



EduFootprint

School Low carbon footprint in Mediterranean cities

<https://edufootprint.interreg-med.eu>

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Welcome

Welcome to the third issue of the Newsletter of the EDUFOOTPRINT project, which is funded by the European Union under the Interreg Mediterranean Programme aiming at raising the capacity of owners and managers of public buildings for better management of energy in the MED Area.

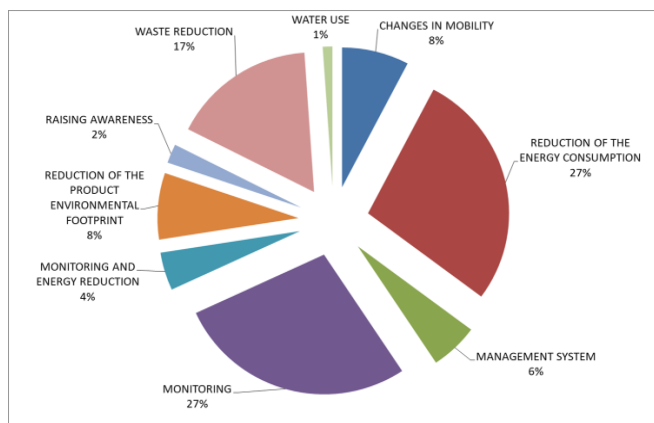
In this issue, you will learn about the most relevant activities and results of the project, as well as on relevant results of the EduFootprint calculator (CO2 emissions related to the Mediterranean schools) in some of the Mediterranean regions participating in the project. Additionally, you will find a description of some of the regions where the project pilot activities are taking place (Slovenia, Albania and Greece) and the next MED Programme event (MADE in MED).



Update on EDUFOOTPRINT project

Implementation of Energy Action Plans in EduFootprint schools

The energy Action Plan is a tool containing the actions connected to specific improvement objectives as well as the relative timetable, responsibility, resources and indicators. The EduFootprint partners have provided one Action Plan for each school related to different items. The distribution of the different topics is shown in the diagram below.

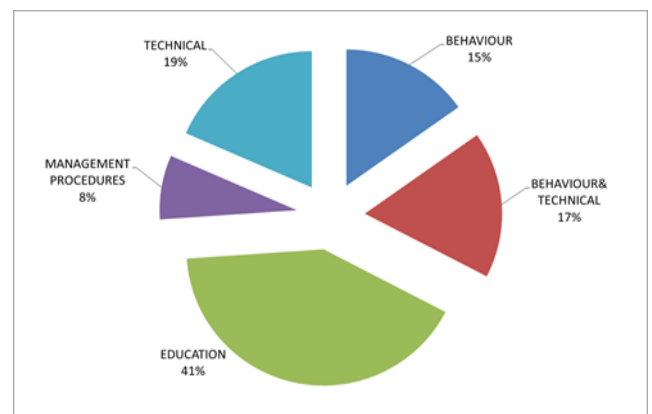


The actions are based on different types of approaches:

- *behavioural*: switch off the light, check of electric counters (increasing school communities' awareness)
- *educational*: collecting data, assessment, communication and information

- *technical*: replaced lighting system, smart metering installation, new equipment devices, new waste collection systems, etc.
- *procedural*: adoption of energy efficiency procedures, environmental criteria for public procurement, regulation for Lab maintenance and management, etc.

The percentage distribution of the approaches carried out by the partners is shown in the following graph:



Basically, each Energy Action Plan lasts one academic year and the improvement objectives should change on yearly basis.

Building the EduFootprint App and Platform

The Slovenian partner of the University of Ljubljana, IRI UL, in collaboration with the lead partner, Province of Treviso, is developing an **EduFootprint App for mobiles and tablets** that will allow the

partners' schools to check their CO₂ emissions concerning the use of **electricity, heat, paper** and **mobility** over a set period.

The App will be a practical and appealing tool (based on a simplified version of the EduFootprint calculator) to give school users the chance to become **aware of their carbon footprint** and be more involved in the activities they are going to implement with a view to reduce their CO₂ emissions.

