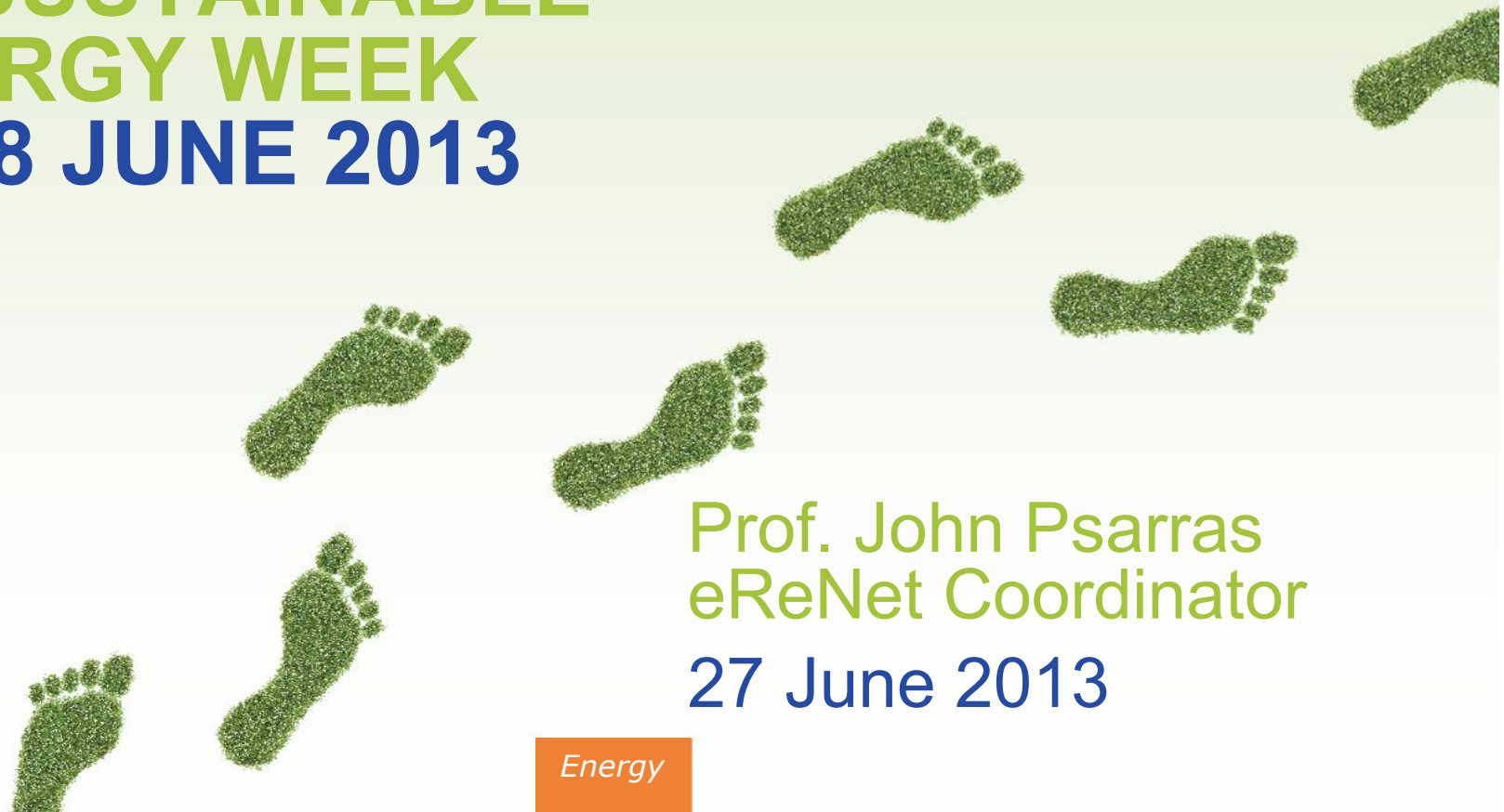




SUSTAINABLE ENERGY  
WEEK 24 - 28 JUNE 2013

# EU SUSTAINABLE ENERGY WEEK 24-28 JUNE 2013



Prof. John Psarras  
eReNet Coordinator  
27 June 2013

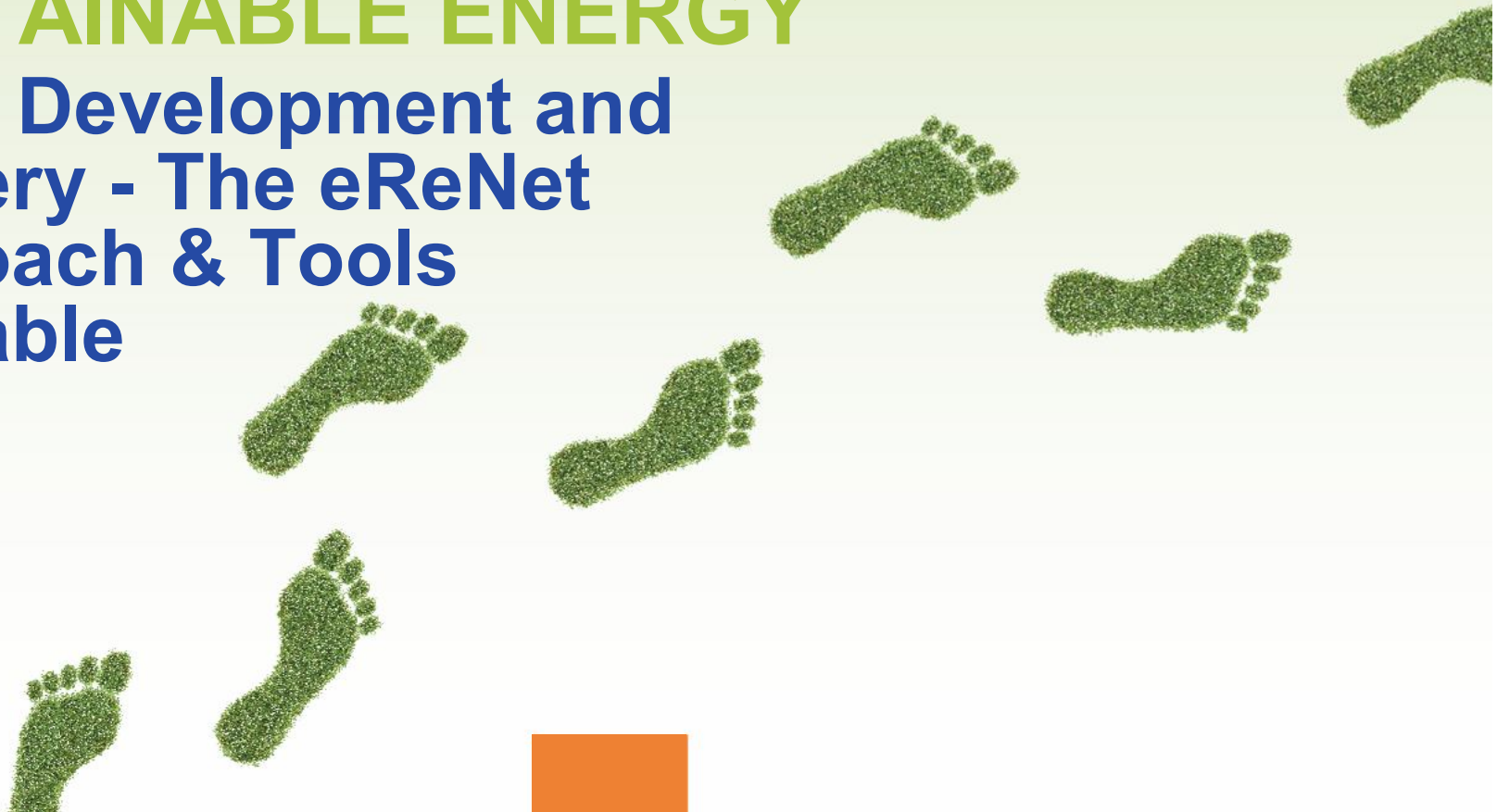
Energy



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# LOCAL LEADERSHIP IN SUSTAINABLE ENERGY

## SEAP Development and Delivery - The eReNet Approach & Tools Available



## Outline

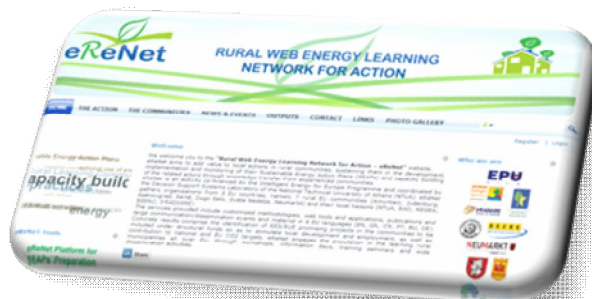
- Overview;
- eReNet Vision;
- Adopted Approach;
- Engagement & Training of Local Actors;
- eReNet Tool for SEAPs' Development;
