



European Group of Territorial Cooperation
Efxini Poli

ACTIVITIES IN LOCAL COMMUNITIES EDUFOOTPRINT & TEESCHOOLS PROJECTS



Project co-financed by the European
Regional Development Fund



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Regional Development Fund

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PRIORITISE ENERGY EFFICIENCY (EE) MEASURES IN PUBLIC BUILDINGS: A DECISION SUPPORT TOOL
FOR REGIONAL AND LOCAL PUBLIC AUTHORITIES,
MID TERM CONFERENCE / 21 JUNE 2018 / VENUE: THE GOULANDRIS MUSEUM OF NATURAL HISTORY

EGTC is...



The **European Grouping for Territorial Cooperation** (EGTC) is a European Union level form of transnational cooperation between countries and local authorities with legal personality.

The European Grouping of Territorial Cooperation is governed by **Regulation (EC) N° 1082/2006**, amended by **Regulation (EU) No 1302/2013**.

It may implement programmes and projects of territorial cooperation, with or without EU funding. The goal is territorial cohesion

The EGTC has its own organisation, budget and staff.

Currently **68 EGTCs** (3 of them based in Greece)





EGTC Efxini Poli is...

... a European Grouping of Territorial Cooperation composed by Local and Regional Authorities as well as institutions of the academic and local authorities' context, coming from Greece, Cyprus and Bulgaria.

established in August 2012 as an EGTC, but it operates as a Network of Greek Local Authorities since 1995. The organization holds an experience on local development of more than 25 years.

EGTC Efxini Poli aims at supporting its members to attain cohesion and trigger growth by testing and adopting innovative practices identified through territorial cooperation.



EGTC Efxini Poli in numbers

36 members from EL | CY | BU

more than **2.500.000** inhabitants

6 current projects & more than **3.000** directly beneficiaries

more than **100** projects until now

9 Employees

Partners from:

BE | EL | LT | PT | BG | ES | LU | RO | CZ | FR | HU | SI | DK | HR | MT | DE | IT | NL | FI | EE | CY | AT | SE | IE | LV | PL
| UK | AL | TR | BA | TN | RU



OUR MISSION

to facilitate public entities of different Member States to come together under a new legal entity and succeed common objectives.

OUR AIM

to promote territorial cooperation (cross-border, transnational and interregional), in view of strengthening the economic and social cohesion of the European Union.



Axes of our actions

Cooperation aiming at sustainable development, improvement for standard of living and quality of life

Actions of territorial cooperation

Support for Local and Regional authorities

Participation in European projects

Support and promotion of Green and Blue Growth

Promotion of Social Economy and Entrepreneurship

Social activities development aiming at a cohesive society

Cooperation with academic institutes

Exchange of experiences, promotion and transfer of good practices

Support and promotion of culture



European (Territorial Cooperation) Projects



How and why we are involved in Interreg project?

Despite the fact that EGTC EFXINI POLI members are diverse with their own social, economic and geographical peculiarities, they are all concerned of some horizontal issues. For example, environmental issues or blue or green growth, are of common interest to many Local Authorities

The results of the projects are disseminated to all EGTC members and can be adopted and adapted according to local needs. The existence of the network create a multiplying effect which is beneficial both for the EGTC's members as receivers of information and knowledge but also for INTERREG too because feedback included in Policy Recommendations come from a larger number of Authorities than the number of partners of the project partnership.

TEESCHOOLS - Transferring energy efficiency in Mediterranean Schools

TEESCHOOLS' ultimate goal is to develop a set of tools and methodologies to help Municipalities and buildings' managers conduct energy audits in an easy and cost effective way, so that they always know if there is more energy efficiency they can achieve.

TEESCHOOLS has selected 7 pilot areas, where 35 buildings will take part in pilot activities while other 35 will benefit from the transferring of results.

The pilot school buildings will be used for energy audits, preliminary renovation plans development, calculation of carbon footprint and development of energy service models and financing schemes.

Schools staff, teachers and students will actively take part to communication and sensitization activities, since behavioural change is a key factor for success.



-Specific Objective (MED Programme):

To **raise capacity** for better management of energy in **public buildings** at transnational level.

-Objective (TEESCHOOLS Project):

To facilitate the **implementation of the Energy Efficiency Directive** creating conditions so that more municipalities, financing institutions and consultants Develop projects of **deep renovations of schools** in the next years.



The project aims to support Local Authorities to implement Nearly Zero Energy Building (NZEB) refurbishments in Mediterranean schools. An integrated set of user-friendly tools will be tested and validated by pilot actions in each partner region.