At the same time, the Province of Treviso is developing the **EduFootprint platform for the exchange of best practices, which is available at <http://edufootprint.provinciatreviso.it>**. It is a web based platform that is going to contain **materials documenting the activities that schools have carried out to reduce their carbon footprint**, so that they could provide inspiration to other schools and, hopefully, be replicated elsewhere.

The platform will be structured into **five thematic fields**, it will be **in English, public**, open also to the contributions of subjects outside the partnership and **accessible to all users**. The best practices uploaded in the platform will be in English or in national languages to facilitate exchanges at local level; however, every best practice will be accompanied by a **short summary form in English**, containing the most important information and contact details.

Storytelling videos

The EduFootprint partners are working with the schools in the production of several storytelling videos with the aim of increasing awareness on energy efficiency and the environmental footprint among the schools and university communities.

Most of them will be shown during the annual MED Programme Event on 18th-19th April in Rome (Italy). Those already available are accessible at the project website: <https://edufootprint.interreg-med.eu/what-we-achieve/deliverables>

Promotional events

According to the project planning, several project promotional events have been organised by the partners at local or regional level with the aim of increasing awareness on the project, its activities and main results, as well as on the main issues tackled by EduFootprint, such as Energy Efficiency, Environmental Footprint and sustainability of the educational service in public schools and universities:

Alentejo (Portugal): *"Energy Efficiency as a Tool for Sustainable Development"*, 13th December 2017 in Arronches.

Veneto (Italy): *"Energy Efficiency 2.0: measurement, behaviour and CO₂ footprint in public buildings"*, 7th February 2018 in Treviso.

Central Slovenia (Slovenia): *"Regional Energy Efficiency workshop"*, 19th January 2018 in Ljubljana.

Albania: *"EduFootprint at Tirana International Fair"*, 23rd November 2017 in Tirana.

Three other promotional events will take place in **Andalusia** and **Attica** regions and in **Sicily** in March/April 2018.

Additionally, the project has been present in a number of external events, such as the 8th edition of Open LivingLab Days (Aug-Sept 2017 in Krakow), Graspino project conference (Sept. 2017 in Siena), Open Classroom session "Energy efficiency challenges for a local sustainable development: challenges of social service" at Instituto Politécnico do Portalegre (Oct. 2017 in Portalegre), ENOVE+ Fair (Nov. 2017 in Portalegre) or the INTENSSS-PA project workshop (Feb. 2018 in Maribor).

More information on EduFootprint news and events can be found at: <https://edufootprint.interreg-med.eu>

EDUFOOTPRINT consortium meetings



The 4th Edufootprint meeting and Steering Committee was held on 20th-21st February in Seville (Spain), hosted by the Official College of Industrial Engineers of Western Andalusia (COIIAOC), Spanish partner of the project.

In addition to the monitoring and discussion about the progress of the project technical activities, and particularly to the Energy Action plans in the schools, a special focus was put in the Testing phase of the project, which will follow in the next months, as well as on the project App and the Platform.

The consortium discussed on a common approach to the transfer activities in all project regions and at

transnational level. Mr. Francesco Molinari, expert supporting the project on behalf of Provincia di Treviso, and Ms. Emilia Arrabito from SVIMED (partner leading the Testing Work package) presented the key issues and planned activities to set the ground for the Testing phase.



The consortium had the opportunity to monitor the communication activities, and the project coordinator informed on the networking activities carried out in the framework on the *Efficient Buildings community* and the next MED Event to take place on 18th-19th April in Rome. The project 2nd reporting was also tackled in the meeting.

MED Programme event: "MADE in MED - Crafting the future Mediterranean"



The whole MED community, as well as decision-makers, policy promoters, experts and the media are invited to participate in the next MED Programme event, **MADE in MED: Crafting the future Mediterranean**, which will take place on 18th-19th of April 2018 in Rome (Italy)

It is a two-day event where the first day will spin around the concept of Fablab: "Fabrication Laboratory", presenting the first results of the 90

MED projects through a conference and an exhibition. To complement this approach, the second day will focus on the scaling up of strategic actions by PANORAMED project, as well as on the Interreg MED vision and the post-2020 perspective.