- Web Application;
- Expected Results;
- Conclusions.



## Overview (1/2)

- Rural Web Energy Learning Network for Action (eReNet);
- Under the Intelligent Energy for Europe Programme, managed by the Executive Agency for Competitiveness and Innovation;
- **Duration of Action:** 21/06/2011 – 20/12/2013;
- **Coordinator:** National Technical University of Athens (NTUA);

eReNet awarded with  
the Energy Globe  
Award Greece



Website:

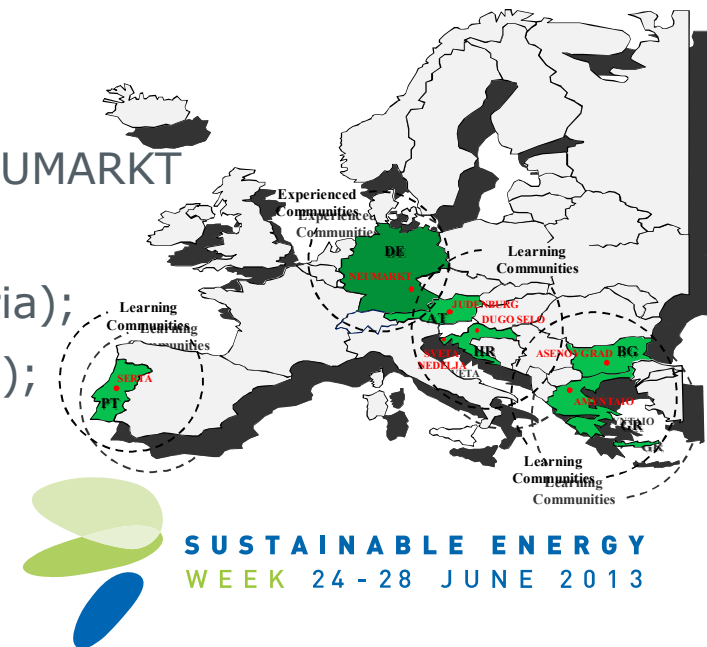
<http://erenet.epu.ntua.gr>



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## Overview (2/2)

