

# Proceedings from Climate Change Seminar

Helsinki 18-19 January 2010

# Content

• Agenda



- Plenary sessions



- PowerPoint slides presented (1-5)



# Agenda

# Agenda

## Monday 18 January

- 9:00-9:30 Registration and Coffee
  - 9:30-9:35 **Welcome words** - *Laura Höijer*, Finnish ministry of the Environment, Research Director
  - 9:35-9:45 **The aim of the seminar** - *Pekka Harju-Autti*, Finnish ministry of the Environment, Senior Advisor, Life+ National Contact Point
  - 9:45-10:05 **Climate Change and the new Commission. LIFE+ and Climate change challenges**  
*Timo Mäkelä*, European Commission, DG Environment, Director of Directorate E – International Affairs
  - 10:05-10:50 **Current situation after Copenhagen. Main challenges coming from science to practice, main gaps. How this instrument helps fighting the Climate Change?**  
*Martin Petrtýl*, European Commission, DG Environment, LIFE Environment & Eco-Innovation Unit, Thematic correspondent for Energy and Climate Change
- Questions and answers
- 10:50 -12:15 Lunch (at the same time Press Event)
  - 12:15 –17:00 **Presentations of the LIFE+ climate change projects:** Idea here is, that everyone gets a good overview on what kind of climate change projects are on-going in LIFE+. No need to go into technical details, so each presentation will last maximum 8 minutes (max. 12 pwp-slides).
  - Coffee break included
  - 17:00 - Free Programme. Our suggestions for the evening:
  - 18:30 - Cocktail in the Finnish Ministry of the Environment
  - 20:00 - Skating in the outdoor ice rink nearby



# Agenda

## Tuesday 19 January

- 9:00 - 9:10 **What should be achieved in this workshop?** Pekka Harju-Autti (Finnish ministry of the Environment) ;  
Martin Petrtýl (European Commission)
- 9:10 - 10:45 **Workshop discussions, part I**

Group 1	Group 2	Group 3	Group 4
<b>Local planning and decision-making</b> Group Chairman: Björn Grönholm (CHAMP)	<b>Communication and dissemination</b> Group Chairman: Juha A Karhu (CCCRP)	<b>Impacts and adaptation</b> Group Chairman: Martin Forsius (VACCIA)	<b>Urban environment, Local construction, Energy</b> Group Chairman: Susanna Kankaanpää (JULIA2030)

### Questions, which could be answered by all participants in the Workshop part I:

1. Adaptation and mitigation of Climate Change after Copenhagen 2009 - How should it be reflected in the EU/World Climate Change Policy? Do you have any specific proposals?
2. Any comments to the ideas presented by the keynote speaker?
3. Climate Change and LIFE+ - are there any gaps, which LIFE+ should cover? Are there any new specific areas where LIFE+ should focus in your Group's field? Are there any specific projects, which should be implemented in LIFE+ or with help of another financial instruments?
4. What would you emphasize in the future programme after 2013 also with regard to 20,20,20 policy objectives? (Programme period 2014-2020)
5. Are we doing some mistakes in Life+? Is the scientific knowledge of Climate Change sufficient for demonstrating in LIFE+?
6. What do you think about possible two-phase selection process of LIFE+? Would it help you in the project preparation?
7. Other?

# Agenda

## Tuesday 19 January

Group 1	Group 2	Group 3	Group 4
<b>Local planning and decision-making</b> <ul style="list-style-type: none"><li>• taking local conditions into account</li><li>• examples of good participatory decision making</li><li>• from local to creating EU-effect?</li></ul>	<b>Communication and dissemination</b> <ul style="list-style-type: none"><li>• using web tools</li><li>• successful communication cases</li><li>• how to measure awareness raising?</li><li>• how to make projects truly more 'European'?</li></ul>	<b>Impacts and adaptation</b> <ul style="list-style-type: none"><li>• knowledge gaps in adaptation</li><li>• uncertainties in the scientific knowledge and extreme weather events</li></ul>	<b>Urban environment, Local construction, Energy</b> <ul style="list-style-type: none"><li>• Local construction</li><li>• Other challenges for urban environment: transportation etc.</li><li>• Energy</li></ul>

13:45-14:00 Coffee break

14:00-15:15 **Plenary session + discussion**

15:15-15:30 **Concluding words:** Martin Petrtýl (European Commission).  
**Closing of the Seminar:** Pekka Harju-Autti (Finnish ministry of the Environment).



# Participants



Group	Project	Country	Person	Organisation	Full name of the project
	n/a	FI	Timo Mäkelä	European Commission	
	n/a	CZ	Martin Petrtýl	European Commission	
	n/a	FI	Laura Höijer	Ministry Of The Environment, Finland	
	n/a	FI	Pekka Harju-Autti	Ministry Of The Environment, Finland	
	n/a	FI	Jaana Nuorteva	Ministry Of The Environment, Finland	
	n/a	FI	Ritva Illman	Ministry Of The Environment, Finland	
	n/a	FI	Erkki Erähonka	Ministry Of The Environment, Finland	
	n/a	FI	Hanna Aho	Ministry Of The Environment, Finland	
3	ACT	IT	Marco Cardinaletti	Municipality of Ancona	Adapting to climate change in Time
3	AdaptFor	GR	Vassiliki Chrysopolitou	The Goulandris Natural History Museum /	Adaptation of forest management to climate change in Greece
1	AdaptFor	GR	Dimitris Papadimos	Greek Biotope/Wetland Centre	
1	AGRICARBON	ES	Emilio Gonzales-Sanchez	Asociacion Española Agricultura de Conservacion	Sustainable agriculture in Carbon arithmetics
3	AGRICARBON	ES	Oscar Veroz-Gonzalez	Asociacion Española Agricultura de Conservacion	
5	BIOGRID	ES	Angel Maria Gutierrez	Naturgas Energia Distribution, s.a.	Biogas Injection into natural gas grid and use as vehicle fuel by upgrading it with a novel CO2 capture and storage technology
5	BIOGRID	ES	Asuncion Ortiz	Naturgas Energia Distribution, s.a.	
5	BIOGRID	ES	Rafael Careaga	Naturgas Energia Distribution, s.a.	
	Boreal Peatland Life	FI	Mikko Tiira	Metsähallitus	Restoring the Natura 2000 network of Boreal Peatland Ecosystems "Boreal Peatland Life"
	BIOTAGENE	EE	Madis Metsis	Tallinn University of Technology	Elaboration of novel metagenomic method for environmental monitoring
3	BOSCOS	ES	Agnès Canals Bassedas	Agència Menorca Reserva de Biosfera	gestion Forestal sostenible de Menorca en un contexto de cambio climatico
1	CARBOMARK	IT	Silvia Stefanelli	Friuli Venezia Giulia region	Improvement of policies toward local voluntary carbon markets for climate change mitigation
1	CARBOMARK	IT	Elena Dalla Valle	University of Padua	
3	CATERMASS	FI	Kari-Matti Vuori	SYKE	Climate Change Adaptation Tools for Environmental Risk Mitigation of Acid Sulphate Soils
2	CCCRP	FI	Juha Karhu	Ilmatieteen laitos	Climate Change Community Response Portal
2	CCCRP	FI	Tapio Kytö	Ilmatieteen laitos	
2	CCCRP	FI	Hanna Niemi-Hugaerts	Ilmatieteen laitos	
2	CCCRP	FI	Kalevi Luoma	Kuntaliitto	
1	CHAMP	FI	Pekka Salminen,	Union of Baltic Cities	Climate Change Response through Managing Urban Europe-27 Platform
1	CHAMP	FI	Björn Grönholm,	Union of Baltic Cities	
2	CHAMP	DE	Esther Kreutz	Union of Baltic Cities	
1	CHAMP	FI	Majja Hakanen	Kuntaliitto	
1	CHAMP	FI	Lotta Mattson	Kuntaliitto	
4	CHAMP	FI	Anu Kerkkänen	Kuntaliitto	

