

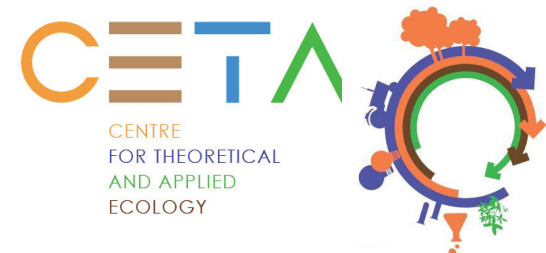


# Project ideas in progress in the green economy sector

WORKSHOP: "*The green economy: challenges and opportunities*"

Location: Centrale Idrodinamica, Porto Vecchio di Trieste

**5<sup>th</sup> December 2013**





## SMART ENERGY - Network of Excellence

### Partners

Lakeside Science & Technology Park GmbH (Au) – Project Lead Partner

CETA (It)

University of Udine (It)

CTR (At)

### Objectives

- 1) Connecting the scientific community and the enterprises
- 2) Indicating a roadmap of the technologies and instituting an advisory board
- 3) Realizing demonstrative projects with the aim of rendering accessible to the public the research results and the technological knowledge in the trans-boundary area



# CETA is

**no-profit Association funded in 1987**

**with legal status recognized by the Friuli Venezia Giulia Region in 1995**

**registered to the National Register of the Research by the Italian Ministry of Instruction, University and Research**

**member of CER – Research Bodies Coordination of Friuli Venezia Giulia instituted at Area Science Park of Trieste**

**Public bodies (University of Trieste, University of Udine, Province of Gorizia, Province of Pordenone, Municipality of Gorizia, Chamber of Commerce, Industry and Handicraft of Gorizia) and individual bodies are members of CETA**

# CONOSCENZA - KNOWLEDGE



Research engaging represents the most successful strategy to offer forefront solutions.

In this sense collaborations with international innovation and technological centers are developed

- Experimentation of production models for first, second and third-generation **biofuels**
- Research and development of low environmental impact **crops for energy purposes, wind energy, building integrated solar thermal energy**
- Validation of advanced and **innovative technologies**
- Cooperation among research centers in order to develop **international partnership** in the fields of energy, environment and sustainable development

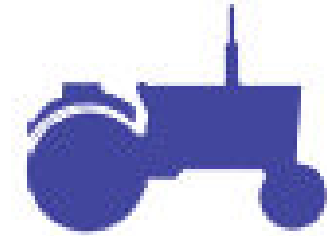
# ENERGIA - ENERGY



Developing models for decentralised energy production based on low environmental impact sources and energy efficiency

- Development of the most **suitable technology**
- Feasibility study, strengthen and weakness assessment, **technical support to planning activity**
- Bankability and **economic sustainability assessment**, business plan, fund raising and credit advice
- Planning of **sustainable management models** for the supplying chains

# TERRITORIO - TERRITORY



Planning and managing the territory to safeguard the environment and its local communities

- Strategic planning and programming in the sectors of Energy, Government of the Territory, management of sensitive ecosystems
- LCA, carbon/water footprint, environmental accounting models, cost-benefit analysis, multicriteria analysis
- Ecosystem service assessment
- Valorization and conservation of landscape, labeling, management of sensible ecosystems

# AMBIENTE - ENVIRONMENT



## Preserving the environment and natural resources as development tool

- **Re-qualification, re-naturalization and depollution** of contaminated areas adopting natural techniques (phytoremediation, bioremediation)
- **Low environmental impact technology adoption** for water treatment (constructed wetlands)
- Strategies finalized at the **reduction of waste production**, solutions for the biodegradable waste treatment and of public municipal green
- Creation of **greenways and re-naturalizations**



# Project ideas in progress in the green economy sector



# Eco-Industrial Park (EIP)

The concept of EIP is a sector industrial ecology,  
which draws analogies from natural ecosystems to industrial systems

An EIP is a clearly defined area where materials, energy, information  
exchange occur between various companies and actors.

Implementing an EIP can bring environmental, social and economic benefits.