More information about the event is available at: <https://interreg-med.eu/news-events/events/made-in-med/>



Focus on the pilot areas: Slovenia, Albania and Greece

Slovenija /Ljubljana – Central Slovenia Region

The EduFootprint pilot activities in Slovenia are carried out in five buildings of the **University of Ljubljana**, by the **Institute for Innovation and Development** of this University (**IRI UL**).



The University of Ljubljana (UL) was founded in 1919. It is based in Slovenia's capital the city of Ljubljana, a relatively big Central-European city with over 300.000 inhabitants. Students account for more than one-seventh of the population, giving the city a youthful and lively character. The founder of the UL is the Republic of Slovenia (RS), all formally approved educational programmes and research projects are financed by the government of the RS according to the law of higher education, however based on the law, RS transfers all the assets to the university.

The majority of the UL buildings are situated in the **Municipality of Ljubljana (MoL)**. The MoL has also developed **local energy concept (LEK MoL)**, which is in accordance with the **20-20-20 strategy and Covenant of Mayors** as well.

The UL activities are carried out in approximately 71 buildings that jointly represent 276.615 m² of net covered surface. Out of these, 91 % are older than 15 years and some are protected as cultural heritage. Out of that, there are 48 main buildings, so called faculty buildings, covering 197.761 m² (71%) of ground surface. The common characteristics of those "typical UL buildings" are that they have usually more floors; lecture rooms, cabinets for professors/administration and laboratory facilities. Total annual energy consumption of those UL buildings is approximately 60 GWh (57 % for heat and

43 % for electricity), amounting to 5.2 million € costs (data based on UL balance sheet 2016).

The UL can be considered as a micro society with various building functions and users, each with their own energy characteristics. It contains new and existing (often historical) buildings, the majority of which have high energy consumption. The great opportunity of the UL to be a front runner and a shining example in sustainability is the in-house knowledge. This knowledge can be an important part in the process of energy efficient buildings production. Moreover, sustainability can be embedded in education. The latter is essential in the transition from the fossil fuel-based society to the renewable based society as today's students are tomorrow's principals, entrepreneurs, users and experts.

In order to ensure the management of demanding interdisciplinary problems, the UL established Institute for Research and Development (IRI UL). IRI UL is a joint venture between the University of Ljubljana (UL) and ten technologically advanced and successful Slovenian companies as a non-profit research and development institute with a mission to initiate the creation/attainment, transfer, distribution and application of knowledge. IRI UL is also official energy manager for University of Ljubljana (UL), as such has prepared and monitors the implementation of the University Sustainable Energy Action Plan (SEAP), and established an Energy Management system for UL public buildings.

At the **EduFootprint pilot area**, five buildings with building area of 72,753 m² are included. They differ in relation to the energy characteristics (from new to the energy renovated and energy non-efficient). During data analysis it was found that calculator is very useful for a comprehensive assessment of CO₂ emissions in educational process. As CO₂ is usually not the best information for motivating building users, the action plan of the IRI UL is a combination of different measures with which we can influence user behaviour toward better energy efficiency.

Albania

Albania is located in South-eastern Europe, an area of 28,748 km². Total population is 2.8 million, 49.8% Female and 50.2% Male (2011 Census). Capital city is **Tirana** with 418,495 inhabitants, which together with **Elbasan**, the third largest city of 283,822 inhabitants, are the **two cities of the pilot area** for this project.



Environmental problems are caused mainly from the increased demand for natural resources. Main concerns are related to air pollution, greenhouse gas emissions, bad waste management, and the contamination of freshwater and marine resources, deforestation and decline in forest areas.

Currently Albania is a low emitter of greenhouse gases with 2,76 tons CO₂ per capita compared to EU 9,9 tons per capita but they are projected to increase in the coming years, mainly from transport followed by agriculture and waste sector (Programme of Cooperation for Sustainable Development UN Sustainable Development Framework 2017-2021).

A new **Law on Energy Efficiency** was developed and adopted on 12 November 2015, requiring a minimum energy performance and certificates for buildings, energy efficiency audits of buildings and industry, standards and labels for energy using household appliances etc. Additionally, the **Law on**

Energy Performance in Buildings in 2016, establishes the legislative framework on the energy performance of buildings including public buildings as top priority. It requires Minimum energy performance for buildings, new building or existing, especially the public buildings.