Group	Project	Country	Person	Organisation	Full name of the project
1	CHAMP	DE	Hannah Kegel	ICLEI - Local Governments for Sustainability European Secretariat	
2	CLEANTRUCK	S	Björn Hugosson	Environment and Health Administration	CLEAN and energy efficient TRUCKs for urban goods distribution
5	ClimaBiz	GR	Xenogianni Fotini	Piraeus Bank	Financial Institutions:Preparing the Market for adapting to Climate Change
2	Eco-Animation	UK	Luigi Petito	Business Solution Europa	A cutting edge cartoon to raise awareness on climate change and sustainable use of natural resources among European children
2	Eco-Animation	UK	Sian Hughes	Business Solution Europa	
5	FACTOR20	IT	Valentina Sachero	Regione Lombardia	Forwarding ACTIONs On a Regional and local scale to reach UE targets of the European Climate Action Plan
5	FACTOR20	IT	Mauro Alberti	CESTEC SpA	
3	GREENbanking4Life	GR	Xenogianni Fotini	Piraeus Bank	Developing green products in the financial sector and reducing environmental impact of bank services
5	ISIM-TCC	HU	Kristóf Vadovics	IFKA, Public Foundation for Development of Industry	Industrial Symbiosis as an Innovative Method in Tackling Climate Change
3	ISIM-TCC	UK	Paul Knuckle	International Synergies Ltd	
2	ITEST	S	Eva Hjalmered	municipality of Oskarshamn, Sweden	Increased total efficiency in sewage treatment
1	JEREZ + natural	ES	Pilar Mairal Medina	Pascual Presa Asociados	New Management Model of Urban Green Areas City of Jerez
	JEREZ + natural	ES	Africa Becerra	Ayuntamiento de Jerez	
	JEREZ + natural	ES	Miguel Barragan	Ayuntamiento de Jerez	
2	JEREZ + natural	ES	Nieves Cabello	Pascual Presa Asociados	
4	Julia2030	FI	Silja Huuhtanen	HSY Seututieto	Mitigation of and Adaptation to the Climate Change in the Helsinki Metropolitan Area - From Strategy
4	Julia2030	FI	Leena Mikkonen-Young	HSY Seututieto	
4	Julia2029	FI	Susanna Kankaanpää	HSY Seututieto	
4	Julia2030	FI	Marika Visakova	HSY Seututieto	
2	LACRE	IT	Giovanna Rossi	Provincia di Livorno	Local Alliance for Climate Responsibility
1	LACRE	IT	Nicoletta Rossi	Provincia di Livorno	
1	LACRE	IT	Piero Nocchi	Provincia di Livorno	
1	LACRE	IT	Mauro Bigi	Indica	
1	LAKS	IT	Sara Iori	Municipality of Reggio Emilia	Local Accountability for Kyoto Goals
3	LAKS	IT	Nicoletta Tranquillo	Indica	
1	LAKS	PL	Grzegorz Boron	City of Bydgoszcz, Poland	
4	LAKS	PL	Bożena Katarzyna Napierala	City of Bydgoszcz, Poland	

Group	Project	Country	Person	Organisation	Full name of the project
2	PesticideLife	FI	Sanni Junnila	MTT	Reducing environmental risks in use of plant protection products in Northern Europe
3	PesticideLife	FI	Pauliina Laitinen	MTT	
4	RENEW BUILDING	A	Robert Wimmer	Gruppe Angepasste Technologie	Demonstration and Dissemination of Climate and Environmental Friendly Renovation and Building
1	Rozas por el clima	ES	Vanessa Sánchez Ortega	Fundación Global Nature	Local Action Plan for Fighting Climate Change in Las Rozas de Madrid: Application and Evaluation of Municipal Management Methods
5	Seq-cure	IT	Marco Ligabue	Centro Ricerche Produzioni Animali	Integrated systems to enhance sequestration of carbon, producing energy crops by using organic residues
2	Seq-cure	IT	Elena Bortolazzo	Centro Ricerche Produzioni Animali	
5	SMARt-CHP	GR	Zissis Samaras	Aristotle University	Demonstration of a Small scale Mobile Agricultural Residue gasification unit for decentralized Combined Heat and Power production
3	SnowCarbo	FI	Jouni Pulliainen	IL	Monitoring and assessment of carbon balance related phenomena in Finland and northern Eurasia
1	SnowCarbo	FI	Ali Nadir Arslan	IL	
2	Soilpro	IT	Edoardo A.C. Costantini	Research centre for agrobiolgy and pedology Piazza	Monitoring for soil protection
3	Soilpro	IT	Sergio Pellegrini	Research centre for agrobiolgy and pedology Piazza	
3	VACCIA	FI	Martin Forsius	SYKE	Vulnerability assessment of ecosystem services for climate change impacts and adaptation
3	VACCIA	FI	Irina Bergström	SYKE	
3	VACCIA	FI	Jussi Vuorenmaa	SYKE	
3	WATERCHANGE	ES	Laurent Pouget	CETaqua	Medium and long term water resources modelling as a tool for planning and global change adaptation. Application to the Llobregat Basin.
3	WATERCHANGE	ES	Pierre-Antoine Versini	CRAHI (Research Center on Hydrometeorology)	
		UK	Chris Ennis	Clean Environment Management Centre (CLEMANCE)	
4			Panu Kontio	SYKE	
4			Susan Tönnies	HSY Seututieto	

## Participants for the 1st day only

Karoliina Kinnunen Mohr	YM
Riikka Lamminmäki	YM
Jukka Mustonen	Fiste Oy
Ari Nissinen	SYKE
Niko Karvosenoja	SYKE
Sirkka Koskela	SYKE
Tapio Reinikainen	YM
Tiia Yrjölä	MMM
Marjatta Aarniala	TEKES
Adriana Craciun	Life INF&TCY Coordinator, Astrale GEIE
Mikko Ylhäisi	Tekes
Vesa Lepistö	Tiedekeskus Heureka
Jussi Rautsi	YM
Paula Perälä	YM
Ville Sohn	Heureka, the Finnish Science Centre
Pasi Iivonen	YM
Markku Niinioja	Ulkoasiainministeriö
Raisa Mäkipää	Metsäntutkimuslaitos
Harri Hautala	Academy of Finland
Hanne Lohilahti	Regional Council of North Karelia
Tuula Pehu	Maa- ja metsätalousministeriö
Taija Sinkko	MMM
Pia Tynys	HSY Seututieto
Johannes Lounasheimo	HSY Seututieto
Leena Maidell- Münster	Vantaan kaupunki
Reija Ruuhela	Ilmatieteen laitos
Olli Alanen	Demos Helsinki
Ihalainen Laura	MaaseudunTulevaisuus
Eriksson Hanna	Vihreä lanka
Penttinen Katri	Ympäristöyritysten Liitto
Laakso Jorma	A-uutispalvelu





LIFE+ Climate change seminar  
Plenary discussion

# Workshop discussions, part I

Chairman: Pekka Harju-Autti

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4. What would you emphasize in the future programme after 2013 also with regard to 20,20,20 policy objectives? (Programme period 2014-2020)
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6. What do you think about possible two-phase selection process of LIFE+? Would it help you in the project preparation?