Natural ecosystems	Industrial system	EIP
The flow of materials is closed	The flow of materials is linear	The flow of materials is closed
Energy is cascading (food chain)	Waste are produced and energy exploited	Waste and energy are usually recovered
Interaction and interdependence are emphasized	Independence and competition are emphasized	Increase of the competitiveness Reduction of the environmental impacts
They evolves through biology (case, natural selection)	They evolves through technology	They evolves towards industrial ecology models

# Types of EIP

## **Type 1: through waste exchanges**

Recovered materials are sold or given away by third party dealers to other forms or organizations

## **Type 2: within a facility**

Usually one-way exchange; it includes material or product exchanges within a single organization but different units

## **Type 3: among co-located firms in a defined industrial area**

It includes materials, waste or energy exchanges between organizations in close proximity

## **Type 4: among near-by firms not co-located**

Linking together existing businesses with an opportunity to fill in some new ones

## **Type 5: among firms organized across a broader region**

It includes exchanges in a broad spatial region and a larger number of firms



**Proposal has been applied in the framework of the Alpine Space of the European Commission**

# Environmental impacts of products

The EU strategy by 2050 foresees the «low consumption of natural resources economy» (i.e. green economy).

The increased competitiveness of the sustainable products will be based on the lower consumption of natural resources through two mechanisms:

- higher costs of the natural resources (e.g. blue water)
- pollution tax for the polluting products.

In this direction some parameters have been developed:

- **LCA (life cycle assessment)**: compilation and evaluation of the inputs, outputs and the potential environmental impacts of a product system through its life cycle
  - Methodology: UNI EN ISO 14040:2006 and 14044: 2006
- **PEF (product environmental footprint)**: quantification of the impacts for the most relevant impact categories and the additional environmental information considered necessary to be reported
  - Methodology: pilot phase of the EC, based on the LCA methodology
- **CFP (carbon footprint of a product)**: quantification of the impacts of a product considering only the impact category related to the effect on the climate
  - Methodology: UNI ISO/TS 14067: 2013
- **WFP (water footprint of a product)**: quantification of the impacts of a product, considering only the impact category related to the consumption of blue water
  - Methodology: UNI ISO/TS 14046



# Projects in progress



## **GOVERNEE - Good Governance in Energy Efficiency** ([www.governeeproject.eu](http://www.governeeproject.eu))

- **Partners**

Municipality of Hódmezővásárhely (Hu), Municipality of Quedlinburg (De),  
Administrative District of Burgenlandkreis (De), Metropolitan District of Prague 11 (Cz),  
Municipality of Bologna (It), **CETA** (It), **CERE** (At)