In this context, the pilot activities of EduFootprint project in Albania are carried out by **IEP (Institutit Europian Pashko)** in **5 schools** in two different municipalities: **Tirana and Elbasan**. Tirana Municipality has a SEAP approved in 2015, while Elbasan Municipality counts on an Elbasan Regional Energy Efficiency Action Plan (ongoing), which was set off in 2017.



Two of the schools, which comprise both elementary and secondary levels, are sited in Elbasan, while other three schools (2 high schools and 1 comprising elementary and secondary levels) are sited in Tirana. These five schools involve a total of **5.358 students**.

For the development of the project, and particularly of the pilot activities to support public schools reduce their Environmental Footprint, a number of **relevant local and national stakeholders are involved**, such as the Municipality of Tirana (associated partner of the project), Ministry of Energy and Industry, Regional Education Directorate of Tirana, Regional Education Directorate of Elbasan, RCE Albania, Ministry of Education and Sports, Ministry of Energy, Ministry of Urban Development and FAU - Faculty of Architecture and Urbanism.

Greece – Attica Region

The **Municipality of Fyli** is located north east of Athens within **Attica Region** and covers a geographical area of 109,128 km². In 2011, the municipality counted 45.965 inhabitants.

The Municipality usually attracts the attention of the media from all over Greece due to existence of the biggest landfill of the country in its geographical area. The surface of the landfill is 4.500.000 m². The

atmosphere is charged with pollutants both by the landfill and the trucks of all Attica Region driving through the municipality to arrive to the landfill. Therefore, the Municipality is crucial to focus to all sources of CO₂ emissions to improve local but also regional environmental conditions.

The Municipality has signed in the **Covenant of Mayors** initiative and its **SEAP is under development**.



Given that **almost 50% of CO₂ equivalent gas emissions** come from the **stock of public buildings** (either at the ownership or the administration responsibility of the municipality) the local authority decided both to test the EduFootprint Methodology with Life Cycle assessment approach in **4 of its schools** and also find additional funding from the state to apply interventions to several municipal buildings with a budget of 2.500.000 euros to improve energy efficiency.

The four schools (2 primary schools and 2 junior high schools) of Fyli involved in the pilot actions of EduFootprint represent 9% of the public schools in the municipality and account to 1.020 students, out of 10.600 students in the area.

EGTC EFXINI POLI is the EduFootprint partner in charge of the project activities in Greece. For the pilot activities, most of the data collected at the first stage in order to estimate the environmental footprint of the schools came from the **Municipality's technical office** which is the administrator of the buildings.



A technical approach

Results of the EduFootprint calculator: CO₂ emissions related to the Mediterranean schools in Slovenia, Albania and Greece

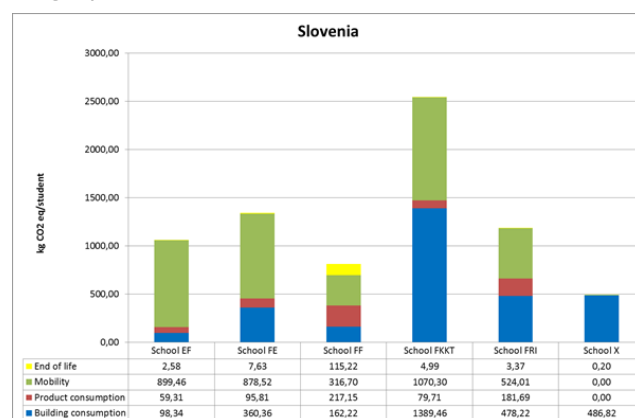
The EduFootprint Project foresees to calculate the footprint connected to a "starting point", defined by the partners as "baseline". It is related to the academic year 2015 – 2016. One of the main aims of the Project is to reduce the value of the footprint produced by the *educational system* of each involved school after a period during which training activities and technical interventions have been carried out.

The data analysis should have helped partners (and should help them in the future) to identify issues to focus on in order to reduce the environmental footprint *without reducing the service offered to students* (in this sense, it would not be useful to reduce the number of excursions to reach a CO₂ emissions' reduction!).