# Answers to the questions

## 1. Adaptation and mitigation of climate change after Copenhagen 2009 - How should it be reflected in the EU/World Climate Change Policy? - Any specific proposals?

### Group 1

- focus on EU policies in our group, basing on results from Copenhagen
- focusing on the future: include more forestry and agriculture in EU climate policy discussion
- effects of agriculture is so huge that those should be included, so far have not been recognized enough
- soil conservation as a mitigation measure
- EU policies in general have to be more integrated, huge fragmentation today
- mainstream climate change issues in all EU policies
- highlighting climate change policies
- there are a lot of resources, better coordination and monitoring is needed
- EU policy needs to be coherent and go to the same direction in climate change issues
- focus on concrete solutions
- decisions on local level are of the those that lead to results
- more focus on dissemination and the use of existing systems and technologies
- public oriented processes is a need for the EU
- holistic view on climate change is needed

### Group 2

- better coordination for better utilizing existing projects and research
- bottom-up approach was missing in COP 15
- better commitment from DG Environment in Copenhagen, so that existing projects could be used better in the future
- more research and LIFE demonstration projects for regional planning

### Group 3

- Role of forests as carbon sinks is of great importance, and should be better considered.
- Role of agricultural soils as carbon sinks or sources should be much more emphasized.
- European leadership in CC issue, there is need to work in local and regional scales
- The low rate of mitigation implemented will increase the need of adaption work
- Policy should be considered in the implementation of EC white paper on adaption and WFD

### Group 4

- Current European Union climate policy is quite good and in the future, EU should continue in the same direction, with the 20-20-20 reflecting the policy
- EU should pursue its climate policy targets irrespective of what happened in Copenhagen
- EU should take a strong role in international climate policy and have a stronger role in the future
- In Copenhagen, EU failed to take a clear and strong position and there is a lesson to be learned
- For the next Conferences, EU has to reconsider negotiation strategies and form new alliances (with developing countries; e.g. research cooperation with China concerning energy issues would open new opportunities for development of energy efficient and energy saving solutions in China)

# Answers to the questions

## 2. Any comments to the ideas presented by the keynote speakers?

### Group 2

- all the presented four ideas were basically good and worth supporting. However, we do not see a need to identify these ideas as the most welcome ones, since it could restrict the potential applicants' multitude of creative ideas.
- emphasize a better dissemination and communication so that results of projects would be better used in the society and work in EU policies
- broad context for climate resilience and proofing
- adaptation strategies should be looked upon from resilience point of view

### Group 3

- This was considered to be mitigation oriented, group feels that the ideas presented are out of the scope of Group 3
- Synergies between funding instruments should be better, the question is how to increase the connections? (FP7, Life+)
- Research and demonstration should always be closely connected. We don't see it as a big problems, because there is always overlapping
- Possibilities for close connections between different funding instruments (e.g. Life+ and regional Interreg funding ) should be created.

### Group 4

- was not really answered, merged with question 3
- to make an impact we should concentrate on most important areas, transport, building, urban planning

### Group 1

- missing: local level actions, that's where for example materials are tested...
- all ideas are important, EU is financing innovations, for LIFE+: mainstreaming of innovations on local level
- all technical solutions and ideas are there, but information is too fragmented and badly communicated
- innovations exist but are not known to the public
- Focus has to be done on procurement!!!

# Answers to the questions

**3.** Are there any gaps between climate change and LIFE+ that should be covered? Are there any new specific areas where LIFE+ should focus in your group's field? Are there any specific projects, which should be implemented in LIFE+ or with help of other financial instruments?

## Group 3

- More emphasis and focus on agricultural systems, e.g. relation between agriculture and environment: e.g. biomass production, GHG emissions.
- How to implement climate change issues to real world, e.g. for industry and connections to business
- Possibilities and environmental impacts of renewable energy (of great importance in EU policy)
- Role of wetlands in relation to climate change
- Use of new materials for adaption and mitigation work, e.g. nanomaterials
- More dissemination of Life+ results is needed

## Group 4

- If we want to create an impact then we should concentrate on the areas that have the greatest impact on climate and climate change mitigation. These are: transport and building sectors, and urban structure/planning. There are few projects on these topics in LIFE+ currently.
- Also, there is a lack of projects on approaches and applications and demonstrations of new and existing technologies and materials to promote energy saving and energy efficiency.

## Transport is a growing sector in energy consumption all over Europe. Issues and topics that should be covered:

- New technologies for transport sector to reduce the emissions and enhance energy efficiency of vehicles
- Heavy vehicles (trucks) are a key target for mitigation actions
- New fuels, renewable energy sources, natural gas and biogas solutions
- Electrification of vehicles
- Better vehicle technologies/ energy efficiency

## Buildings consume a lot of energy, especially during their lifetime (50 – 100 years or more). Issues and topics that should be covered:

- energy efficient solutions in construction: new buildings and renovation of existing building stock
- review of regulations, standards and the need for new ones
- new technologies and materials in construction
- demonstrating and promoting existing technologies that have not been taken into use (because of variety of reasons: techno-economic, socio-cultural, attitudes, risk-averse behaviour, etc.)

## Energy production and use are the major sources of CO<sub>2</sub> emissions. Issues and topics that should be covered:

- Bio-energy, biomass and new technologies, 2<sup>nd</sup> generation biofuels
- Biogas and natural gas
- Electrification of road transport and its impacts on energy production/infrastructures
- Decentralised energy production and renewable energy sources, new technologies and their impacts on energy infrastructure, and land use planning
- Smart grids
- Carbon capture and storage - CCS

## Urban structure and planning is the integrating link between transport, building and energy sectors. Issues and topics that should be covered:

- integrated transport and urban planning
- urban sprawl
- energy efficient solutions in urban structure (e.g. district heating) and planning

## Group 1

new methods of dissemination could be developed in LIFE energy savings and efficiency of industry and manufacturing

## Group 2

dissemination as a main thing to improve LIFE impact towards society

# Answers to the questions

## 4. What would you emphasize in the future LIFE programme after 2013 also with regards to 20/20/20 policy objectives?

### Group 4

If we want to create an impact and serve the 20-20-20 targets, we should concentrate on the areas that have the greatest impact for climate – transport and building sectors, urban structure/planning

- LIFE+ could be a stronger instrument in promoting approaches and applications and demonstration of new and existing technologies and materials for energy saving and energy efficiency
- Give more emphasis on dissemination and implementation, demonstration of new technologies and materials for energy saving and energy efficiency
- Allow different funding rules for different organisations depending on the size and type of the organisation. This has great importance for companies and NGOs
- Make it easier for enterprises to join: funding rules, reporting rules, possibility to get benefits from results of projects (technologies, approaches developed during project), also overhead – few organisations have overheads with only 7%
- Bring transfer of technologies from theory to practice => need to identify the missing links and the barriers to implementation of innovations and application of new or existing technologies
- Support innovative approaches, solution and investments for companies, and allow innovative approaches more generously
- Campaigning for energy saving and efficiency, including also finance sector, demonstration
- After LIFE: Maintenance of the project – projects should be self-sustainable, end of LIFE strategy to allow return of investments
- A new Theme for the call: climate change mitigation and adaptation?