Key outputs

- Integrated set of tools supporting energy efficiency management in schools with carbon footprint calculator, best practices database for NZEB energy renovation of school buildings, financial solutions and schemes for energy efficiency;
- Pilot applications of school buildings: energy audits, renovation plans, calculation of carbon footprint of the renovation activities, development of energy service models and financing schemes;
- E-learning and face-to-face training of regional and municipal technical staff, energy managers and students;
- Development of policy recommendations and integration of project outputs to city plans.

01 Feb 2017 to 31 Jan 2020
Duration

Lead Partner



Project partners



Teeschools @Teeschools

Project co-financed by the European Regional Development Fund

Partnership – Duration - Budget

Partnership

- ✓ Italian National Agency for New Technologies, Energy and Sustainable Economic Development (Lead Partner)
- ✓ Living Prospects Development & Environmental Services
- ✓ Valencian Federation of Municipalities and Provinces
- ✓ EGTC Efxini Poli – SolidarCity NETWORK
- ✓ City of Split
- ✓ Department for Development and International Projects of Government of Zenica- Doboj Canton
- ✓ CYPRUS ENERGY AGENCY
- ✓ RIBERA CONSORTIUM
- ✓ HEP ESCO LTD
- ✓ Municipality of Castel San Pietro Terme
- ✓ Chamber of Craft and Trade PACA Region

(11 Partners, 4 Associated Partners, 7 countries)

