



# SERBIA GREEN BUILDING EXPO | BEOGRAD

SAJAM I KONFERENCIJA — EXHIBITION AND CONFERENCE | 23-25 FEBRUARY 2012

Italian National Agency for New Technologies,  
Energy and Sustainable Economic Development

## Sustainable Industrial Areas

Dan 3 • Day 3 / 25. februar • February 25<sup>th</sup>  
Belexpocentar, Novi Beograd

**Istraživačka i razvojna agencija ENEA – Italijanska nacionalna agencija za nove tehnologije, energiju i održivi ekonomski razvoj, finansirana je od vlade Italije.**

Agencija vrši istraživanja u oblastima koje će pomoći da se razvije i unapredi konkurentnost Italije i poveća zaposlenost, istovremeno štiteći životnu sredinu. Rad Agencije fokusiran je na nekoliko oblasti: energetska efikasnost, obnovljivi izvori energije, nuklearna energija, klima i životna sredina, bezbednost i zdravlje, nove tehnologije i istraživanja energetskih mreža.

**Osnovana 1952. godine sa ciljem da razvija nuklearne programe u civilnom sektoru, ENEA je nekoliko puta adaptirala svoju misiju u skladu sa novim trendovima i problemima. Danas, agencija ima sledeće ciljeve:**

- Preduzimanje inicijativa u cilju razvoja, unapređenja i promocije istraživanja i inovacija u skladu sa italijanskim obavezama prema EU i međunarodnim ugovorima, u smislu *energetske efikasnosti, zaštite životne sredine i tehnoloških inovacija.*
- Podrška implementaciji proizvodnih procesa visoke tehnologije, naročito uz promociju potrebe za istraživanje i tehnologije koji su orijentisani ka unapređenju održivog razvoja.
  - Promocija transfera tehnologije i postignuća na polju energetske efikasnosti i zaštite životne sredine ka javnim ustanovama i privredi, kako bi ostali u liniji sa nacionalnim i EU preporukama.

U oblastima iz svog delokruga, ENEA promoviše saradnju sa organizacijama i institucijama drugih zemalja u oblasti nauke i tehnologije, uspostavljanjem tehničkih standarda i preuzimanjem uloge u ključnim istraživačkim programima. ENEA ima dvanaest istraživačkih centara širom Italije, a sedište se nalazi u Rimu.

### PAKETI / PACKAGES

Slobodan ulaz uz sve pakete i za sve studente uz blagovremeno popunjenu Prijavu.



Open Day included in all the Packages and for students with on-time Application.

**ENEA, Italian National Agency for New Technologies, Energy and Sustainable Economic Development, is a research and development agency financed by the Italian Government.**

The Agency undertakes research in areas which help to develop and enhance Italian competitiveness and employment, while protecting the environment. The Agency's main research issues are identified as follows: energy efficiency, renewable energy sources, nuclear energy, climate and the environment, safety and health, new technologies, electric system research.

**Founded in 1952 with the aim to develop nuclear research for civil application, ENEA has widened and revised its mission several times according to the new trends and concerns. Actually, the agency has the following goals:**

- To undertake initiatives aimed at developing, enhancing and promoting research and innovation, in keeping with Italy's EU and international commitments in terms of *energy efficiency, environmental protection and technological innovation.*
- To support the implementation of high-tech production processes, especially by promoting demand for research and technology oriented towards enhancing sustainable development.
- To promote the transfer of technology and developments in the fields of energy efficiency and environmental protection to public administrations and businesses, in keeping with national and EU guidelines.

ENEA promotes, in the sectors in which it operates, collaboration with the organisations and institutions of other countries in the scientific and technological spheres, defining technical standards and taking part in major research programmes.

ENEA has 12 research centers in Italy, with headquarters placed in Rome.

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Mario Tarantini

ENEA Senior Researcher, MEID project

## Towards Sustainable Industrial Areas in The Mediterranean Region: The MEID project

Dan 3 • Day 3 / 25. februar • February 25<sup>th</sup>

**Mario Tarantini, viši istraživač, radi u odeljenju za energetske sisteme ENEA-e od 1984. godine a od skora i u Tehničkoj jedinici za procenu uticaja na životnu sredinu. Tokom godina bavio se razvojem i primenom metoda i alata za procenu i projektovanje kao što su LCA metodologije i EMS procedure, u cilju smanjenja uticaja procesa i proizvoda na životnu sredinu.**

Trenutno radi kao koordinator MEID projekta, i, ispred Ministarstva životne sredine Italije, u radnoj je grupi programa EU GPP za podsticaj kupovine zelenih građevinskih proizvoda. Ima više od 50 publikacija i prezentacija na međunarodnim konferencijama i seminarima.