### Group 1

sustainability of biomass is very important

### Group 2

nothing to add

### Group 3

- More emphasis on assessing financial costs for impacts and adaptation
- More industrial involvement, emphasis on most polluting industry, potentially including quotas for participation of industrial partners
- SME (small and medium sized enterprises) participation should be encouraged

# Answers to the questions

## 5. Are we doing some mistakes?

Is the scientific knowledge of climate change sufficient for testing in LIFE+?

### Group 1

- more attention should be given to dissemination
- common LIFE+ projects dissemination would help
- mistake: that there is no monitoring after the project, due to lack of financing
- dissemination should be enabled after the project duration, funding needed for those actions
- knowledge and technology transfer should be sharpened
- climate change knowledge will never be complete
- EC has externalised the expertise, this can be both good or bad → should be thought of at least
- it's sufficient, but scientists are always suspicious

### Group 2

- of course some small mistakes always happen, but did not find any huge mistakes
- the needed level of scientific certainty depend on the application for the project
- depends on the case

### Group 3

- Own financial contribution should be less than 50%, so it is easier for NGOs etc.
- shorter timeline for writing proposals and possibility to update the proposal
- uncertainty is there but it can be dealt with
- Financial reporting is heavy and complicated, it should be simplified
- Indicators of the evaluation-tables should be simplified/clarified
- Scientific uncertainty cannot be avoided, but can be treated with proper methods in model exercises, joint calls between EU/FP7 and Life+ could be a possibility, where uncertainty is dealt with in the scientific products.
- Spatial downscaling of results is an issue of uncertainty

### Group 4

- The scientific knowledge of climate change as a phenomenon is sufficient as a basis for planning measures, new technologies and actions
- The knowledge about the solutions, for example how to act in a more energy efficient manner and be more energy efficient, is still partly not sufficient.
- About the basics we however do know enough: we spend too much energy and we need to act to reduce energy use
- Knowledge about the solutions is provided by other (research) programmes as well

# Answers to the questions

## 6. What do you think about possible two-phase selection process of LIFE+? Would it help you in the project preparation?

### Group 2

- in favour
- better support for inexperienced applicant
- its possible for EC to hint if there are two similar projects, that could be combined into a better one
- concept should be really short, no detailed budget should be required or very general otherwise it could be a hindrance
- better instructions for applying

### Group 3

- Majority's opinion was that two-phase selection process is useful, if the first phase is simple and short, and response time from Commission is short
- There are also advantages in one-phase selection process, if the proposal is very complex and many partners are involved.

### Group discussion for the audience:

discussion of agriculture and soil conservation in connection to climate change has to be centred

### Group 4

- The majority of the group were in favour of the 2 step process
- Some problems (in 2-step) were also identified: selection process could become longer, it might be difficult to adequately present a good idea in a short proposal template (evaluators might not understand too short proposal) and this could lead to unnecessary refusals; some felt that 2-step could also increase work amount in preparation of proposals
- 2-step is preferable for public bodies and NGOs but the time frame of the process should not be extended from the current one; it might be sensible to evaluate the possibility to partly finance the development of the full proposal (2<sup>nd</sup> step) for proposals selected in the 1<sup>st</sup> step

### Group 1

- in favour
- clear information needed
- save of time and resources





# Reports from the afternoon workshops

## Reports from workshops

# Group 1: Local planning and decision-making

- focusing on local authorities and their responsibilities
- how local authorities can combat climate change in a good way
- we started with discussing about local authorities and their mandates in different countries, that is an important issues
- Climate change is crucial issue, clear visibility of climate change effects
- has been identified as a big impact causing a lot of expenses
- CHAMP tries an integrated way to handle climate change related issues, including more groups NGOs etc.
- giving tools for the city leadership
- IMS should be promoted to local authorities in Europe
- assisting local authorities to organise their work more effectively

## Reports from workshops

# Group 2: Communication and dissemination

- Communication and dissemination
- how to make a project more European?
- best practices should be made known in whole Europe if they are applicable
- in many cases projects should be more European
  - ✓ by partnership ( European partners in one project)
  - ✓ improved Communication and dissemination
  - ✓ project-by-project assessment of applicability for project results
  - ✓ translating results may be a good tool, but in a sensible way ad the costs should be reflected in the commission
- ECO-ANIMATION as a good example
- better communication and dissemination plans, there should be more emphasis on those plans in evaluations
- user-centred approach for e.g. web tools
- make the sure as a centre point for communication
- teenagers as importance audience that has been missing in LIFE projects
- mechanism of applying for After-LIFE dissemination funding has to be more simple and perhaps more resources could be directed to that
  
- How to measure awareness rising?
- there is a need to do that. However, often this is not possible since this is a complicated issue.
- requirement by EU about LIFE awareness
- also of the project key measures
- 2-way survey could be used

## Reports from workshops

# Group 3: Impacts and adaptation

### **1. Uncertainties in the scientific knowledge (e.g. scenarios, extreme weather events, climate variability)**

- Uncertainty in rate of change and downscaling of scenarios
- Should use wide range of scenarios, both climate warming and cooling (Gulf stream turning?) scenarios. Latter (Gulf) may be rapid, but unlikely, should however include to scenarios
- Standardize scenarios
- Give answers on rate of change to stakeholders; probability of extreme events, adaptation measures for these;
- Adaption should be started now, with wise use of models

### **2. Knowledge gaps in adaptation (e.g. sectors, spatial scales).**

- Lack of data for biodiversity change due to climate change
- Lack of size effects assessments of different adaption tools
- Short-term vs. long-term effects (e.g. forest burning effects)
- Spatial scaling: guidelines needed

### **3. How to communicate information to stakeholders and policy makers?**

- Communication with open media is important, TV and printed media should be targeted,
- Local key people should also be targeted, clear, simple and concrete dissemination is needed
- Simplify information, linking to daily work, make stakeholders/people to understand, more resources for dissemination in Life+ projects. National languages are important, but the main results also available in English,

### **4. Possibilities to assess costs of inaction and costs and benefits of adaptation**

- Socio-economical factors are important. There is a lack of economical values for ecosystem services, but are difficult to evaluate, and overall is a complex issue. Cost-benefit-analyses will be made at several projects, and should be an integral part of studies. In some sectors this is easy, but overall there is a lack of criteria how to value. However, socio-economic items are

### **5. Links between mitigation, adaptation and effects**

- useful to consider in action in the project, this information is requested.
- Always have to mitigate, following with the best possible adaption measures, win-win-situations, after Copenhagen CC related ecosystem effects are increasing, and will need more adaption tools in the future. Identification of the threshold values is important.