Duration

- ✓ 01 / 02 / 2017 – 31 / 01 / 2020

Budget

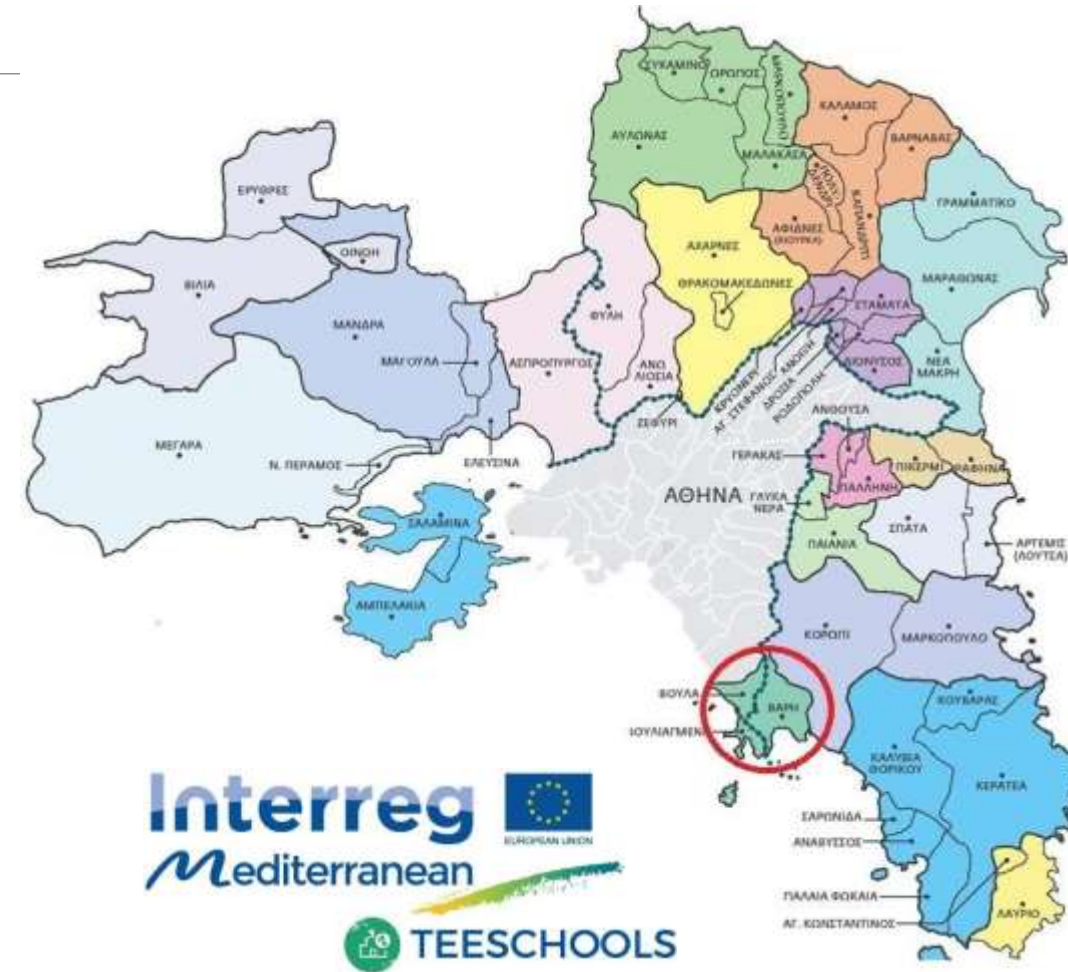
- ✓ € 2.840.000,00



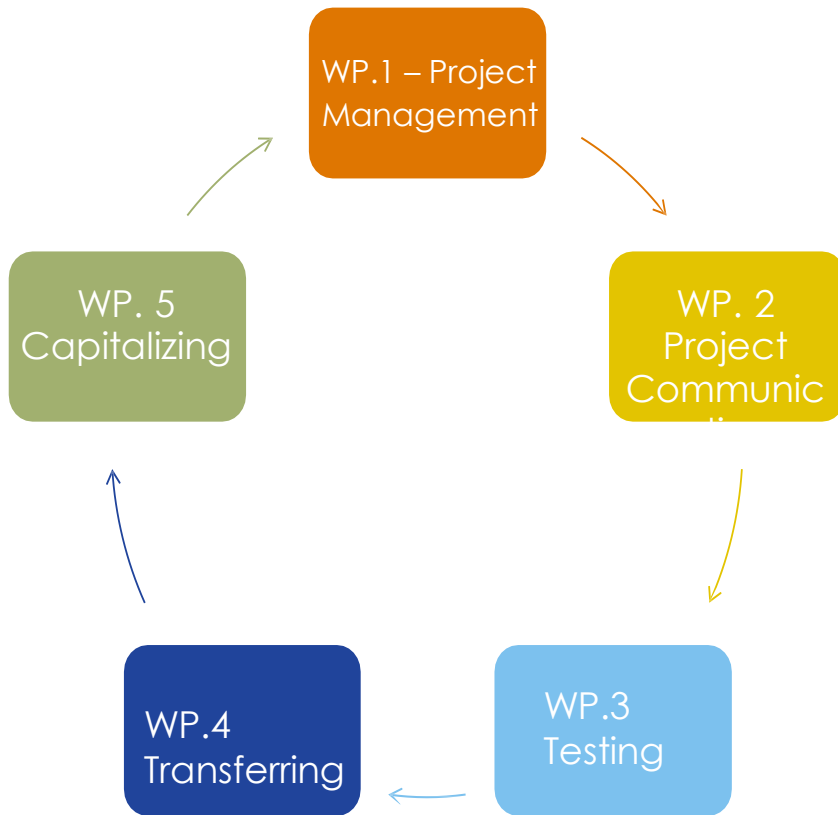
Pilot - EL

Pilot area: Municipality of Vari, Voula, Vouliagmeni

5 Schools



Work Packages



WP. 3 Implementing advanced support tools for energy efficiency renovation projects

-Facilitate **renovation projects** which will use novel energy saving technologies in public buildings following the 3 aspects of **energy saving, environmental performances and economy.**

-testing and validating the tools.

-the critical point in all Mediterranean regions is the scarcity of public funding to invest in renovation activities - a particular attention will be given to make an inventory, systematize and adapt Energy performance contracts models, PPP partnerships, to maximize the flux of private capital in public building renovations.

WP. 4 Capacity building in the public, schools and professional sector

-Capacity building will be addressed at several levels: technical, financial, planning, administrative and political.

-**Pilot activities will be the main mean** to involve Local Authorities. Municipalities staff will be involved in the pilot from the very beginning and in each action. Trainings will be targeted to Municipal energy managers, technical staff and stakeholders, as well as to students and school teachers.

-**A regional conference** will be organized in each region to involve regional authorities and staff.

WP. 5 - Capitalization of project outcome

-Capitalization will be done through institutional contacts of the partners: Regions, Associations of Municipalities, Municipalities, Regional or National Energy Agencies. Networks developed in previous projects, will be involved in the activities.