- National Technical University of Athens – NTUA (Greece);
- Energy Agency Upper Styria – EAO (Austria);
- North-West Croatia Regional Energy Agency – REGEA (Croatia);
- Black Sea Energy Research Center – BSERC (Bulgaria);
- IrRADIARE, Ltd – IrRADIARE (Portugal);
- Municipality of Amyntaio – AMYNTAIO (Greece);
- Town of Neumarkt (in the upper Palatinate) – NEUMARKT (Germany);
- Asenovgrad Municipality – ASENOVGRAD (Bulgaria);
- Municipality of Judenburg – JUDENBURG (Austria);
- Sertã City Council – CM SERTÃ (Portugal).



## eReNet Vision (1/2)

### Rural Communities



**Energy Sustainable  
Rural Communities**

- Inhabited by a large amount of Europe's population, while covering 90% of Europe's land surface;
- Generate 45% of gross added value in EU-27 and 53% of the employment;
- Possess a vast potential for the realization of Renewable Energy & Rational Use of Energy (RES/RUE) activities;
- Fewer rural regions' adhesion to the Covenant of Mayors (CoM) initiative;
- Face particular challenges as regards growth, jobs and sustainability, situation that is being aggravated by the financial and economic crisis.

## eReNet Vision (2/2)

- Support CoM and rural communities' Sustainable Energy Action Plans (SEAPs) through knowledge transfer and capacity building;
- Socialize the existing tools and methodologies for SEAPs' development and monitoring;
- Promotion of RES/RUE activities in rural areas by supporting promising initiatives to be included under structural funds;
- Linking energy actors at local and EU level;
- Creation of rural learning municipalities on sustainable energy.



## Adopted Approach



## Levels of Tutoring & Networking Local Authorities





# Engagement & Training of Local Actors (1/3)

## Training Workshops



- Capacity building of the related actors via interaction and participatory processes.
- Knowledge transfer from other rural communities in the country (e.g. panel discussion, field visits) is essential ⇒ Added value to local actions and the importance of local problems in the rural communities.



## Engagement & Training of Local Actors (2/3)

### Public Consultation Meetings

- The local authorities and stakeholders can co-create the energy vision for the territory and the ways for its implementation, and invest financial and human resources towards this direction;
- The stakeholders' lack of contribution is an important barrier. New approaches on triggering their interest should be adopted;
- Emphasis on the need for targeted interventions in the agricultural sector.



## Engagement & Training of Local Actors (3/3)

### Training Seminars & Material

Diffuse the idea and modus operandi of the SEAPs in other communities with similar characteristics, assuring thus the wider impact of the results;

### Information Days

Advice on planning and funding, as well as local and regional energy companies and local investors in order to attract investors and obtain finance for RES/RUE projects.



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## eReNet Tool for SEAPs' Development (1/5)

### Key Parameters for Rural Communities

- Increased energy consumption in the Agricultural/Fishery/Forestry sector;
- Less significant role of industry and the usually small contribution of public transport;
- Heavier reliance on private transportation;
- Smaller number of engaged stakeholders, which allows for a different decision making process;
- Different options available for RES/RUE technologies;
- The rural communities are not served by good infrastructure, such as lack of grids (e.g. natural gas), older and less efficient buildings.