## Reports from workshops

# Group 4: Urban environment, Energy

In the Factor20-project, regional decisions and solutions are sought, how the different regions can contribute to national targets. For example in the south of Italy there is large potential for renewable energies (especially wind and solar energy). There is however, also local resistance to wind energy/mills and possible controversy between agriculture and energy production. In the project, also land use strategies and local politics are taken into account. In Northern Italy there is not so much potential for renewable electricity generation, and thus the focus is on energy saving and energy efficiency, especially in civil sector and also on the potential for biomass residues and other renewable heating systems (e.g. heat pumps). Action is promoted on local and regional levels, according to the burden sharing principle. Biomass is also a delicate issue, as the country has a quite convenient feeding tariff for (< 1MW) biomass plants and this could boost import of bio-fuels from other countries, also overseas. Measures for achieving the EU targets on bio-fuels are still to be defined in a national plan and then be allocated to the regions

Biomass is an important energy source in Europe. The issues include problems in logistics: how to reach the sources, transport the biomass and diminish the burden of transport. Also, decentralised approaches have difficulties in finding markets. Determining the appropriate size for biomass production (big is not always beautiful) is a central question also. Looking for these solutions could be something unique for LIFE.

Biofuels is an area where LIFE+ should be more active. There are already projects dealing with it, but LIFE could be a good vehicle in looking at the issue on a larger scale, demonstrating and developing. 2<sup>nd</sup> generation biofuels are coming (waste, such as agricultural waste, residues) and this is a challenge that LIFE+ needs to address. In the projects, an integrated approach is needed, and the agriculture sector needs to be involved. Sustainability of biomass is an important issue and needs to be tackled. For LIFE+, distribution and getting people to use biofuels would be good areas to promote. Also technology development and use are areas where LIFE+ could have a stronger role

New approaches for LIFE+ are needed. For example marketing, and enabling smaller producers to enter the markets and the role of public procurement could be new areas to promote.

In the RENEW BUILDING project, a new approach has been adopted. Previously in LIFE you had a dirty (= environmental) problem and you solved it. But in the project a new type of house was built, but there was no problem to start with. Creating new solutions and allowing innovative approaches more generously should be a new approach for LIFE+.

LIFE+ should have a strong role in demonstrating new and existing technologies and solutions in the energy, building and urban structure sectors. Subsidy systems could be changed. Demonstration could start form a small scale, where the technology/approach could be tested and then expanded to larger scale. For example, construction has one of the biggest potentials in reducing CO2 emissions and has long time frames. Life cycle consumption of energy of buildings is more important than the construction time consumption = emissions. However, the building branch as it is very risk averse, and builders are very conservative in adopting new technologies and solutions. There is a great need for show cases where they see the new technologies. Also, the technologies need to be available, and it is important to bring the enterprises to the market.

It is also very important to monitor, evaluate and report the progress in adopting new technologies – also problems need to be reported and analysed.

Refining information is important: currently there is quite a lot of information about for example new technologies in energy efficiency, but the information is not concise, and it is not well demonstrated, not evaluated, and quite difficult to find. It would be good to have a registry of technologies where searching and finding solutions would be easy. We are using a lot of time now by searching for the information.

### Discussion:

climate change includes everything, if you want to have concrete action, there should be identified essential climate change adaptation areas EC made a good job with addressing on sustainability of liquid biofuels but not of solid biomass that needs to be discussed, we hope that this discussion will go on.



Concluding words

# Concluding words (Martin Petrtyl)

- **the seminar was very useful and important**
- **Some of the most important things in the discussion:**
  1. dissemination especially after the project is finished → sustainability of the projects, after LIFE, perhaps it need to be stressed more, further dissemination should be widened could be reflected in the future regulations
  2. each region and countries has its own rules, all projects produce some kind of guidelines for transferability, sometimes even transboundary – this know-how should be consolidated
  3. interesting to hear about what is European: simply everything that is in Europe!  
But this has to better specified for clarity of the LIFE+ programme itself.
  4. further dissemination of good practices, perhaps the system need to be improved.  
sometimes the projects do not have enough forces to disseminate further on
  5. teenagers: very important for EU, so we have to ensure that this target group understands us
  6. we gather a lot of information and how to “digest” those could be topic in the projects as well
  7. it seems that the flexibility of the programme is good
  8. perhaps more demonstration is needed
  9. projects that think about how it is in 50 years, these projects are welcome
  10. Easier access to LIFE+ for especially SMEs is clear, too.  
Forms should be simplified as much as possible.
  11. all the groups were well in favour of two-step procedure in Life proposal evaluation



# PowerPoint slides presented (1-5)

Participating 30 Life+ climate change projects



**ACT - Adapting To Climate Change in Time** (Beneficiary is Municipality of Ancona) focuses on the development of a process capable of resulting in an effective municipal strategy for local climate change adaptation. This will be achieved by involving (and increasing awareness among) local stakeholders in a consultation process to help determine proportionate, appropriate and cost-effective measures to be included in the adaptation strategy.



**AdaptFor** (The Goulandris Natural History Museum/ Greek Biotope Wetland Centre)  
This project aims to demonstrate that forest management can be adapted to climate change, while enhancing the capacity of forest services. The project will also inform all stakeholders why it is necessary to adapt forest management to climate change.



**AGRICARBON** (Asociación Española Agricultura de Conservación / Suelos Vivos)  
This project aims to encourage the progressive establishment of sustainable agricultural techniques to new climatic conditions resulting from global warming. The research will assess CO2 emissions and energy consumption on farms based on climatic characteristics, type of crops, and type of farming.



**BIOGRID** (Naturgas Energia Distribucion S.A.): This project will demonstrate the feasibility of producing a substitute natural gas (bio-methane) from biogas, for injection into the natural gas grid and use as vehicle fuel. To achieve this goal, coupling biogas production with an innovative biogas upgrading system will be carried out combining biological and cryogenic technologies to capture and store the CO2 in the biogas and to remove other contaminants (SH2, volatiles, moisture, etc).




**Boreal Peatland Life** (Metsähallitus)  
Boreal Peatland Life aims to improve the habitat quality of 54 Natura 2000 sites in the unique Finnish peatland network. The project will concentrate on the restoration of priority habitats, including three of the most threatened priority habitat types: aapa mires, bog woodlands and active raised bogs.