It has to be highlighted that the calculator should be completely filled in to provide a value as precise as possible. If some information is missing,

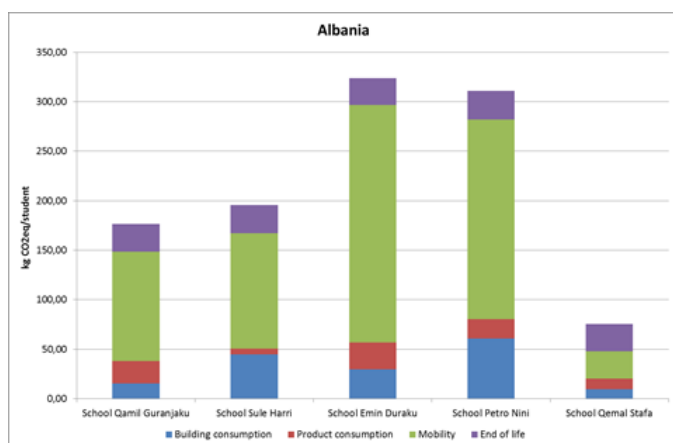
consequently *the environmental footprint will be lower but even misrepresented*. Defining the baseline allowed the partners to identify the missing data to be collected.

The analysis of the environmental footprint related to the baseline for **Slovenian** educational system provided by the University of Ljubljana is shown in the graph below.



The calculators of Slovenian educational system are quite completed: only data about excursions are missing but for the university level, they do not make sense. The FKKT building hosts the Faculty of Chemistry and Chemical Technology and it is the biggest one (almost 14.150 m²) and, consequently, the most energivorous.

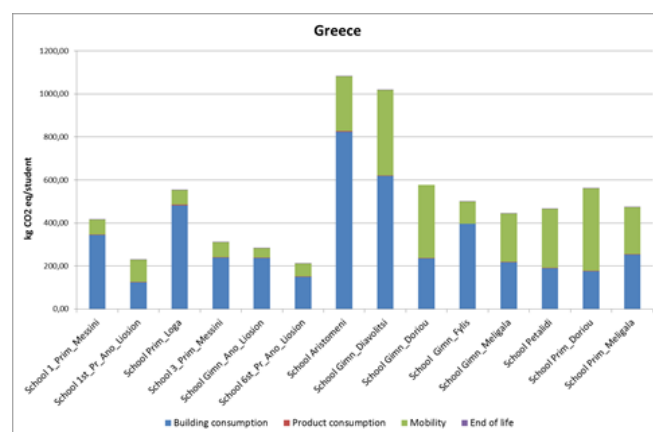
The analysis of the environmental footprint related to the baseline for **Albanian** educational system provided by the five schools involved in the Project is shown in the graph below.



A difficult data collection characterized the preliminary phase: there was no schools manager (actually, the creation of a managing team is one of the identified improvement action).

During the testing period the partner collected information from different departments of Municipalities and from the schools through constant contacts and meetings. Some data will not be available, but all involved stakeholders are collaborating. The missing data in the first period were essentially thermal energy, paper consumption and differentiated waste quantities. The contribution of the mobility comes from the school excursions, but this result is not negative because it contributes to improve the service offered by the school to the students.

Regarding **Greece**, the collected data are: thermal energy, electric energy, water consumption, paper consumption, school-home mobility and food distributed in the internal cafeteria; in other words, no other parameters were available.



Efficient Buildings MED Community: Activities

Following the Energy Efficient Buildings annual congress (*“Choosing the route to Energy Efficiency in Public Buildings in the Med area: a pathway to policies and practices”*), which took place from 4th to 6th October 2017 in Nice (France), networking activities have been carried out among the modular EEB MED projects and MEDNICE, sharing knowledge and experiences, aiming at creating synergies and achieve a wider impact in the MED regions.

MEDNICE, with the contribution of the EEB modular projects, has closely worked with the MED Programme to co-organise the Climate change Area of the Fablab (*“Fabrication Laboratory”*) session to be developed during the first day of the Annual MED Programme event: *“Made in MED: Crafting the future Mediterranean”* in April 2018. In this session, the results and achievements of the EEB projects will be showcased.



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