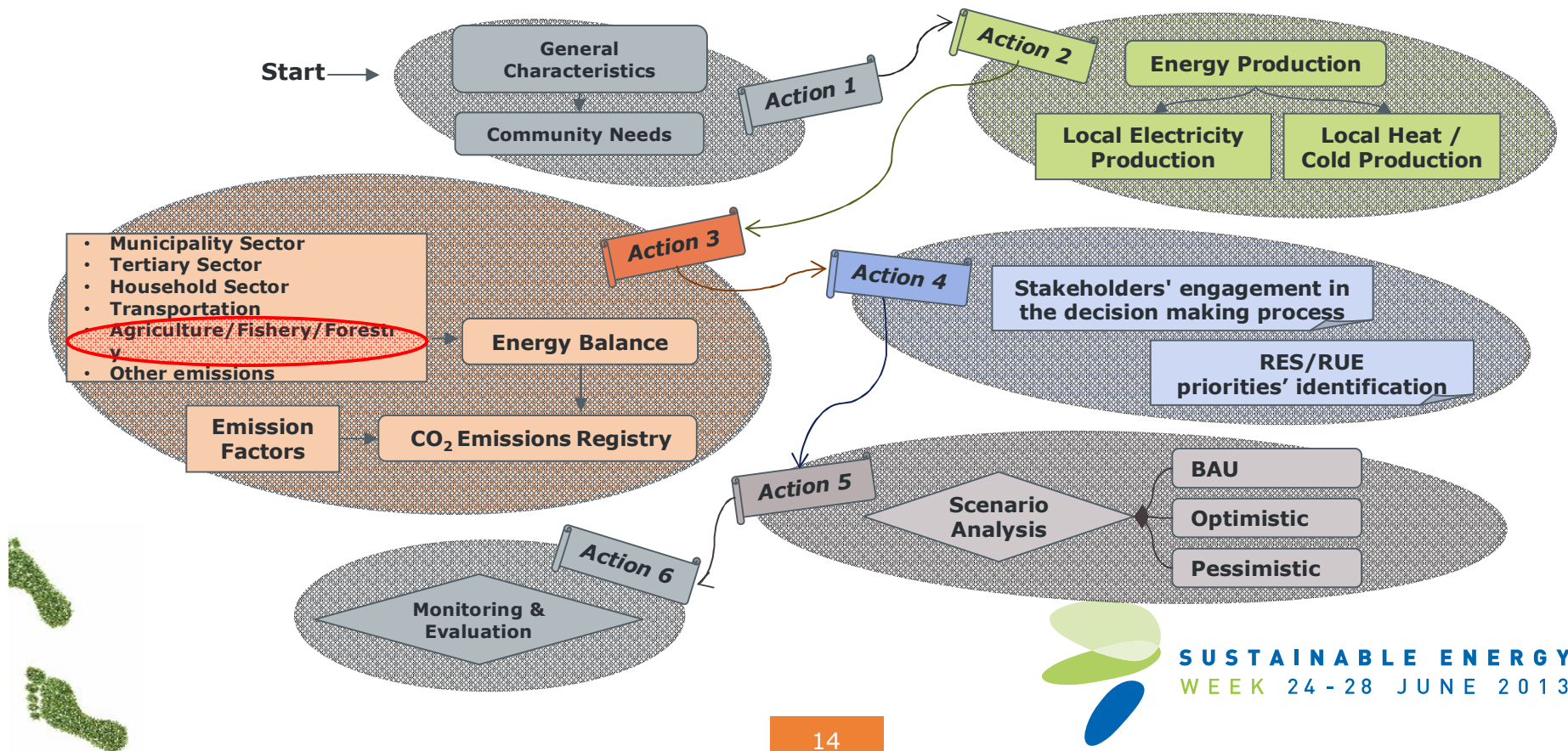
## eReNet Tool for SEAPs' Development (2/5)

### Customized Methodology

- Based on the Covenant of Mayors (CoM) guidelines and the available SEAP methodologies and tools developed in the past, customized to the rural communities' characteristics;
- Separate study of the energy consumption and the proposition of targeted actions/ measures within the framework of the SEAP;
- The relevant consumptions are included in the related sectors (Tertiary, Transport) of the submitted Baseline Emissions Inventory Table, according to the CoM guidelines.

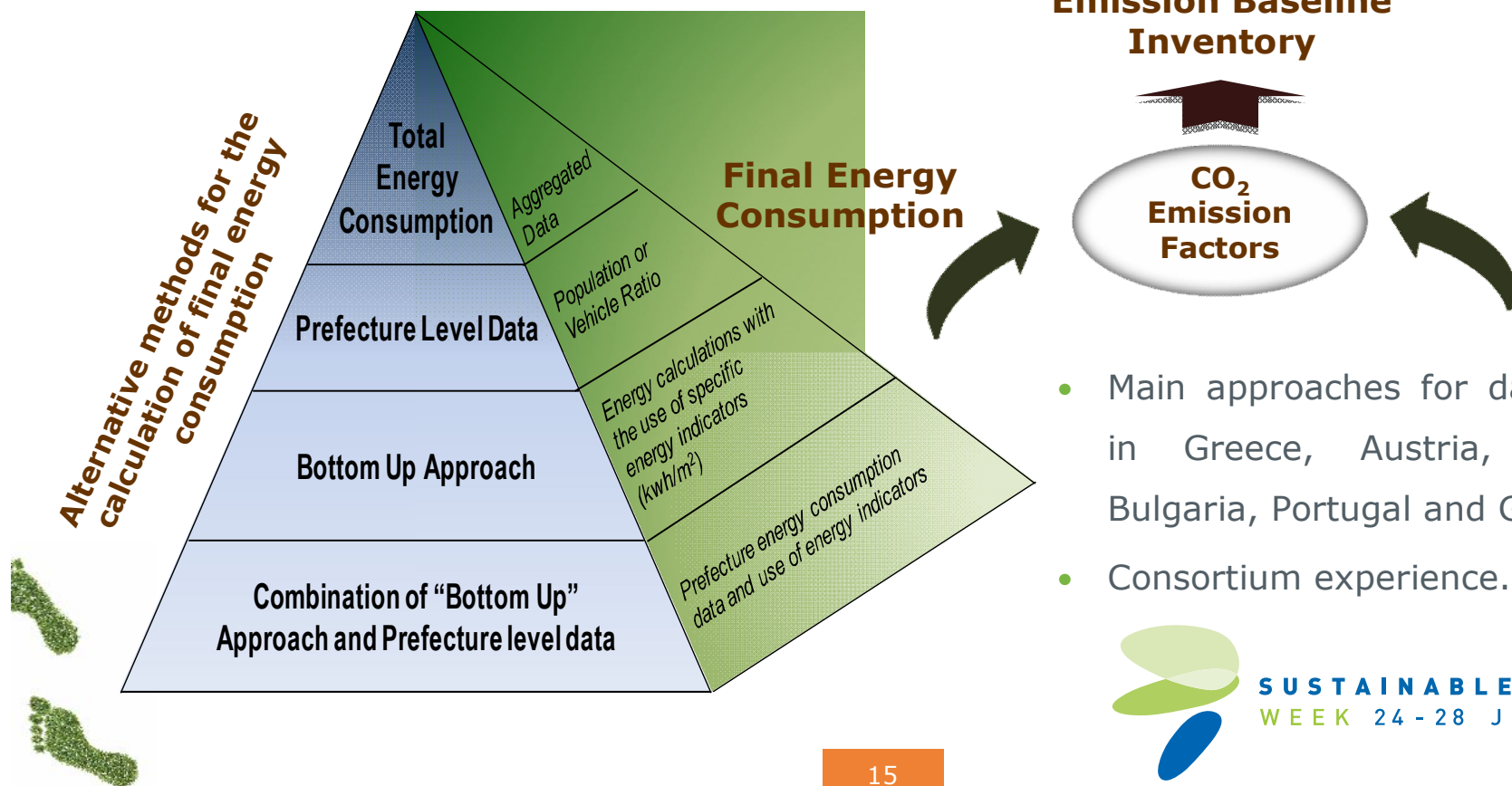
# eReNet Tool for SEAPs' Development (3/5)