LIFE08 ENV/IT/436

## PROJECT ACT

### ADAPTING TO CLIMATE CHANGE IN TIME



LIFE CLIMATE CHANGE SEMINAR – HELSINKI 18-19 JANUARY 2010

**MARCO CARDINALETTI**  
PROJECT MANAGER  
MUNICIPALITY of ANCONA  
ENVIRONMENTAL and URBAN MOBILITY DEPARTMENT

## BASIC FACTS OF ANCONA

- The City of Ancona, placed in the centre of Italy is the capital of the Marche Region. The City counts slightly more than 100.000 inhabitants.
- Ancona hosts, in the old part of the city, one of the most important ports in the Adriatic region for passengers, freights and fishing.
- The urban environment is characterized by a not very high density of population (814,97 /km2), and a very faster and spread building development.
- The City is a complex, dynamic, culturally-active reality, which is gradually changing, presenting various criticalities and issues, from the social and environmental point of view.
- Even though Ancona is a small/medium city, either for number of inhabitants or dimensions, it has to manage the typical issues of the big cities



## MAJOR CHALLENGES

- IMPROVING AIR QUALITY
- REDUCING COASTAL EROSION
- IMPROVING ENERGY EFFICIENCY
- FACING CLIMATE CHANGE IMPACTS
- STRAIGHTENING LOCAL GOVERNANCE



## THE ANCONA ROADMAP FOR SUSTAINABILITY

- **2000:** started up of LA21 PROCESS
- **2002:** established of LA21 AGENCY for MONITORING implementation of ANCONA 2012 – LOCAL ACTION PLAN
- **2003:** Lead Partner of AAP2020 project (INTERREG IIIC - [www.aap2020.com](http://www.aap2020.com) )
- **2004:** signed AALBORG COMMITMENTS
- **2005:** Partner in MUE25 project ([www.mue25.net](http://www.mue25.net) )
- **2006:** signed ADRIATIC ACTION PLAN 2020 SHARED WITH 24 ADRIATIC CITIES
- **2006:** implementation of ANCONA SUSTAINABILITY REPORT
- **2007:** Lead Partner in EASY project (IEE - [www.easyaction.eu](http://www.easyaction.eu) )
- **2008:** PARTNER of the SUSTAINABLE ENERGY CAMPAIGN
- **2009:** signed THE COVENANT OF MAYOR

2010: ACT PROJECT



## ACT PROJECT ID

- PROJECT NAME: *ADAPTING TO CLIMATE CHANGE IN TIME*
- PROJECT ACRONYM: *ACT*
- COUNTRIES INVOLVED: *ITALY, GREECE, SPAIN*
- TOTAL PROJECT BUDGET: *1.752.258 €*
- EXPECTED START DATE: *01/01/2010*
- EXPECTED END DATE: *30/11/2012*
- PROJECT POLICY AREA: *CLIMATE CHANGE*



## MAIN OBJECTIVE

### THE PROJECT ACT



aims to demonstrate that through an **INCLUSIVE** and **PARTICIPATED PROCESS**, shared by **ALL THE LOCAL ACTORS INVOLVED**, is possible to develop a **LOCAL ADAPTATION PLAN** able to forecast and mitigate **ENVIRONMENTAL, SOCIAL AND ECONOMIC IMPACTS OF CLIMATE CHANGE** on the most vulnerable sectors of the European Cities in **THE MEDITERRANEAN BASIN**

## SPECIFIC OBJECTIVES

- defining of a **STANDARD METHODOLOGY** to create **LOCAL ADAPTATION STRATEGIES**, by means of a participatory approach within the Local Communities,
- **INVOLVING** (by increasing their awareness) **LOCAL ACTORS** (local industries, citizens, health system, civil protection, etc.) in development of local adaptation strategy
- **ENHANCING THE COMPETENCE OF LOCAL AUTHORITIES** in understanding the effects of climate change, and hence in planning and implementing policies and actions to adapt to them.
- **STRAIGHTENING SYNERGIES** between adaptation and mitigation policies at local level
- Providing the Mediterranean Cities, characterized by different territorial, socio-economic and climatic conditions, **WITH A SHARED METHODOLOGY FOR LOCAL IMPACT ASSESSMENT.**

## PARTNERSHIP

- **MUNICIPALITY OF ANCONA (IT)** – Lead Partner
- **MUNICIPALITY OF BULLAS (ES)**
- **MUNICIPAL ENTERPRISE FOR PLANNING & DEVELOPMENT OF PATRAS (GR)**
- **FORUM OF ADRIATIC AND IONIAN CITIES (IT)**
- **ISPRA – INSTITUTE FOR ENVIRONMENTAL PROTECTION AND RESEARCH (IT)**





## WORK ACTIONS

- Project Management:**  
*start-up management, coordination and management of the partners, monitoring, reporting and auditing*
- Baseline scenario and capacity building:**  
*collecting and analysing all the information on existent model and climate forecasting scenarios and on international experiences in local adaptation plans.*
- Local impact assessment:**  
*defining a shared methodology for local impact assessment. Local impact assessments will be developed by each city taking into account economic, social and environmental aspects. At the end of this action a road map for local adaptation strategies will be created to guide local authorities in developing a local adaptation strategy*
- Local adaptation strategies:**  
*The three Cities involved will establish its own LOCAL ADAPTATION BOARD (including the main stakeholders involved) and will develop their LOCAL ADAPTATION PLAN officially approved within the end of the project.*
- Evaluation of project results:**  
*Evaluating project results through a peer review that aims at developing guidelines that can be implemented by other municipalities willing to develop local adaptation plans.*
- Communication and dissemination of results:**  
*Communicating to a wide range of public, local authorities, economic sectors, national and European institutions the results of the project*

## PROJECT TIMETABLE

Action Number/name of action	2010				2011				2012			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
ACTION 1: Project management and monitoring												
ACTION 2: Baseline scenario and capacity building												
ACTION 3: Local impact assessment												
ACTION 4: Local adaptation strategy by Ancona												
ACTION 5: Local adaptation strategy by Patras												
ACTION 6: Local adaptation strategy by Bullas												
ACTION 7: Evaluation of project results												
ACTION 8: Communication and dissemination of results												

## CLIMATE CHANGE IS...



## PROJECT ACT ADAPTING TO CLIMATE CHANGE IN TIME

**MARCO CARDINALETTI**  
PROJECT MANAGER

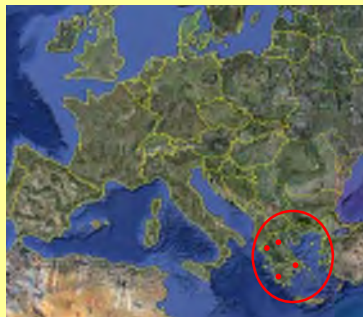
MUNICIPALITY of ANCONA  
 Environmental and EU program Department  
 carmar@comune.ancona.it  
 +39 071 222 2673  
 +39 328 92 66 073





LIFE+ Environment Policy and Governance 2008

### PROJECT: AdaptFor Adaptation of forest management to climate change in Greece



Vasiliki Chrysopolitou  
Dimitris Papadimos



### Project's basic information

#### PROJECT BUDGET AND REQUESTED EC FUNDING

Total project budget: 1.719.112 €  
Total eligible project budget: 1.666.712 €  
EC financial contribution requested: 833.356 € (=50 % of total eligible budget)

#### PROJECT'S DURATION

Start Date: 01/01/2010      End Date: 30/06/2013

#### BENEFICIARIES

Coordinating beneficiary: The Goulandris Natural History Museum /  
Greek Biotope Wetland Centre  
Associated beneficiary: General Directorate for the Development and  
Protection of Forests and Natural Environment /  
Ministry for the Environment, Energy & Climate Change

### Project objectives:

- a) Demonstration of the approach of adapting forest management to climate change
- b) Enhancement of the capacity of forest services to adapt forest management to climate change
- c) Dissemination of the need for adaptation of forest management to other stakeholders and to the general public

### Actions and Means:

Demonstration of the approach of adapting forest management to climate change



#### 4 pilot sites

where changes in vegetation have already been observed (dying out of fir, invasion of conifers in evergreen broadleaved forests)

Local level



Integration of the findings to give guidance and training

Regional and National level





**Actions and Means:**

a) Demonstration of the approach of adapting forest management to climate change

Production of time series of **temperature** and **precipitation** + Examination of:  
 a) 1950-2009 and b) 2010-2050  
 soil condition  
 vegetation  
 growth and age structure  
 forest health

= assessment of the impacts of CC on the 4 forest ecosystems

↓

Revision of the forest management plans in the 4 pilot sites

**Actions and Means:**

b) Enhancement of the capacity of forest services to adapt forest management to climate change

Circulation of the experience to a wider audience

Implementation of a training course targeted to forest managers

Drafting and publication of guidelines for the adaptation of Greek forest management to climate change

*Thus, the project results and recommendations for forest adaptive management will be widely applicable*

**Actions and Means:**

c) Dissemination of the need for adaptation of forest management to other stakeholders and to the general public

Communication and dissemination will be conducted via a web page, leaflets, the opening and closing meetings, press releases, media work etc.