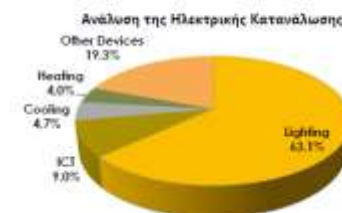
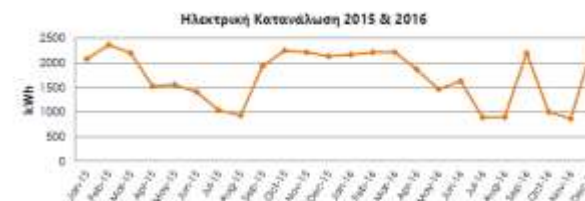
-**Synergies with the Covenant of Mayors.**

-**Action plans, policy recommendations and a green paper** to openly discuss energy efficiency issues will be issued

Data collection, Analysis

Σχολείο	Καταν. Θέρμανσ. [MWh]	Καταν. Ηλεκτρι. [MWh]	Εμβαδό (m ²)	Αριθμό Δασκάλων/ Μαθητών	Έτος Κατασκευής	Αριθμ. Καυστήρων	Μονάδες Κλιματιστικών	Αριθμός Αιθουσών
Δημοτικό Βάρκιζας	29,44	22,25	871	28/235	1974	2	17	18
2 ^ο Γυμνάσιο Βάρης	23,84	28,09	2265	20/153	1997	1	3	21
1 ^ο Γυμνάσιο Βούλας	35,60	50,36	1387	31/295	1979	1	10	20
Δημοτικό Βουλιαγμένης	27,42	30,94	2000	27/280	1961 & 1975	2	9	22
1 ^ο Δημοτικό Βούλας	15,50	37,93	3789	33/347	1975, 1990 & 2007	2	7	23

Σχολείο	Θέρμανση [kWh/m ² a]	Ηλεκτρισμός [kWh/m ² a]	Σύνολο [kWh/m ² a]
Δημοτικό Βάρκιζας	33.8	25.5	59.3
2 ^ο Γυμνάσιο Βάρης	10.5	12.4	22.9
1 ^ο Γυμνάσιο Βούλας	25.7	36.3	62.0
Δημοτικό Βουλιαγμένης	13.7	15.5	29.2
1 ^ο Δημοτικό Βούλας	4.0	10.0	14.0



Τύπος Ενέργειας	Ετήσια ενεργειακή κατανάλωση [kWh]	Ετήσιες εκπομπές CO ₂ [kg]
Ηλεκτρική	22,300	22,055
Πετρέλαιο	25,614	6,762
Σύνολο	47,914	28,817

EduFootprint, School Low Carbon Footprint in Mediterranean cities

The general objective of EduFootprint Project is to better manage, plan and monitor the energy consumption in public buildings in the Mediterranean area.

Specifically EduFootprint will reach this aim working focused in public school buildings with an innovative Life Cycle Assessment (LCA) approach, considering not just direct energy impacts of buildings (consumption), but also indirect ones (public procurement or general human awareness and behaviour).

EduFootprint contents are compatible and integrated with the sustainable development education initiatives in schools and university. EduFootprint also extends the capability of local public administration to optimize Sustainable Energy Action Plan (SEAP) in the EU Covenant of Mayors initiative.

Partnership – Duration - Budget

Partners (18 organizations - 6 countries)

Province of Treviso (LP)

Regional Energy and Environment Agency from North Alentejo, ARENATEjo

Institute for Innovation and Development of University of Ljubljana, IRI UL

Centre EuroMediterranean for the sustainable Development, Svi.Med. onlus

UET Centre / Office for Project Development and Research

EGTC Efxini Poli

Andalusian Institute of Technology, IAT

Ambiente Italia srl, AI

Institute “Stefanini” Treviso - Schoolnet for environment and energy saving ISIDE