## General Philosophy



# eReNet Tool for SEAPs' Development (4/5)

## Baseline Emission Inventory



## eReNet Tool for SEAPs' Development (5/5)

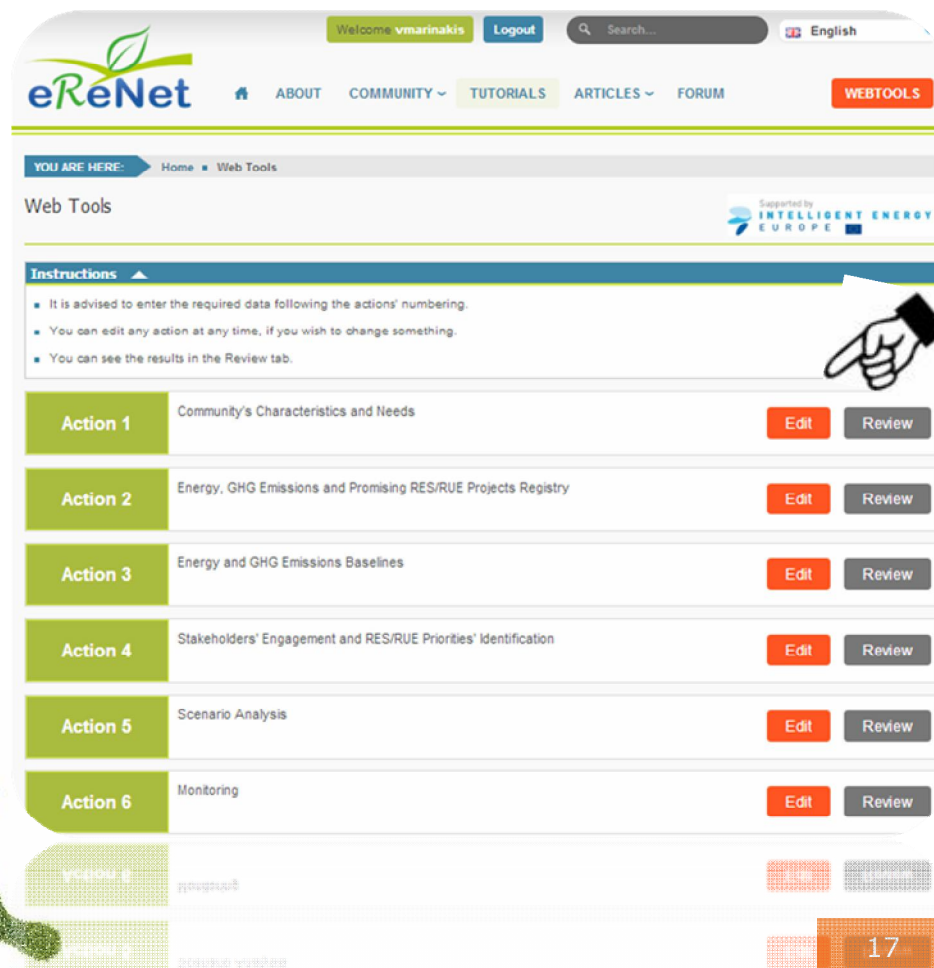
### Offering

- Free for use for all registered users;
- Facilitation of the required procedures for the development and monitoring of a SEAP;
- Available in 6 languages (En, Gr, Hr, De, Pt, Bg);
- Guides the user through all SEAP development steps, one by one.





## Web Application (1/3)



The screenshot shows the eReNet web application interface. At the top, there is a navigation bar with the eReNet logo, a search bar, and a language selector set to English. Below the navigation bar, there is a breadcrumb trail: "YOU ARE HERE: Home > Web Tools". The main content area is titled "Web Tools" and features a section for "Instructions" with three bullet points: "It is advised to enter the required data following the actions' numbering.", "You can edit any action at any time, if you wish to change something.", and "You can see the results in the Review tab." Below the instructions, there is a table of actions, each with an "Edit" button and a "Review" button. A hand icon points to the "Edit" button of Action 1. The table lists the following actions:

Action	Description	Edit	Review
Action 1	Community's Characteristics and Needs	Edit	Review
Action 2	Energy, GHG Emissions and Promising RES/RUE Projects Registry	Edit	Review
Action 3	Energy and GHG Emissions Baselines	Edit	Review
Action 4	Stakeholders' Engagement and RES/RUE Priorities' Identification	Edit	Review
Action 5	Scenario Analysis	Edit	Review
Action 6	Monitoring	Edit	Review

At the bottom of the page, there is a footer with the text "17" and a small logo.