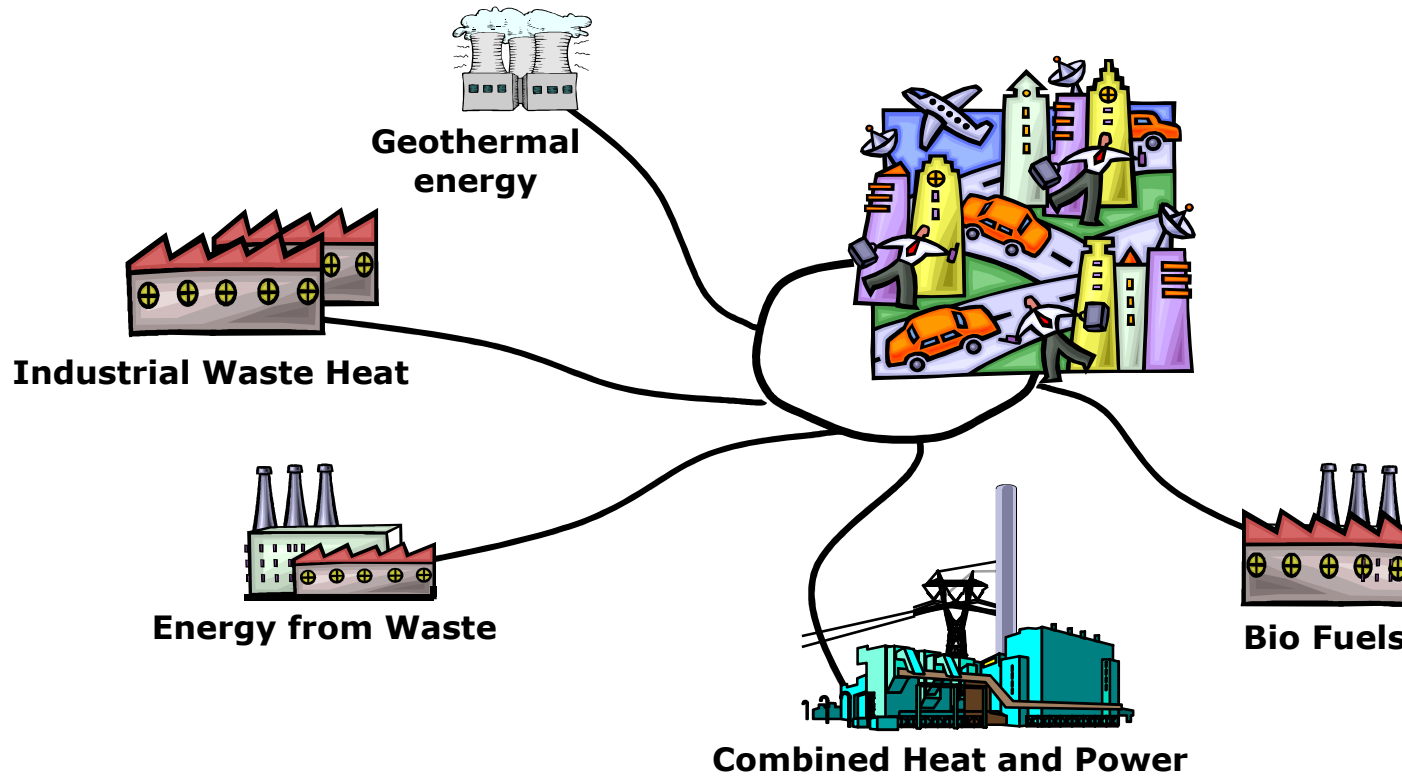
- **Objectives**

- Guidelines for the policy decision makers regards energy efficiency and renewable energy sources in public and historic buildings
- Pilot projects: renewable energy sources and energy efficiency measures
- Training of policy decision makers
- Divulcation events: energy days, local focus group, permanent showroom



GovernEE

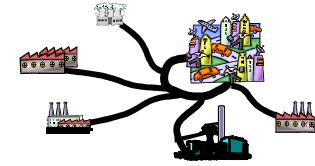
# GovernEE project: study visit district heating in Goteborg



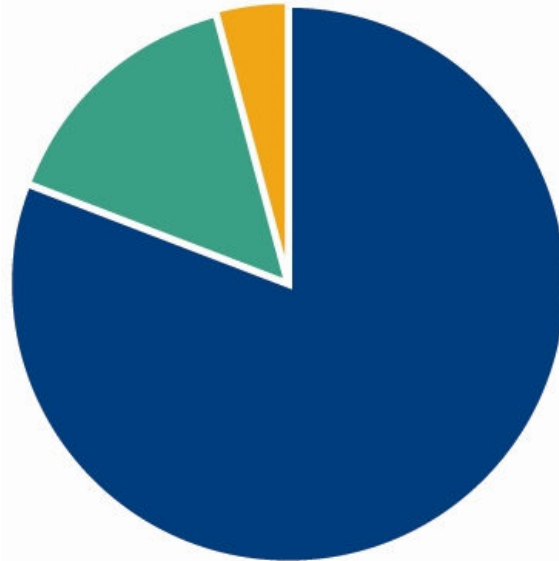
This project is implemented through the CENTRAL EUROPE Programme co-financed by the ERDF.