and 9 associated partners

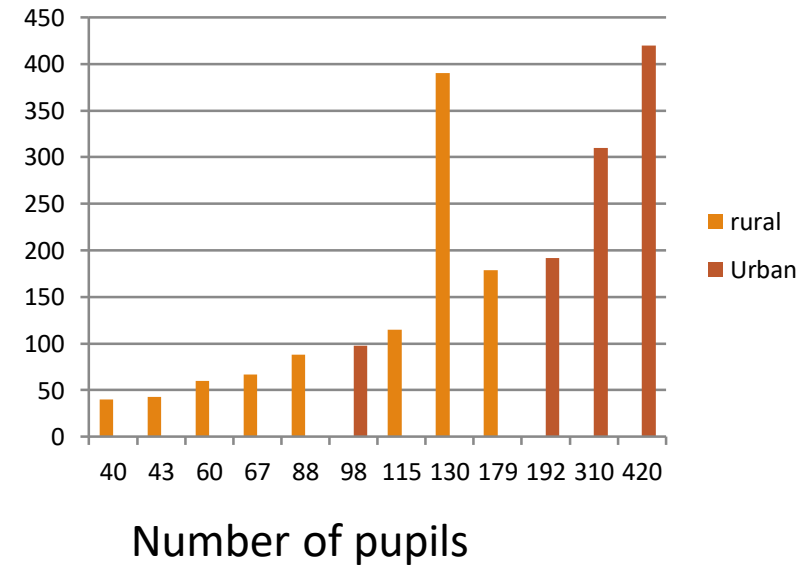
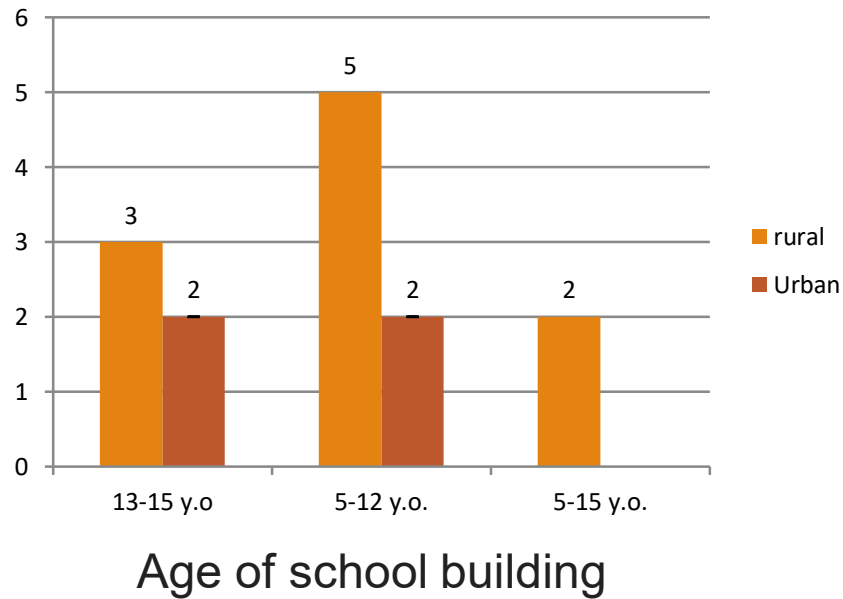
Project budget: € 1.200.684,75

Project duration: 28 months (November 2016-February 2019)