Available at:

<http://erenet-tools.epu.ntua.gr>

Editing the necessary  
community data

Reviewing the results obtained  
from the inserted data

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# Web Application (2/3)

## Final Energy Consumption

### Alternatives Methods

FINAL ENERGY CONSUMPTION														
BUILDINGS, EQUIPMENT / FACILITIES AND INDUSTRIES														
Electricity	Heat/Cold	Fossil Fuels								Renewable Energies				Total
		Natural Gas	Liquid Gas	Heating Oil	Diesel	Gasoline	Lignite	Coal	Other	Plant Oil	Biofuel	Other Biomass	Solar Thermal	
<b>Municipal buildings, equipment / facilities</b>														
4278	-	0	-	738	0	-	-	-	-	-	-	-	-	-
<b>Tertiary (non municipal) buildings, equipment / facilities</b>														
17121	0	0	-	7038	0	-	-	-	-	-	-	-	-	-
<b>Residential buildings</b>														
22810	0	0	-	29524	0	-	-	-	-	-	-	-	-	-
<b>Municipal public lighting</b>														
1984	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Industries (excluding industries involved in the EU Emission trading scheme - ETS)</b>														
0	0	0	-	0	0	0	-	-	0	-	0	0	0	0
<b>Subtotal buildings, equipments/facilities and industries</b>														
46193	0	0	0	37300	0	0	0	0	0	0	16631	2605	0	102729
TRANSPORT														
Electricity	Heat/Cold	Fossil Fuels								Renewable Energies				Total
		Natural Gas	Liquid Gas	Heating Oil	Diesel	Gasoline	Lignite	Coal	Other	Plant Oil	Biofuel	Other Biomass	Solar Thermal	
<b>Municipal Fleet</b>														
0	-	0	0	-	908	99	-	-	-	-	0	-	-	-
<b>Subtotal transport</b>														
0	-	0	0	-	908	99	-	-	-	-	0	-	-	-
<b>Subtotal final energy consumption</b>														
46193	0	0	0	37300	908	99	0	0	0	0	16631	2605	0	102729

**Tertiary (Non Municipal) Buildings, Equipment / Facilities**

Choose Your Method

- Enter the total energy consumption Total energy consumption
- Enter the energy consumption at district level. Total energy consumption is then calculated based on municipal and district inhabitants numbers provided Energy consumption at district level
- Enter the energy consumption of each item individually. Total energy consumption is calculated automatically. Bottom up approach
- Combination of the energy consumption at district level and bottom up approach: Enter district level data for various categories. Total energy consumption is then calculated. Combination

# Web Application (3/3)

## RES/RUE Measures & Actions

Stakeholders **RES/RUE Best Practices**

Select Best practises View Projects

**Instructions**

- The user can choose among the RES/RUE best practices database and modify the related savings etc).
- The promising RES/RUE projects identified before (Action 2, Step 3) are presented at the projects in Action 2 (Step 3), you can press the "Load promising projects" button, but any

**View Projects - Add financial evaluation extra fields and functions to calculate**

Inventory Year CO2 emissions:	CO2 2015 targets:		CO2 2020 targets:	
	Total CO2 reduction:	% CO2 reduction:	Total CO2 reduction:	% CO2 reduction:
0 tn CO2	0 tn CO2	0%	10955 tn CO2	0%

**BUILDINGS, EQUIPMENT / FACILITIES & INDUSTRIES**

**Establishment of a Department for Rural Development in the Municipality**

Category	Implementation Start	Implementation End	Expected Energy Production (MWh)	Expected CO2 reduction per measure (tn CO2)	Estimated Costs (€)	Average energy price (€/MWh)	Duration of investment (years)	Average operation and maintenance costs (€/year)	Discount rate (%)	Subsidy (%)
Agrict	2013	2020	1940	1713	500000	50	10	5000	5	0
Net Present Value - NPV (€)			Internal Rate of Return - IRR (%)			Discounted Payback Period - DBP (year)				
210400			13			6.5				

**Facilities**


### Select Best practises

Search Filters: (clear all filters)