**Predavanje koje će Mario Tanatini održati u Beogradu nosi naslov *Prema održivim industrijskim zonama u regionu Mediterana: MEID projekat.***

Jedan od koncepata koji su razvijeni tokom poslednjih decenija u razvoju industrije u cilju suočavanja sa neprekidnim povećanjem zagađenja i neodrživog korišćenja prirodnih resursa, jeste Industrijska ekologija (IE) koja se zasniva na metaforičkoj vezi između prirodnih ekoloških i industrijskih sistema.

Nakon kraćeg uvodnog izlaganja predavanje će se fokusirati na aktivnosti i rezultate MEID projekta, osnovanog od strane Evropskog fonda za regionalni razvoj (ERDF) u okviru MED programa. Glavni cilj MEID-a jeste da razvije proceduralni model za planiranje gradnje i upravljanja održivim industrijskim oblastima u regionu Mediterana.

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MEID – Mediterranean Eco Industrial Development

LCA – Life Cycle Assessment

GPP – Green Public Procurement

EMS – Environmental Management System



Industrial areas are economic entities which, if supported and encouraged, can promote growth, jobs and entrepreneurship. Nevertheless the excessive exploitation of raw materials, the use of non-renewable energy resources, the emission of pollutants and waste production have up to now represented a weakness in the present production model.

Among the new industrial development approaches developed over the last decades to face the continuous increase of environment pollution and the unsustainable use of natural resources, one of the most promising concepts is Industrial Ecology (IE) which is based on the metaphorical relationship between natural ecological and industrial systems. To play a significant role in the path towards sustainable development Eco-Industrial Areas should go beyond waste and by-products exchange, acting as true industrial communities, characterized by highly cooperative and symbiotic relationships between firms which share all available opportunities to minimise the use of resources and create better products.

After a short introduction on these concepts, the speech will focus on the activities and results of the MEID project, funded by the European Regional Development Fund in the framework of the MED program. MEID has the main aim to develop a procedural model to plan build and manage sustainable industrial areas in the Mediterranean region.

### About Mario Tarantini

**Mario Tarantini is senior researcher at the ENEA. Graduated in Mechanical Engineering, he has worked since 1984 in Energy Systems Department of ENEA and, more recently, in the Environmental Assessment Technical Unit.**

He has promoted since several years the development, application and dissemination of evaluation and design methods and tools, such as Ecodesign and LCA methodologies, and EMS procedures, for reducing the environmental impact of processes and products. He has more than 15 years of experience in conducting national and international research projects. He is at present coordinating the project MEID and, on behalf of Italian Ministry of Environment, a working group to define environmental criteria for Green Public Procurement of building materials and elements. He planned and conducted conferences, seminars, workshop and courses on LCA for universities and industry. He has more than 50 publications and presentations at international conferences and seminars.



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Ariana Dominici Loprieno  
ENEA Researcher, MEID project

## Industrial Buildings in the MEID project: LCA activities and sustainable rating system

Dan 3 • Day 3 / 25. februar • February 25<sup>th</sup>

**Ariana Diminici Loprieno, istraživač u ENEA-i od 2004. godine gde je uključena u mnoge aktivnosti Agencije koje za cilj imaju smanjenje uticaja na životnu sredinu za procese i proizvode kao što je primena LCA metoda, definicija kriterijuma životne sredine za GPP građevinskih materijala i elemenata, ekologija industrije i razvoj održivih pristupa upravljanju u oblasti industrije.**

Trenutno radi na MEID projektu i, ispred Ministarstva eko industrijskog razvoja, uključena je u tehničku radnu grupu EU GPP programa posvećenju podsticaju kupovine zelenih građevinskih materijala u javnom sektoru.

**Naslov njenog predavanja u Beogradu glasi *Industrijske zgrade u MEID projektu: LCA i održivi sistem sertifikacije.***

Iz ugla procene uticaja zgrada na životnu sredinu i emisiju gasova sa efektom staklene bašte, industrijske zgrade predstavljaju značajan korak na putu ka održivom razvoju i kao takve su izabrane za glavne aktere projekta Mediteranskog eko industrijskog razvoja – MEID.