Greece, 3 Municipalities, 14 schools

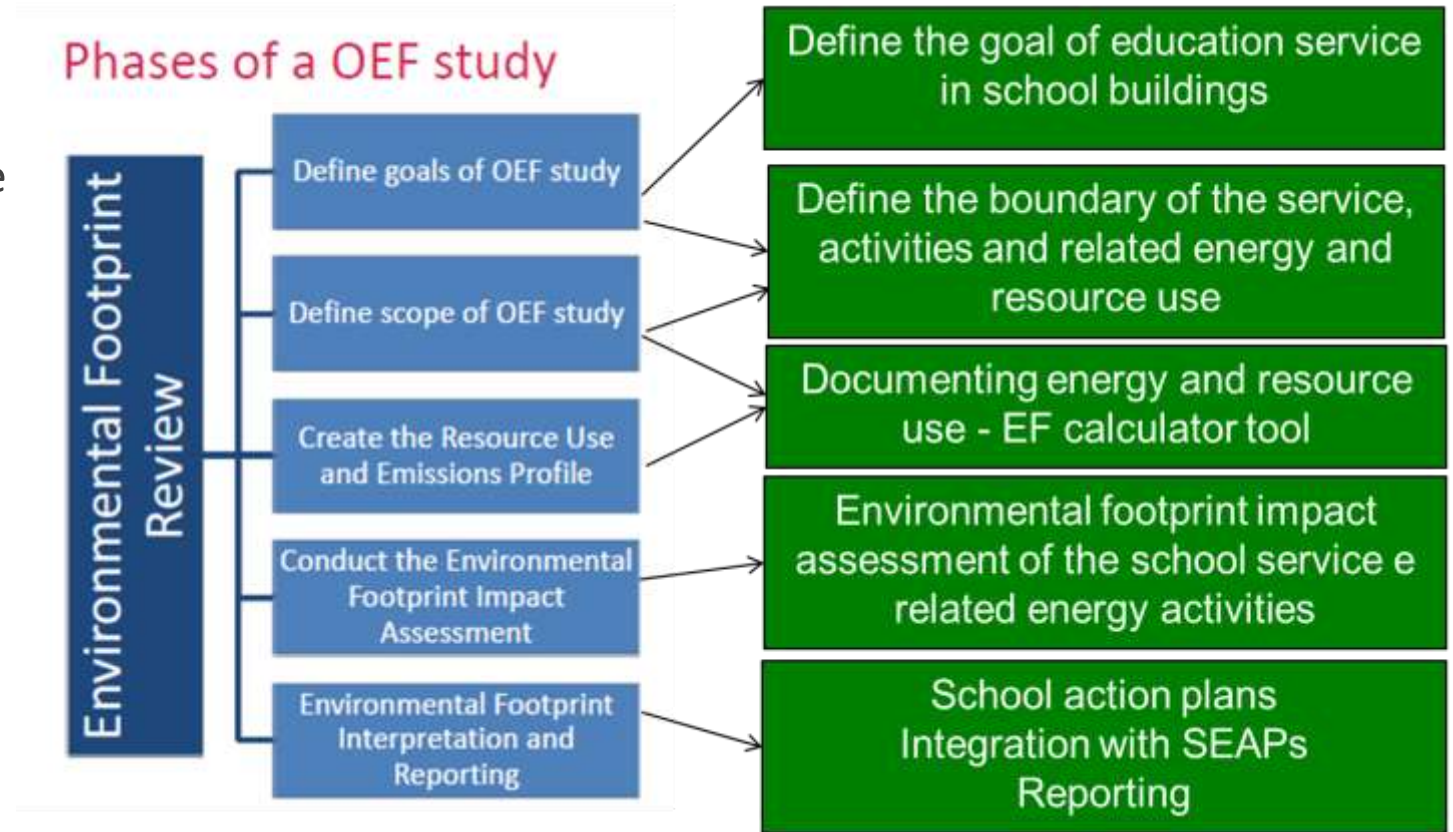
Municipality of Messini, Oixalia, Fyli



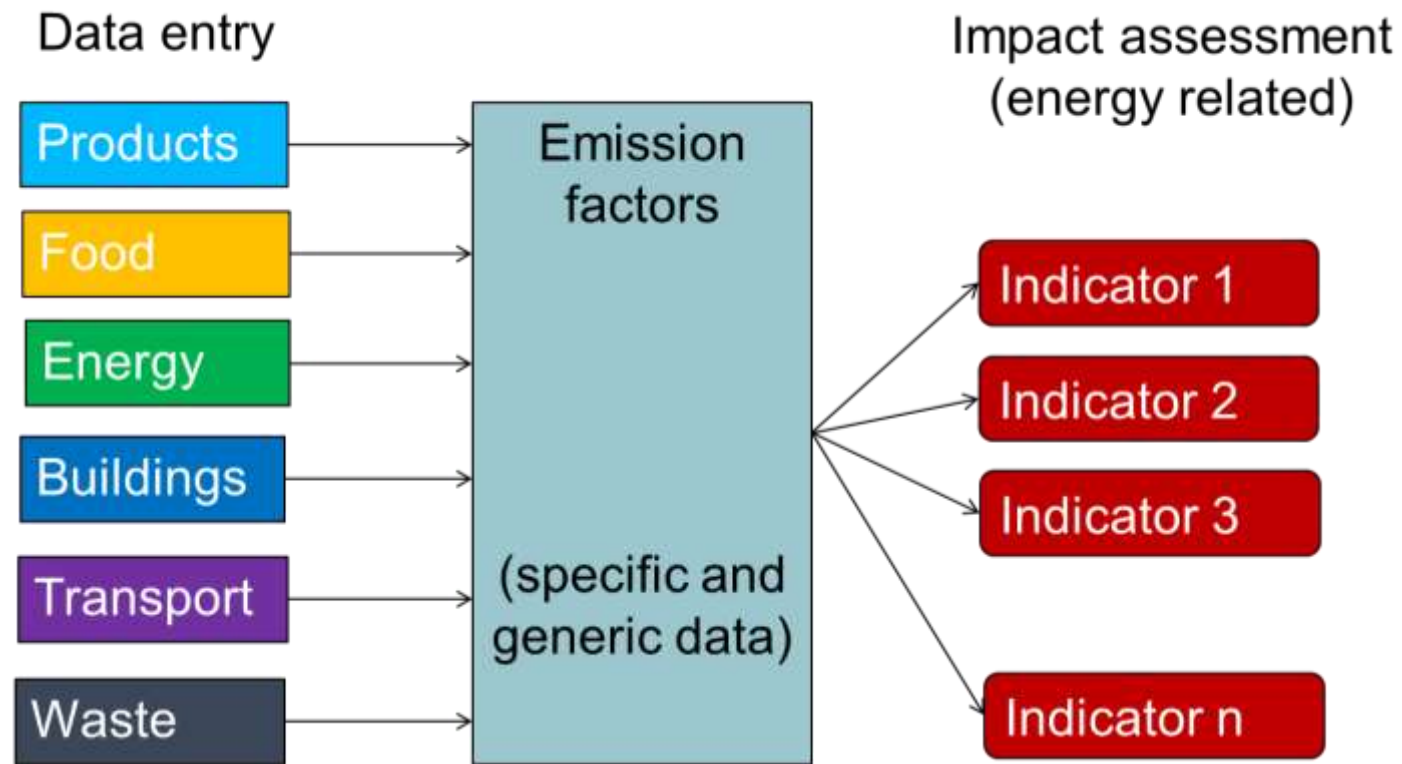
HOW IS THE ENVIRONMENTAL FOOTPRINT RELATED TO THE EDUCATION SERVICE?

