

## SUSTAINABLE NOW Training Workshop on CO<sub>2</sub> monitoring

- Munich (Health and Environment Department)-

21 April 2010

### **Workshop context: Why is a CO<sub>2</sub> emission inventory such an important step in the Local Energy Action Plan process?**

Any action at the local level requires that local governments (LGs) have a good overview of their emission sources and their respective reduction potentials.

Experts from Climate Alliance (CA) and ICLEI agreed that LGs need appropriate tools and methods to compile a GHG emissions inventory. This inventory will be used as reference document during the whole process (e.g. to define reduction targets, prioritise actions, develop different scenarios...).

### **Existing tools – and how these can help the LEAP process in practice**

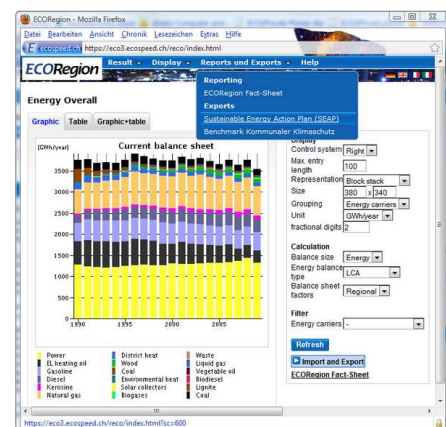
#### **Presentation of the ECORegion tool: How does it work and why is it useful?**

Miguel Morcillo, project manager - CLIMATE ALLIANCE

Email: [m.morcillo@climatealliance.org](mailto:m.morcillo@climatealliance.org) / Tel: +49-69-71713917

**Presentation of ECORegion** - Miguel presented the ECORegion tool, its objectives and main features.

- What is ECORegion? It is an internet based tool designed for local authorities to calculate both the final energy and the primary energy as well as the corresponding CO<sub>2</sub> missions. The tool helps local authorities to follow up the progress in terms of CO<sub>2</sub> emission reduction, and therefore monitor whether they fulfill their own commitments.
- What does the tool offer? The tool provides series of CO<sub>2</sub> and energy balances, for example per energy carrier and per sector. Several sectors are considered, such as: public facilities, households, transport and private sector.
- What is needed from the local authority? Only some basic information is required at the beginning, such as number of inhabitants, and a profile of the city/region. Based on this set of data, the software automatically creates a first estimate of the emissions. This “start balance” is derived from relevant national key factors / statistics. The users then have to enter little by little its own energy data (directly measured or collected) to complete its inventory.



- How does it work? The ECORegion tool can be accessed through the web. It is a dynamic user interface and allows the users to download graphs in different formats. A “Community Platform” offers cities and regions the possibility to share their data with other LGs.
- Which methodology is used? Climate Alliance recommends LGs to compile their inventories based on primary energy consumption and LCA of fossil fuel based energy. This means that all emissions related to the supply of final energy (fossil fuel extraction, transport etc.) are allocated to the point of use. However, the ECORegion tool as such also allows to compile inventories that are consistent with the IPCC guidelines. The users can decide on different principles according to which they want to compile the inventory.
- Is the tool available in my country? ECORegion is available in Austria, Switzerland, Germany and Italy. It is also being adapted for the application in France, UK, Luxemburg and Ukraine.

More information on the <http://ecospeed.ch/> website.

LGs can test **ECORegion** via a DEMO version. You will first need to [register](#) by sending an email to [support@ecospeed.ch](mailto:support@ecospeed.ch).

### Practical experiences from a local authority using the ECORegion tool: Worms (DE)

**Miguel (CA)** presented one concrete example: the CO<sub>2</sub> inventory 2004-2006 of Worms (80.000 inhab.), Germany. This example highlighted the importance of the local context (e.g. big chemical industry sector, and center for the transport of goods in Worms) when compiling a GHG emissions inventory. LG’s specificities (i.e. more industry but less transportation) must be considered to ensure that the inventory is as accurate as possible.

In some cases, estimates based on a very limited number of data can be very misleading! A top-down estimate based on a limited number of data or national/regional statistics must therefore be complemented by as many local activity data as possible.

### Exploring ICLEI’s Greenhouse Gas Inventory toolkit

Ian Shearer, Project Officer, ICLEI – Local Governments for Sustainability  
Email: [ian.shearer@iclei.org](mailto:ian.shearer@iclei.org) / Tel: +49-761 / 3 68 92-0 (direct -35)

After the lunch, **Ian Shearer** started with a short presentation of some ICLEI’s initiatives, like the Carbonn initiative (a platform for reporting - more information: [www.carbonn.org](http://www.carbonn.org)), the City Climate Catalogue ([www.climate-catalogue.org](http://www.climate-catalogue.org)) and the Cities for Climate Protection (CCP) Campaign (more information: [www.iclei.org](http://www.iclei.org)). He then presented in more details the Local Government Greenhouse Gas Emissions Analysis Protocol (LG GHG Protocol).

Built on the CCP Campaign & WRI/WBCSD GHG Protocol, the LG GHG Protocol provides an easily implemented set of guidelines to assist local governments in quantifying the greenhouse gas

emissions from both their internal operations and from the whole communities with their geopolitical boundaries.

By developing common conventions and a standardized approach, ICLEI seeks to make it easier for IGs to achieve tangible reductions in greenhouse gas emissions. The standardized approach described in this Protocol facilitates comparisons between IGs and the aggregation and reporting of results being achieved by the action of diverse communities.

The International LG GHG Protocol (IEAP) is a Framework & Standard for LG Inventories.

Peer reviewed since 2008, the first version was released in October 2009 and is now open for updates and improvements.