**Nakon uvodnih smernica o ovim temama, predavanje će se fokusirati na studije procene životnog ciklusa (LCA) industrijskih zgrada u kontekstu projekta, otkrivajući glavne uticaje na životnu sredinu tokom veka upotrebe objekta.**

Takođe, biće prikazan i sistem procene industrijskih zgrada koji je tek u razvojnoj fazi i čija šema uzima u obzir najznačajnije teme održive gradnje u regiji Mediterana i dozvoljava ispitivanje karakteristika cele zgrade iz ugla LCA (izgradnja, rad, održavanje, renoviranja i rušenje), u cilju unapređenja njenih energetske i karakteristika uticaja na životnu sredinu.

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MEID – Mediterranean Eco Industrial Development

LCA – Life Cycle Assessment

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Buildings are responsible for significant environmental impacts, including primary energy consumption and global carbon dioxide emissions, primarily through the use of fossil fuels during their operational phase. Consequently, because of the large potential for their environmental improvement, many initiatives and strategies have been developed worldwide over the last years to implement sustainable construction strategies and define sustainability requirements for building and construction industry.

In this perspective, industrial buildings too are receiving increasing attention. In particular, in the framework of MEID project, industrial buildings have been taken into account because of their crucial role on the overall environmental impact of the industrial areas.

After a brief introduction on these issues, the speech will show the results of LCA studies on industrial buildings developed in the context of the project, exposing the main environmental impacts along their life-cycle.

Moreover, the sustainable industrial building rating system under development will be shown. This scheme, considering the most relevant topics of sustainable construction in the Mediterranean region, will allow to examine the performance of a whole building through a life-cycle approach (considering design construction, operation, maintenance, renovation and demolition phases), in order to improve its energy and environmental performances.

### About Arianna Dominici Loprieno

Arianna Dominici Loprieno is researcher at ENEA. Graduated in Environmental Engineering, she has been working at LCA and Ecodesign Laboratory of the Technical Unit for Environmental Assessment Models, Methods and Technologies (UTVALAMB) of ENEA since 2004.

Since then she has been involved in many activities aimed at reducing the environmental impact of processes and products such as application of LCA methodology, definition of environmental criteria for GPP of construction materials and elements, Industrial Ecology and the development of a sustainable approach to the management of industrial areas. At present, she is working on the MEID project and, on behalf of Italian Ministry for the Environment, she is involved in a technical working group on GPP of building materials and elements.



Rovena Preka  
ENEA Researcher, MEID project

## Prospects And Difficulties of The Establishment of Sustainable Industrial Areas in The Mediterranean

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**Rovena Preka, ekonomista i istraživač u italijanskoj agenciji ENEA, pored ekonomije diplomirala je i Mađunarodnu saradnju i zakonodavstvo održivog razvoja na Univerzitetu u Bolonji.**

Njen rad je uglavnom povezan sa temama održivog razvoja sa posebnim fokusom na sertifikaciju iz oblasti zaštite životne sredine, održivih poljoprivrednih praksi i održivih industrijskih područja. Radila je na brojnim međunarodnim istraživačkim projektima, od kojih je većina povezana sa Zapadnim Balkanom.

Trenutno je angažovana u projektu MEID finansiranom od strane EU i u kom ENEA ima vodeću ulogu.

**Rovena Preka će u Beogradu održati predavanje pod naslovom *Perspektive i teškoće uspostavljanja održivih industrijskih područja na Mediteranu*. Predavanje će biti fokusirano na rezultate SWOT analiza mediteranskih industrijskih zona koje su sprovedene u okviru MEID projekta.**

Ispitivanjem teškoća i potencijala upoznavanja sa elementima održivosti u industrijskim zonama, moguće je uspostaviti jedinstveni model održive industrijske zone na Mediteranu.

Analize koje su sprovedene zasnivaju se na tri stuba održivosti: životna sredina, ekonomija i društvo. Specifične teme koje su izdvojene uključuju zakonski okvir, pravila planiranja industrijskih zona (IA), upravljanje industrijskim zonama u skladu sa konceptom zaštite životne sredine, i infrastruktura i centralizovane usluge.