LCA approach and Organisation Environmental Footprint used in MED EduFootprint project as a decision support tool to improve energy and environmental impact of education service and to increase resource efficiency.

Therefore EduFootprint can be used to analyse the environmental consequences of a change in people behaviour in public buildings (schools and university), and the efforts can be directed towards sustainability solutions.




EduFootprint calculator



EduFootprint calculator

DATA ENTRY: GENERAL UTILITIES AND PRODUCTS CONSUMPTION

 **EduFootprint**

Fill this column by choosing one answer from the menu Please, fill all the boxes in green

	AVAILABLE DATA?	Unit of measure	DATA	DISTANCE FROM SUPPLIER			NOTES
				(km by truck)	(km by train)	(km by ship)	
BUILDING CONSUMPTION							
ELECTRIC ENERGY							
Electricity consumption from network	Yes	kWh	2.311,00	-	-	-	
Country where the school is:		-	Italy	-	-	-	
Electricity consumption from network: just certified clean energy from renewable sources	Not applicable	kWh		-	-	-	
...percentage produced by solar power (thermal, photovoltaic, concentrated)		%		-	-	-	
...percentage produced by hydroelectric power		%		-	-	-	
...percentage produced by wind power		%		-	-	-	
...percentage produced by geothermal energy		%		-	-	-	
...percentage produced by biofuels		%		-	-	-	
...percentage produced by the renewable energy		%		-	-	-	
...percentage produced by other sources		%		-	-	-	
Electricity consumption from self-produced energy (not consumed)							
...percentage produced by solar (concentrated)							
...percentage produced by hydroelectric							
...percentage produced by wind power							
...percentage produced by biofuels							
...percentage produced by other sources							
Self-produced energy (not consumed)							
Electricity consumption [TOTAL]							



EduFootprint calculator  EduFootprint																	
RESULTS BY AREA: School's Environmental Footprint																	
TOTAL	Total primary energy MJ	Climate change kg CO2 eq	Ozone depletion kg CFC-11eq	Freshwater ecotoxicity CTUe	Human toxicity, cancer CTUh	Human toxicity, non-cancer CTUh	Particulate matter kg PM2.5 eq	Ionizing radiation kBq U235 eq	Photochemical ozone formation kg NMVOC eq	Acidification mole H+ eq	Terrestrial eutrophication mole N eq	Freshwater eutrophication kg P eq	Marine eutrophication kg N eq	Water resource depletion m3 water eq	Mineral, fossil & non-fossil resource kg Sb eq	Land use change kg C deficit	
TOTAL	57,426,31	4,568,97	0,00	5,315,54	0,00	0,00	1,02	276,67	5,87	17,33	14,21	0,49	1,41	55,16	0,01	393,61	
BUILDING CONSUMPTION		4,568,97	0,00	5,315,54	0,00	0,00	1,02	276,67	5,87	17,33	14,21	0,49	1,41	55,16	0,01	393,61	
ELECTRIC ENERGY		1,176,65	0,00	3,081,27	0,00	0,00	0,43	184,08	2,35	6,00	7,63	0,31	0,76	10,95	0,00	292,23	
THERMAL ENERGY		3,320,89	0,00	1,754,12	0,00	0,00	0,56	62,10	3,36	10,89	6,03	0,12	0,59	0,50	0,00	48,67	
WATER CONSUMPTION		71,43	0,00	480,15	0,00	0,00	0,03	30,49	0,16	0,43	0,56	0,06	0,06	43,71	0,00	52,71	