Category Type Country Scale Community

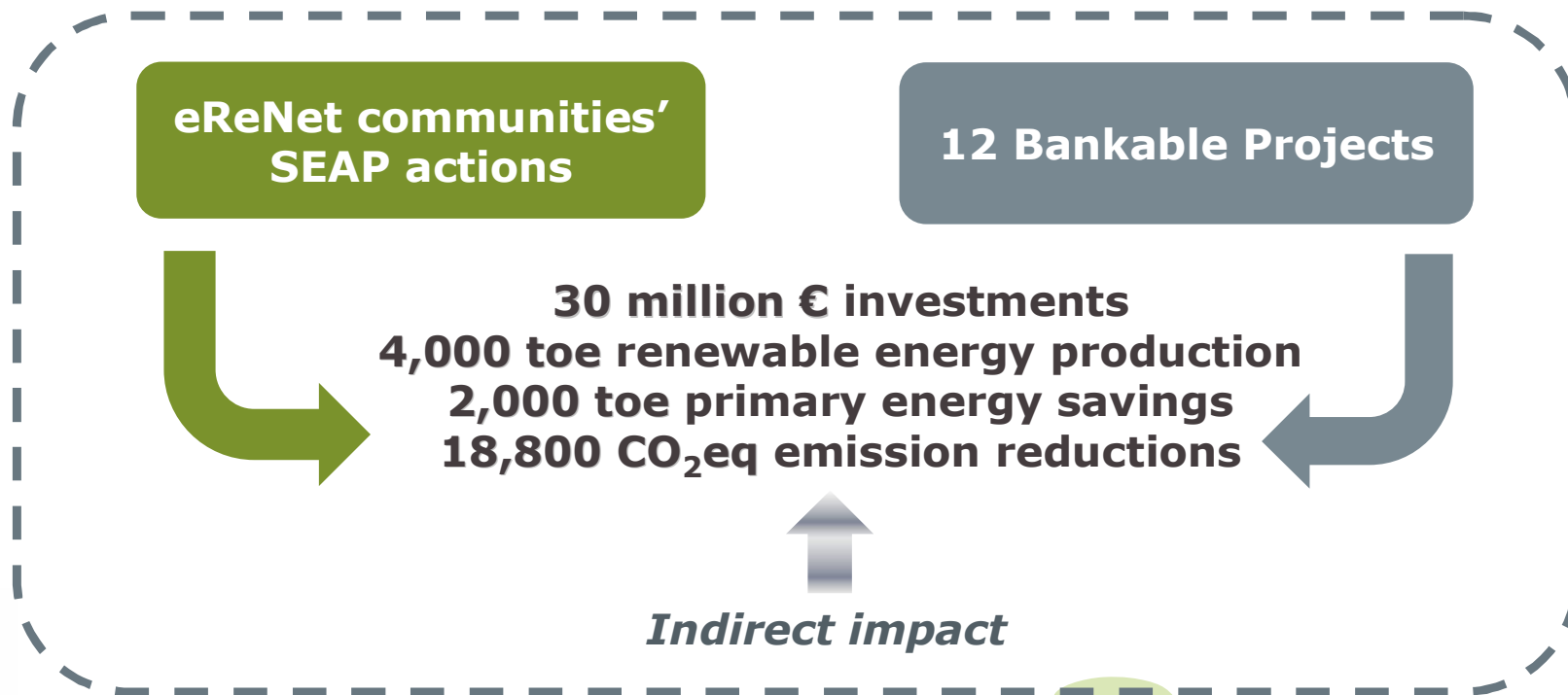
## RES/RUE Best Practices

**System of Emission Control by Wyeth Nutritionals Ireland**

	Type:	Biomass Heat Supply	Category:	RES
	Installed Capacity:	-	Energy Produced/Saving:	-
	Cost:	853 238 €	Country:	Ireland
	Community:	Urban	Scale:	Small scale project
CO2 Reductions:				
<a href="#">Select</a> <a href="#">View Details</a>				

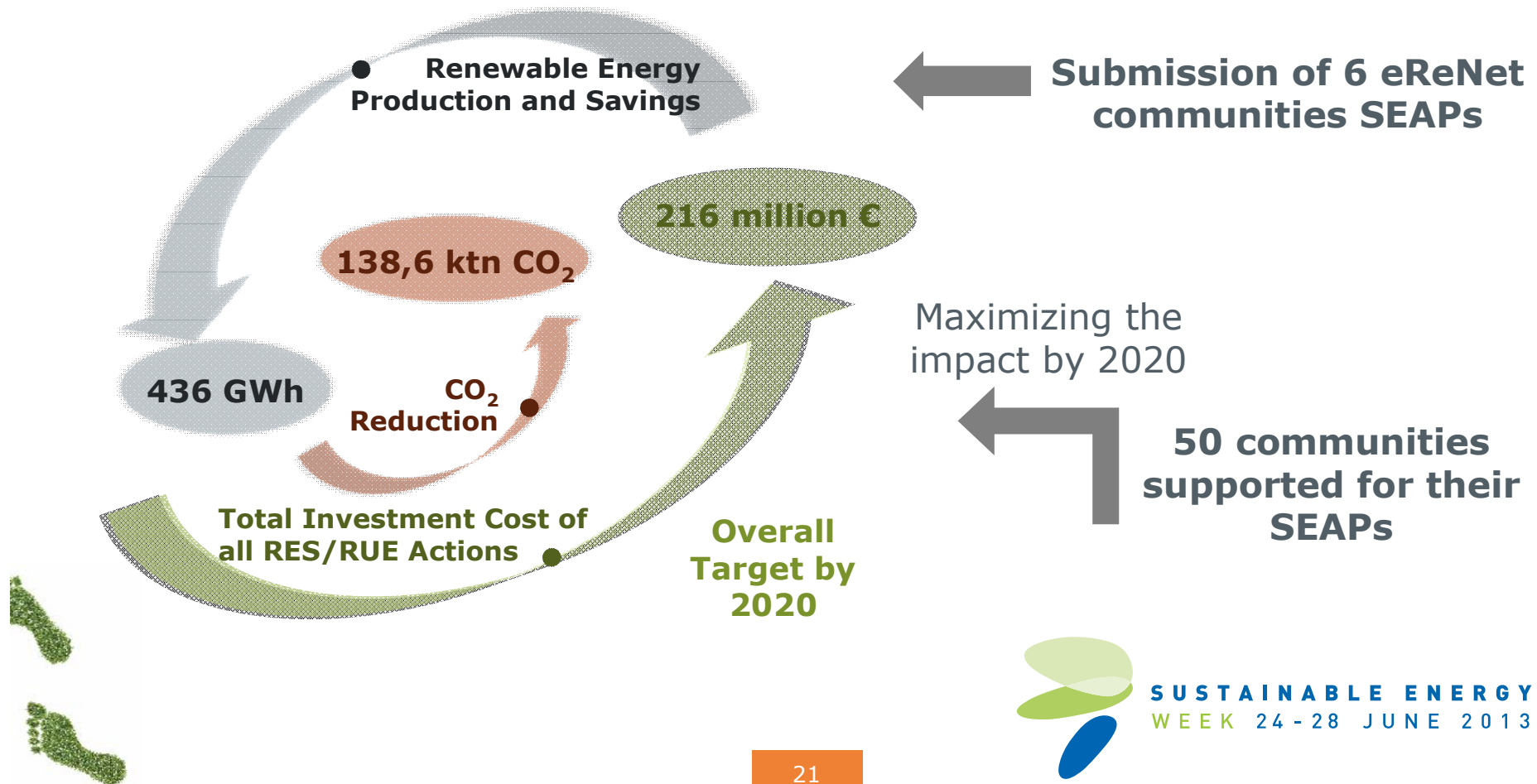
## Expected Results (1/2)