At the end of the project, an 'After-LIFE Communication Plan' will be produced setting out how dissemination of the project results will continue over the coming years



### Expected results

- ◇ Assessment of the effects of climate change in selected forest ecosystems in *Greece*
- ◇ Incorporation of climate change considerations in selected forest management plans
- ◇ Production of guidelines on the adaptation of forest management to climate change in *Greece*
- ◇ Wide dissemination of the need to adapt forest management to climate change and the approach to do so
- ◇ Training of the personnel of the forest services to incorporate climate change considerations in their forest management



LIFE+ Environment Policy and Governance 2008

**Thank you for your attention!**





## LIFE + AGRICARBON

Sustainable Agriculture in Carbon Arithmetics  
LIFE 08 ENV/E/129



## LIFE + AGRICARBON. Some basic data

- **Duration of the project:**

48 months (01/01/2010 – 31/12/2013)

- **Total budget in euro:**

2,674,653.00

- **EC contribution in euro with %:**

1,237,262.00 (46.26%)

- **Generic Theme:**

Reduction of emission of greenhouse gases

- **Coordinating beneficiary:**

AEAC.SV (Spanish Association for Conservation Agriculture . Living Soils) – Non profit making association. [www.aeac-sv.org](http://www.aeac-sv.org)

- **Associated beneficiaries:**

- University of Córdoba (Spain)
- IFAPA (Spain)
- European Conservation Agriculture Federation – ECAF (Belgium)



## Climate change and Agriculture



Agriculture is the 3rd activity emitting more GHG in Spain, MAINLY DUE TO SOIL TILLAGE:

- Losses of 50% Soil Carbon related to Organic Matter.
- When tilling there are high CO<sub>2</sub> releases from soil to atmosphere, due to burning of Soil Carbon...  $C + O_2 = CO_2$
- High ENERGY consumptions due to excessive and intensive tillage.

## Erosion: also a big environmental problem



**EUROPE:** 157 M de Hectares are seriously affected by erosion (3 times as large as France)

**SPAIN:** More than 50% of agrarian surface is also affected.





## Conservation agriculture: a holistic approach



Conservation agriculture, based in NO TILLAGE systems, with PERMANENT SOIL COVER with CROP ROTATIONS offers:

- Mitigation of the Climate Change.
- Crops adaptation to the Climate Change
- Control of erosion and desertification.
- Increased energy saving and efficiency.
- At least same yields for European farmers.

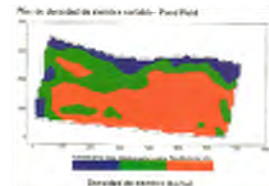
## Conservation agriculture...YES, WE CAN!!



## Precision Agriculture: let's play & save in Agriculture



Precision Agriculture is a concept relying on the existence of in-field variability. It requires the use of technologies, such as global positioning (GPS), sensors, satellites or aerial images, and information management tools (GIS) to assess and understand variations.



## Proyecto LIFE + AGRICARBON



- This project aims to encourage the progressive establishment of sustainable agricultural techniques (Conservation Agriculture and PA), contributing to GHG emission decreases and the adaptation of the agricultural system to the new climate conditionants found in global warming.



## Proyecto LIFE + AGRICARBON. Main actions



- Verification and demonstration of adaptive capacity of CA and PA to the expected climate change variations by the evaluation of grain yields and quality parameters, and of the moisture content in the soil (Objectives 1 and 2).
- CO<sub>2</sub> emission and energy evaluation of farms via a virtual management digital platform through a web page. (Objective 3).
- Verification of the sink effect of CA, by the study of carbon sequester rates from laboratory analyses of the organic matter content evolution in soil samples taken at different depths (Objective 4).

## Proyecto LIFE + AGRICARBON: Sinergias



### MITIGATION AND ADAPTATION TO CLIMATE CHANGE

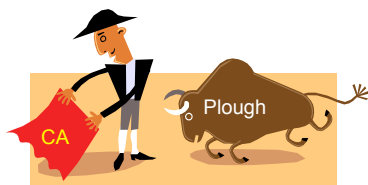
#### Conservation Agriculture:

- Use soil as carbon sink.
- Reduces CO<sub>2</sub> emissions due to the no tillage of the soil.
- Need much less fuel in farms.
- Promotes a better water use by crops, specially important in drought conditions.

#### Precision Agriculture:

- Helps better tractor driving, avoiding overlaps, meaning less inputs needed in farms.
- Optimise the use of agrichemicals.

## Thank you!



### Contact:

Emilio González-Sánchez

Agronomist

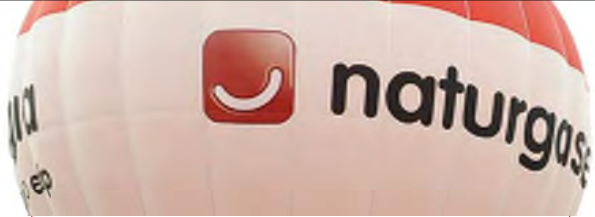
Manager of LIFE+ Agricarbon project

egonzalez@aeac-sv.org


Project website available soon, meanwhile:

[www.aeac-sv.org](http://www.aeac-sv.org) (only Spanish version) – [www.ecaf.org](http://www.ecaf.org)








# The LIFE BIOGRID Project



Dr. Angel M<sup>a</sup> Gutierrez

Helsinki, 18-19 Jan. 2010      Climate Change Seminar       1

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**NATURGAS ENERGIA**


- an integrated energy group

**THE BIOGRID PROJECT**

- project opportunity
- places, timetable, backing
- partners
- main objective
- process and description
- expected results


Helsinki, 18-19 Jan. 2010      Climate Change Seminar       2

## an integrated energy group





**Naturgas Energia** is a Spanish energy group whose aim is to supply **natural gas and electricity** to businesses and individuals

**transmission and distribution of natural gas**


-  Third rank gas transmission operator in Spain      400 Km
- Second rank Spanish gas distribution operator      6,000 Km

**commercialization of natural gas and electricity**


-  Gas leader on the Cantabrian Coast & Murcia      1 million clients
- Second rank in electricity in the Basque Country      50,000 clients