Input

Data collected from schools are divided in five groups / sections:

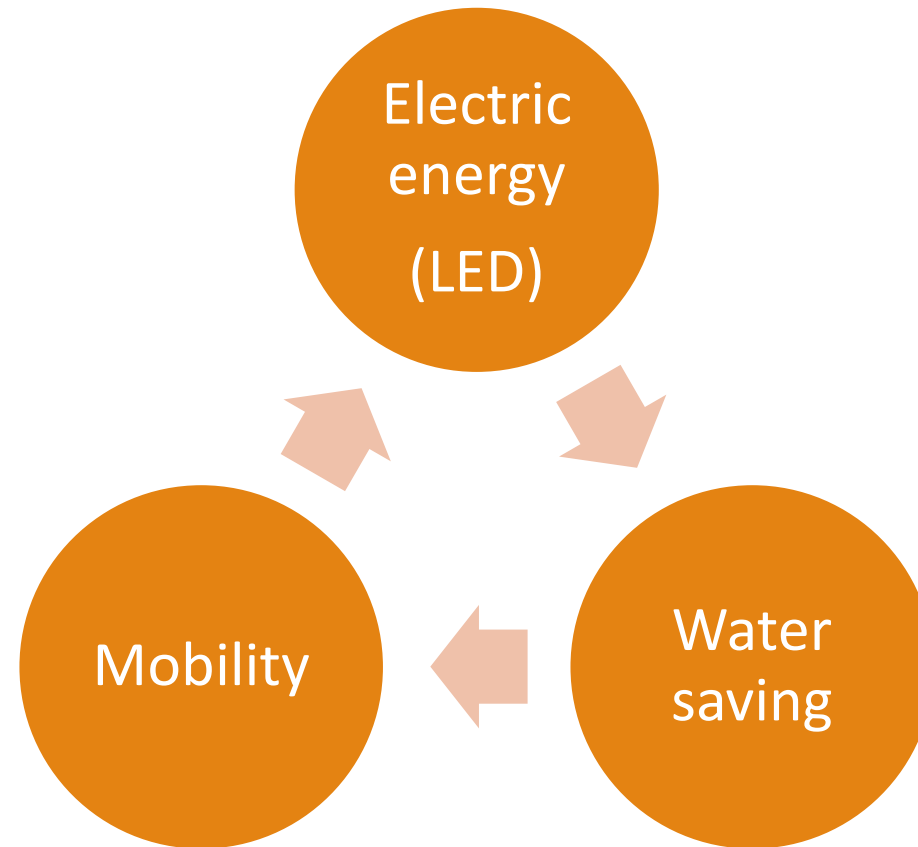
- Building consumption (electric energy, thermal energy, water consumption)
- Product consumption (paper products, stationery products, toilet and cleaning products, equipment, chemical used in labs, gardening)
- Mobility (internal vehicles, home-school run, travel excursions)
- Food (canteen, cafeteria, dispensing machines)
- End of life (waste, wastewater)

Output

“Results by area” expressed by impact categories

Impact categories	Unit of measure	Assessment model
Climate change	kg CO ₂ -eq	GWP 100 years
Ozone depletion	kg CFC-11 eq	EDIP model based on the ODPs of the WMO over an infinite time horizon
Ecotoxicity for aquatic fresh water	CTUe	USEtox model
Human toxicity- cancer effect	CTUh	USEtox model
Human toxicity- non cancer effect	CTUh	USEtox model
Particulate matter / respiratory inorganics	kg PM _{2,5} -eq	RiskPoll model
Ionising radiations - human health effects	kg U235 eq	Human health effect model
Photochemical ozone formation	kg NMVOC	LOTOS-EUROS model
Acidification	Mole of H ⁺ eq	Accumulated Exceedance model
Eutrophication - terrestrial	Mole of N eq	Accumulated Exceedance model
Eutrophication - aquatic freshwater	kg P eq	EUTREND model
Eutrophication - marine	kg N-eq	EUTREND model
Resource depletion - water use	m ³ eq	Swiss Ecoscarsity model
Resource depletion - mineral, fossil & renew.	kg Sb-eq	CML2002 model
Land transformation	kg C deficit eq	Soil Organic Matter (SOM) model

Action plans (per school)



Next steps

- Collaboration with Municipalities for
 - implementation of interventions (€ 30,000)
 - improvement of SEAP
- Measuring the impact of interventions
- Information activities in schools
- Networking in Edufootprint (using app)



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Thank you!

Ευχαριστώ !



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