*Target within the project duration*

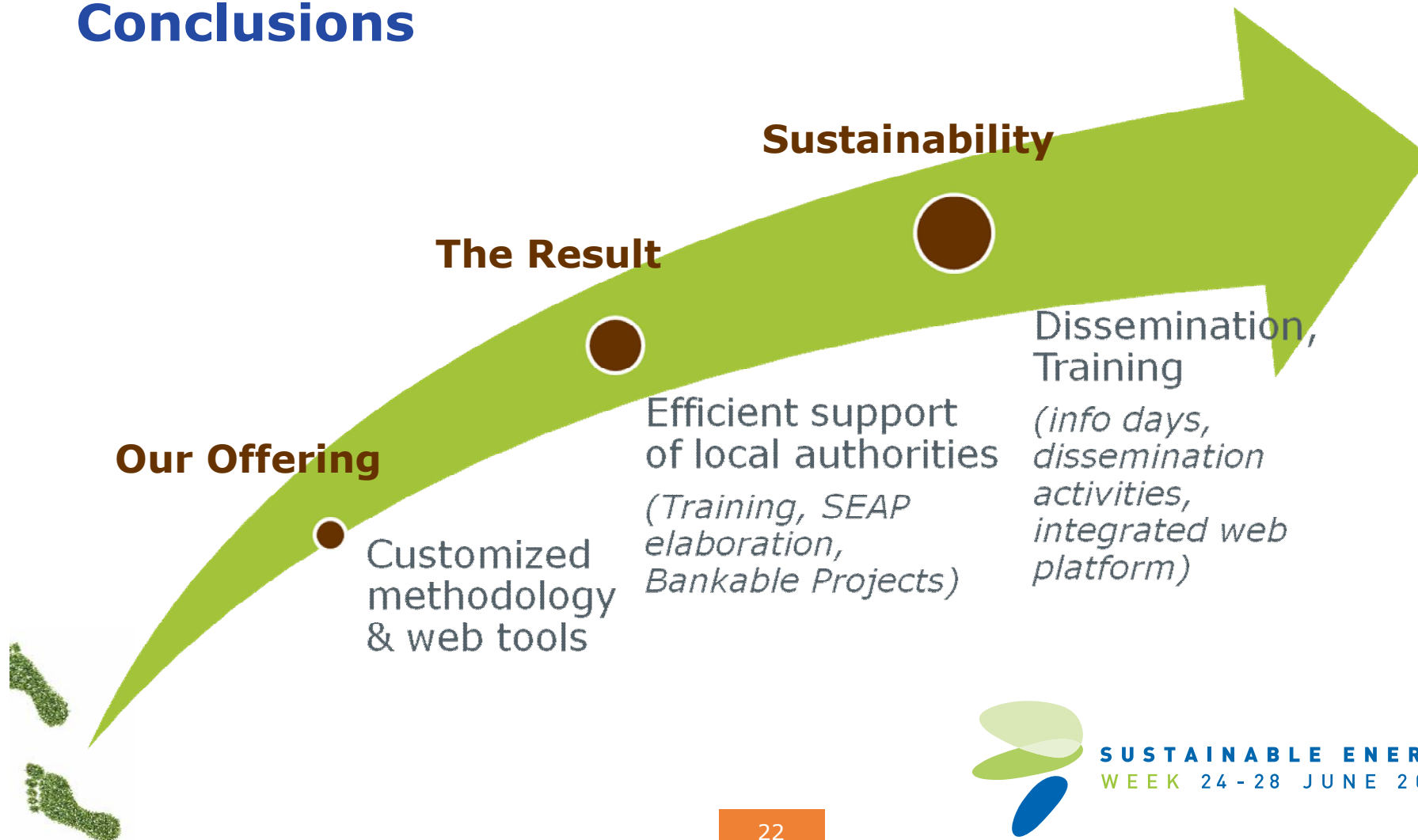


*Indirect impact*

## Expected Results (2/2)



## Conclusions





Thank you for your attention!

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Visit us at: <http://erenet.epu.ntua.gr>

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