

Gaia Lighting – Because tomorrow is important for us! – Viala Nova de Gaia, Portugal	
Keywords	Energy efficiency; Public Lighting; Flow Regulator; Energy Saving
Pictures	 
Objectives	To optimise energy consumption within the Public Lighting System in Vila Nova de Gaia.
Description	<p>A thorough study on the consumption of the Public Lighting System in Vila Nova de Gaia, revealed a great potential for energy saving in this sector. Based on the results of a prior pilot project, Energaia was able to test the use of flow regulation devices, one of the existing technologies for energy efficiency, and as a result, to estimate the potential of energy saving to be between 30% to 40%. The objective of Gaia Lighting project is to optimise the system by reducing energy consumption by 40% within the identified sample of 100 Public Lighting facilities.</p> <p>The Municipality owns around 1,200 Public Lighting facilities and the initial target of the project is to install 100 flow regulation devices preferably combined with other measures like the substitution of the existing light bulbs against more efficient equipments as a way to maximize the energy saving potential. Simultaneously to the installation, ENERGAIA, together with the flow regulation suppliers, will customize a common software solution to permanently monitor and manage the Public Lighting System. The goal is to guarantee energy efficiency by allowing the determination of variable lighting periods, to adequate lighting to the needs and minimum comfort standards at the most efficient way, and to register and document the results for managing purposes and decision making.</p> <p>In the medium term, the goal is to achieve an overall energy saving of 25% within Gaia Public Lighting System. The results of the present sample will fundament future investment decisions. The project will be developed in partnership with the national energy supplier to maximize the exchange of knowledge and promote the dissemination of best practices. The total investment amounts for €2,167,102 over a one year period which will be financed by the creation of a Local Investment Fund for the Rational Use of Energy and Sustainability, as a joint initiative from ENERGAIA and the Municipality of Vila Nova de Gaia.</p>
Results / Achievements	<p><i>Energy related results:</i> Gaia Lightning project promotes energy savings of 30% to 40% per year by facility; estimated to be around 7.7GWh per year which at current prices would equal €630.000 of annually savings.</p> <p><i>Environmental impact:</i> The estimated annual reduction of CO₂ is around 3,400 tonnes of CO₂ emissions.</p> <p><i>Demonstration and dissemination:</i> ENERGAIA is a Sustainable Energy Europe Campaign partner, this means that the project actions and results will be promoted across Europe due to the SEE newsletter and conferences.</p>
Friendly advice for replication	<p>Previous to the installation of the regulation flow devices, a detailed inspection to the Public Lighting must be conducted, as it will allow the identification of areas with higher saving potential. The inspection will also allow verifying the lighting network conditions, like: type of lamps, controls and luminaries used. These aspects will influence the saving potential and also the flow regulation device functioning itself.</p> <p>Furthermore, some changes to the public lighting network must be conducted, namely substitution of low efficiency luminaries for high efficiency ones, as this will allow to increase the energy savings and avoid future anomalies.</p>
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