Helsinki, 18-19 Jan. 2010      Climate Change Seminar       3


## project opportunity



**Biogas injection into natural gas grid and use as vehicle fuel by upgrading it with a novel CO<sub>2</sub> capture and storage technology**



**Environmental European Innovative Project**

Helsinki, 18-19 Jan. 2010      Climate Change Seminar       4



## places, timetable, backing



PROJECT LOCATION: **Bilbao and Tineo**

DURATION: Start: **01/01/2009** - End: **31/12/2011**

### BUDGET INFO:

Total amount: **€1.956.111**

% EC Co-funding: **€896.781 (nearly 46%)**



## partners

### PROJECT'S IMPLEMENTORS:

- Coordinating Beneficiary: **NE Distribución (ES)**
- Associated Beneficiaries: **NE Grupo (ES)**  
**NE Transporte (ES)**  
**Biogas Fuel Cell (ES)**  
**GasTreatmentServices (NL)**  
**Ingrepro (NL)**

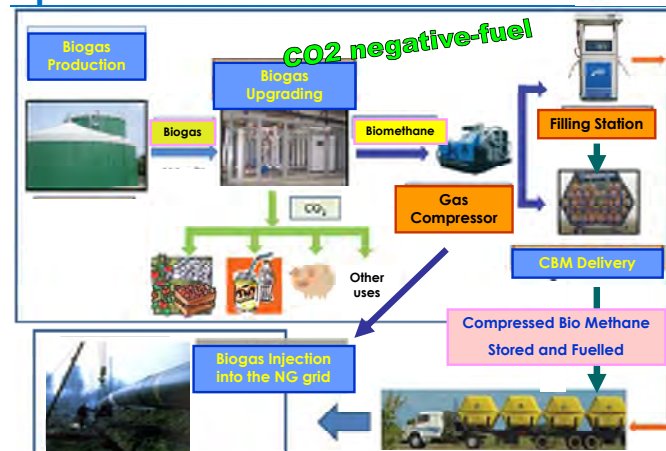


## main objective

The goal of this project is to demonstrate the feasibility of producing a substitute natural gas (bio-methane) from biogas. To achieve this goal, coupling biogas production with an innovative biogas upgrading system will be carried out. This system is based on the combination of biological and cryogenic technologies to capture and store the CO<sub>2</sub> in the biogas and to remove other contaminants (SH<sub>2</sub>, volatiles, moisture,...). This upgrading process would be an alternative to the CO<sub>2</sub> capture technologies currently available, which have substantial capital and operating costs.



## process



## description

- **Biogas production plant** from an anaerobic digestion (240 m<sup>3</sup>/d) will be used to test different types of residue and to study their potential for the production of biogas. **BFC**
- **Biogas upgrading plant** will consist in the integration of two prototypes:
  - \* **Pilot Algae Plant (PAP)** where the biogas is firstly upgraded by the fixation of CO<sub>2</sub> through photosynthetic algae for natural CO<sub>2</sub> sequestration. Besides the CO<sub>2</sub> from the biogas, the digestate produced in the anaerobic digestion process will also be used as a nutrient for growing the algae. As a by-product, the process generates algae biomass with many applications. **ING**
  - \* **The Gas-treatment Power Package (GPP) system** upgrades the biogas coming from PAP capturing the residual CO<sub>2</sub> and removing the rest of the contaminants. In this plant the biogas is chilled in four steps to obtain a high quality biomethane and liquified CO<sub>2</sub> as a by-product which is stored for further uses. **GTS**
- **Biomethane distribution**: The biogas will be upgraded to the specifications required by the Spanish legislation in order to add it to the natural gas grid. **NG**
- **Biomethane as vehicle fuel**: A biomethane driven vehicle will be tested. To do that, it will transport CBM gas from the Biogas Plant to de Natural Gas grid. **NG**



## expected results

- Define the best conditions for biogas production.
- Prove a novel technology for upgrading biogas to biomethane with CO<sub>2</sub> capture and storage based on the combination of a biological and cryogenic process.
- Produce biomethane as a CO<sub>2</sub>-negative-fuel at a competitive cost.
- Improve the economics of biogas via grid injection and as vehicle fuel.
- Perform an environmental and economic analysis.
- Promote the use of anaerobic digestion of wastes as an alternative source of renewable energy and also as a route for waste management.
- Replicate the process in other plants, favouring the off-farm uses of biogas and improve their environmental impact and their economy.
- Duplicate the process in other activities which generates CO<sub>2</sub> containing flue gas.




Many thanks for your kind attention!


[www.lifebiogrid.eu](http://www.lifebiogrid.eu)







 **Restoring the Natura 2000 network of Boreal Peatland Ecosystem**


**Boreal Peatland Life**  
LIFE08NAT/FIN/0596

 METSÄHALLITUS



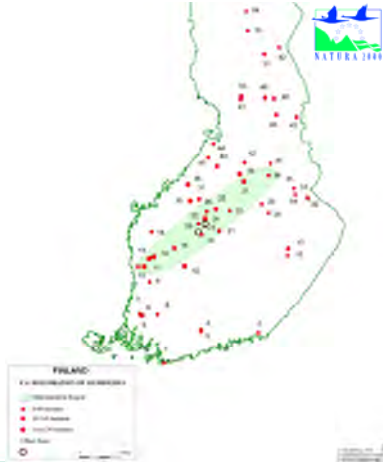
18.1.2010  
Mikko Tiira  
mikko.tiira@metsa.fi

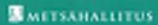


**Main aim of the project** 

**Restoration of hydrology of peatland complexes in 54 Natura 2000 sites**


- Target habitats formerly afforested mires
- Mire types ranging from Bog woodlands to open aapa mires
- Total restoration area 4,250 ha

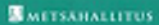


 METSÄHALLITUS 2

**Key figures**


- LIFE Nature
- Coordinating beneficiary: Metsähallitus
- Associated beneficiaries: Central Finland Regional Environment Centre and University of Jyväskylä
- Duration 5 years (1.1.2010 – 31.12.2014)
- Budget 6,726 million €
- EC contribution 50 %


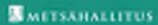


 METSÄHALLITUS 3

**Key preparatory actions**

- Preparation of restoration plans (29), management plans (3)
- Education of restoration workers



  METSÄHALLITUS 4



## Key restoration measures

- Filling in 1 078 696 m of ditches in 54 sites covering 4,250 ha
- Clearing trees from in 43 sites from an area of 3 143 ha



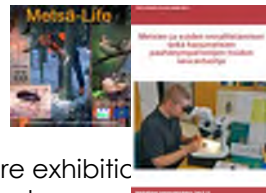
Then we have a cup of coffee and we wait...



Mean while....

### Disseminate

- press, website, brochures, DVDs, mire exhibitic nature trail, mire tours for various target groups.



And monitor....



## Mires and climate change

- Peatlands are significant stock for carbon dioxide and source for atmospheric methane
- Drainage affects the balance: carbon dioxide fixes to trees and methane release decrease, overall outcome dependent of mire type
- After restoration rapid negative effects: increased methane release as the water level is increased
- After a few years carbon dioxide starts accumulating to the peat
- Overall outcome highly dependent on mire type and other circumstances
- More information is needed
- Restoration enhances the biodiversity!!!

Thank you for your undivided attention!