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## FUEL FOR DISTRICT HEATING PRODUCTION 2008



● Waste heat 81%

(waste heat includes heat from:

Refuse incineration 27%

Refineries and other industry: 30%

Electricity production: 19%

Wastewater: 5%)

● Renewable resources 15%  
(biomass and renewable electricity)

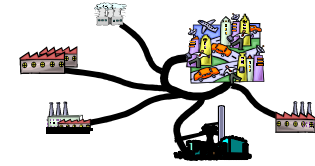
● Fossil resources 4%  
(oil, fossil electricity and natural gas)

This project is implemented through the CENTRAL EUROPE Programme co-financed by the ERDF.



GovernEE

## Results



- 60% of the thermal demand is supplied by the district heating system (of which, 81%, which means in absolute terms the 48% of the total thermal demand of Goteborg is supplied by WASTE HEAT)
- since 1975: 90% of CO2 emission have been cut
- 22.000 m pipeline

This project is implemented through the CENTRAL EUROPE Programme co-financed by the ERDF.





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DEVELOPMENT FUND

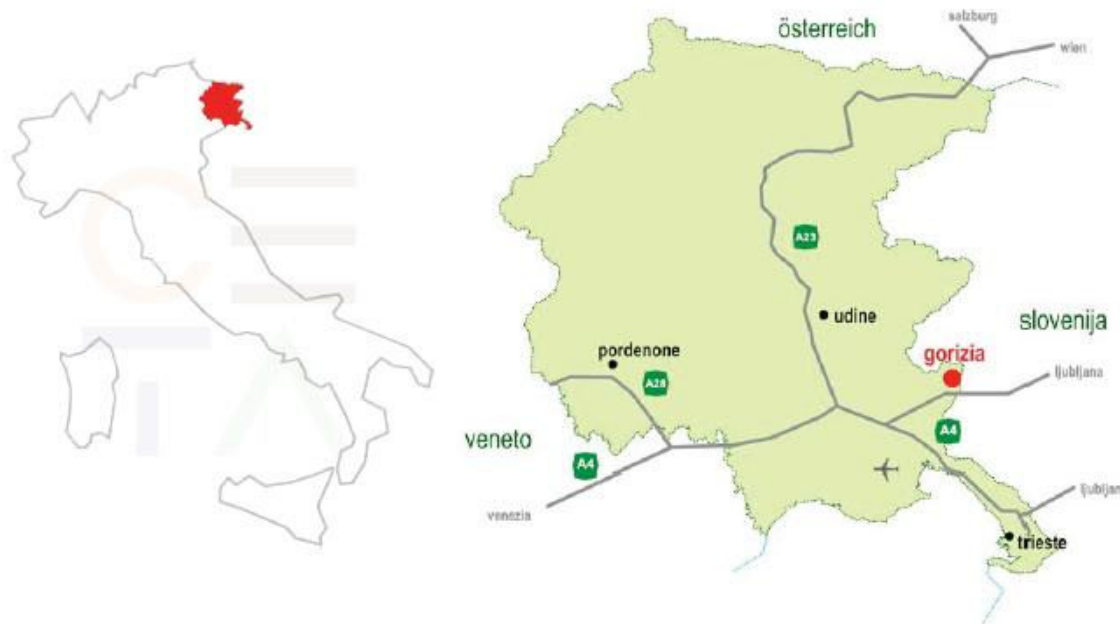
## **GRENNET - Promoting the ecological network in the European Green Belt**

### Partners

Association of Rural Development of Thuringia (De), BUND Bavaria - Projekt Office Central European Green Belt (De), Austrian Nature Protection Institute Styria (At), Ametyst - Environmental Protection Association (Cz), REC - Regional Environment Centre (Sk), University of Applied Sciences Erfurt (De), University of Natural Resources and Applied Life Sciences (At), Nature park Gorico (Si), Austrian League for Nature Conservation Lower Austria (At), Regional Development Agency Burgenland (At), CETA (It)

### Objectives

- 1) Politics and strategies for sustaining the conservation and valorization of the areas subjected to military servitude along the Iron Curtain
- 2) Pilot projects in 5 areas belonging to the Green Belt of Central Europe



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