It establishes a standard for LG management programs **BUT** software neutral. It is freely available from website: [www.iclei.org/ghgprotocol](http://www.iclei.org/ghgprotocol).

**Ian** informed partners that some Country/Regional Supplements are being developed (e.g. Italy, Spain, Poland plus India & South Asia). The purpose is to enable local governments within a country to use consistent, internationally recognized GHG accounting & reporting principles and nationally appropriate data and emissions factors.

What was needed was an international protocol consistent with:

- IPCC 2006 methodological changes
- ISO 14064 series of standards
- Corporate standards and reporting protocols
- All GHG gases and all sectors of relevance to local government
- Most significant sources of GHGs at local level are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O) (but for community analysis it had to also cover the other GHGs: sulphur hexafluoride (SF<sub>6</sub>), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs))
- Also needed are rules to credibly measure GHG emissions reductions, in units of tonnes CO<sub>2</sub> equivalent to calculate the total impact of GHGs reduced or avoided following actions taken.

Sources of local emissions covered by the IEAP:

	IPCC/UNFCCC Sectors		IEAP Sectors	
			Government	Community
<b>Energy</b>	Stationary Energy	Buildings and Facilities	Residential	
		Street Lighting and Traffic Signals	Commercial	
		Water and Wastewater Treatment, Collection and Distribution (energy)	Industrial	
	Transport	Government Transport	Transportation	
		Employee Commute		
	Fugitive Emissions	Other	Other	
<b>Industrial Processes</b>		Other	Other	
<b>Agriculture</b>		Other	Agriculture/Other	
<b>Land Use, Land use change and Forestry</b>		Other	Other	
<b>Waste</b>	Solid Waste Disposal	Waste	Waste	Waste
	Biological Treatment of Solid Waste			
	Incineration and Open Burning of Waste			
	Wastewater Treatment and Discharge			

(See the differentiation between i) Local Government Operations and ii) Community.)

For more information or for clarification of aspects of this Protocol:

- **International Local Government Greenhouse Gas Emissions Analysis Protocol** – Version 1.0 (Oct 2009) (0.4 MB):  
[http://www.iclei.org/fileadmin/user\\_upload/documents/Global/Programs/CCP/Standards/IEAP\\_October2010\\_color.pdf](http://www.iclei.org/fileadmin/user_upload/documents/Global/Programs/CCP/Standards/IEAP_October2010_color.pdf)
- **Local Government Operations Protocol (USA)** – Version 1.0 (Sept 2008) (1.1 MB):  
[http://www.iclei.org/fileadmin/user\\_upload/documents/Global/Programs/CCP/Standards/LGOP\\_USA\\_2008.pdf](http://www.iclei.org/fileadmin/user_upload/documents/Global/Programs/CCP/Standards/LGOP_USA_2008.pdf)

### Discussion - experiences of Sustainable NOW city partners with CO2 monitoring

- **Have you conducted a CO2 emission inventory?**
- **What tool did you use? And general experiences**
- **What are typical obstacles when preparing a CO2 emission inventory?**

**Gianmarco Lazzarin (CM)** mentioned that the collection of data is very difficult in Italy. It is especially complicated to get data from energy companies.

**Miguel (CA)** pointed out that ECORegion is a tool that offers the possibility to calculate a “start balance” with only the number of inhabitants and employees. These figures are public information that is available from the statistic agencies.

**Gerhard (Munich)** informed other participants that Munich holds his own city utilities. So energy data (e.g. energy consumption) can be more easily collected.

**Anja (Ludwigsburg)** explained how it has collaborated closely with the nearby University of Stuttgart and has had meetings with stakeholders in order to facilitate data gathering. The collaborative work with research institutions (or, alternatively, with local energy agencies), and support from project partners, was highlighted as a very effective way to overcome the problem of insufficient data.

**Gianmarco (CM)** noted that analyzing data is a complicated task – when data are available! Hence, LGs should rely on some existing methods and tools, such as those developed by Climate Alliance and by ICLEI. In Comunita Montana, they first applied the EMAS certification and ISO standards.

**Gianmarco (CM)** asked if the CA’s and ICLEI’s tools offer a feature to i) import data and ii) export the results (because LGs should be able to use their former work). He also asked about the possibility to apply changes in the tool (e.g. new parameters, new features, ...).

**Miguel (CA)** replied that it is possible with ECORegion. He also noted that -due to the high importance of the Covenant of Mayors and of the amount of committed cities- Climate Alliance has adapted the ECORegion tool to fit as closely as possible to the requirements of the Covenant of

Mayors. An export function is made available through the click of a button, after which a Microsoft Excel spreadsheet of energy and CO<sub>2</sub> emissions is generated. Hence, EcoRegion outputs can automatically feed in the Covenant “SEAP templates”. ECORegion has been officially recognised by the European Commission as a valuable tool to prepare the emissions inventories in the Covenant of Mayors.

### ***Conclusions and recommendations - how to prepare an effective CO<sub>2</sub> emissions inventory?***

Ian (ICLEI) reminded partners of some key principles for climate programmes:

- Standard accounting principles - relevance, completeness, consistency, accuracy and transparency should underpin reporting inventories & reductions
- Monitoring and reporting is essential to ensure ongoing LG management and governance support and to allow aggregated global achievements from actions.
- Mitigation action processes should include monitoring and feedback and adjustment of targets after each cycle.
- Climate change mitigation actions by cities are most successful when they are part of a standard cyclical governance & management process.

Experts' Key Messages:

- Plan with your citizens > the involvement of the local stakeholders during the whole process is one of the key success factor
- Use your natural resources efficiently
- Spend taxpayer's money sustainably
- Protect common global goods: climate & air, water, soil, biodiversity, ..