**Metodologija analize koja se često koristi u strateškom menadžmentu izdvojila je interne faktore, one koje industrijska zona može da kontroliše, i spoljašnje faktore, one koji su van kontrole industrijske zone (na primer, nacionalni i regionalni zakoni, tehničke norme, itd). Benefiti analize:**

- otkrivanje rizika i teškoća za implementaciju modela održivih industrijskih zona (SIA)
  - identifikacija vrhunskih SIA koncepata
- izdvajanje najboljih iskustava ili najboljih praksi održivih industrijskih zona (SIA)



The speech will focus on the results of the SWOT Analysis of the Mediterranean Industrial Areas performed within the MEID project. By investigating the difficulties and potentials of the introduction of sustainable elements in the industrial areas, it is possible to establish a joint Mediterranean Sustainable Industrial Area model.

The analysis has been developed taking into consideration the three pillars of sustainability: I) environmental, II) economical and III) social. The specific issues that have been tackled include legislative framework, rules for Industrial Area (IA) planning, environmental management of the IAs and infrastructures and centralized services. The analysis methodology which is frequently used in strategic management, has pointed out the internal factors, the ones that the IA can control, and the external factors, those that are outside the control of the IA (i.e. national and regional laws, technical norms, etc.).

**The analysis has been useful to:**

- Detect risks and difficulties in the implementation of a SIA model
- Identify the “state-of-the-art” of the SIA concept
- Determine the best experiences or Best Practice for SIAs

**About Rovena Preka**

**Rovena Preka is a researcher at the ENEA. She holds a degree in Business Economics, a Master degree in Economics and Cooperation and a Phd in International Cooperation and Sustainable Development Policies at the University of Bologna.**

Her research is mainly connected to sustainable development issues with a special focus on environmental certification, sustainable agriculture practices and sustainable industrial areas. She has worked on a number of international research projects, most of them linked with the Western Balkans area. Actually she is involved in the Mediterranean Eco-Industrial Development Project which is a EU funded project and sees ENEA as the Lead Partner.

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MEID – Mediterranean Eco Industrial Development

SIA – Sustainable Industrial Area



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Maria-Anna Segreto  
ENEA Researcher, MEID project

## Distributed Generation and Energy Efficiency as Tools For Achieving Energy Self-Sustaining Industrial Areas

Dan 3 • Day 3 / 25. februar • February 25<sup>th</sup>

**Maria-Ana Segreto je ekspert u oblastima energetske efikasnosti, energetskih postrojenja baziranim na obnovljivim izvorima energije, energetske procene i zakonodavnog okvira za energetske efikasnost u zgradama.**

Od 2004. godine radi na primnjenim istraživanjima u agenciji ENEA sa fokusom na nultu emisiju gasova sa efektom staklene bašte zgrada i nove efikasne tehnologije u industriji.

Njeno predavanje u Beogradu fokusiraće se na implementaciju programa energetski efikasnih unapređenja, kao i promocije i širenja principa štednje energije u industrijskim zgradama.

Ideja jeste korišćenje koncepta lokalne proizvodnje energije (distributed generation) i primena energetske efikasnosti kao alata za postizanje energetski samoodrživih industrijskih zona.



The speech will focus on the application of energy efficiency improvement programs and dissemination of energy conservation in the industrial buildings.

The goal is to use distributed generation and energy efficiency as tools for achieving energy self-sustaining industrial areas. The presentation will show new techniques and technologies that contribute to achieve this goal.

### About Maria-Anna Segreto

**Maria-Anna Segreto is an expert in energy efficiency, renewable sources plants, energy diagnosis and regulations on energy efficiency. She holds a degree in Civil Engineering with a specialization in energy efficiency in buildings.**

Since 2004 she works in applied research in Italian National Agency for New Technologies – ENEA with a focus in zero emissions buildings and new efficient technologies in industry. Her mainstream activity concerns the preparation of assessment protocols and guidelines for energy efficiency improvement measures in industry and public administration.

### ENEA na Konferenciji zelene gradnje Beograd 2012

Predavanja agencije ENEA održaće se u subotu 25. februara 2012. godine. Ulaz je slobodan za se posetioce Konferencije i studente koji se registruju.

### ENEA at Green Building Conference Belgrade 2012

ENEA Presentations will take place at Saturday, February 25<sup>th</sup> 2012. Entrance will be free for all the Conference visitors and registrated students.

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