and to facilitate the decision-making processes.

**Andrea Mancinelli (Reverberi Enetec), LIFE-DIADEME Project Manager**, was invited to present the results obtained with the experimentation of **DIADEME Adaptive Public Lighting System**, at a **Web Conference** on **15 December 2020**, with the aim to represent a successful example of fruitful collaboration between companies, local Authorities and Multiutilities and the European Commission. An excellent opportunity for a Networking activity with other National projects, under the auspices of the Ministry of the Environment.


## New Communication Tools

With the conclusion of the project and the need to advertise the results obtained, the latest Communication products were realized in Agreement with the European Commission: a new 8-page 15x30 **Brochure** (2,000

copies), **2 Roll-up Banners** 80x200 to be used during the events, **1 Poster** 70x100 and the **Layman's Report** in A4 format (500 copies). The latter represents a sort of storyboard with texts and images telling the whole project and its development, from the first research on materials to the realization of the Test Sites in Rome, Piacenza and Rimini.

All products are bilingual, Italian and English so that they can also be used in events or exhibitions abroad.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## Public Body Supporters:

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