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Data sharing in the partners' region: Summary of key issues & local needs



DAT4CTION
Collaborating in energy data exchange



Co-funded by the Intelligent Energy Europe
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Prepared by: EVE

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Deliverable title: Data sharing: key issues and local needs

Target group: Regional and municipal authorities, regional energy agencies and other stakeholders working in energy sustainability at local level.

Content: Description of how the regional authorities or energy agencies participating in the project are planning to improve the present framework to support local authorities to gather information needed to monitor sustainable energy action plans.

Relevance to the target group’s needs: the document summarizes the information that the project partners plan to provide to local authorities, the information sources, the main problems to overcome for accessing and sharing information and the proposed solutions.

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For further information visit:

www.data4action.eu

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Facilitating public authorities access to energy data for better implementation and monitoring of SEAP actions through effective and structured collaboration with energy data providers

Data sharing in the partners' regions

Summary of key issues & local needs

January 2016



Co-funded by the Intelligent Energy Europe
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Introduction

Data4Action aims to mobilize energy data providers and public authorities in the project partners' regions to set energy data exchange collaboration models that support the implementation and monitoring of sustainable energy action plans (SEAPs). The first phase of the project included the exploration of ways to improve public authorities' access to energy data in this context.

Regional roundtables have been the starting point for reviewing public authorities' data needs and constraints for sharing these data. Partners have examined their regional frameworks analyzing the availability of local and accurate energy data for SEAPs, identifying the key stakeholders that may provide or facilitate access to data and the driving forces for engaging data providers or issues that may be perceived as critical by the stakeholders, such as quality of data, commercial sensitivity or privacy.

Partners have reported their findings in the detailed reports "Key issues about data sharing for sustainable energy" that are available for local stakeholders. These reports aim to establish the basis for the work that the partners will carry out in the project, providing the information that will be used to help energy facilitators to understand the data needs in their countries and municipalities to be aware of data needs and identify data sources in the subsequent project work.

Summaries of the regional reports have been prepared in order to help better understanding the general European picture in this subject and identifying common issues that will be useful for regional authorities, energy agencies or other stakeholders that support local authorities in their efforts to plan action in sustainable energy and greenhouse gas emission reduction. The present report collects and summarizes the factsheets prepared for each participant region.

Situation and objectives in partners' regions

All the regional factsheets provided in the annex have a similar structure, offering details about the type of information that project partners have planned to provide local authorities, the availability of information sources, the main problems to overcome for accessing and sharing information and the proposed solutions. The following table highlights the key ideas about the situation in the partners' regions on energy data sharing.

Region	Key issues about data sharing for sustainable energy action plans
Rhône-Alpes	<p>Energy data sharing practice in the region of Rhône-Alpes is well developed. However, there is margin for improvement, for example relating the biomass produced and the biomass converted to energy, since data is often dispersed in various small organizations.</p> <p>Among the objectives for the regional and environment energy agency RAEE within Data4Action is to develop a "Sankey diagram" with the data provided by the local partners, helping to visualize the biomass material and energy flows from forest to final use.</p>
Kent Region	<p>Some of the key interests of the Kent region regarding energy data relate to national targets on reduction in greenhouse gas emissions and uptake of renewable sources of energy, which form part of a transition toward a low carbon society.</p> <p>Data4Action is enabling KCC to address gaps in knowledge where supporting evidenced based decisions is needed, for example around the energy consumption and generation profile.</p> <p>The latest revised version of the Kent Environment Strategy builds on previous work and raises as a priority the need to centrally collate an evidence base of data and information that can be used to develop and influence policy, projects and actions in a focussed and pragmatic approach.</p> <p>The key objective of the project for the county of Kent is to establish a central data and intelligence observatory (hub) that will underpin and support evidence based decision making, policy and project development for the county across environment and related energy, health and economic outcomes.</p>
Zlín Region	<p>The regional energy agency EAZK is about to improve the energy data sharing in the Zlín region with the creation of an energy observatory. The main problems to solve are the limited interest in the Covenant of Mayors (COM) initiative (currently only 5 municipalities have signed the COM in the Czech Republic, none of them in the Zlín region) and the unavailable or low quality data from some data providers.</p> <p>The creation of a data center will improve the access to energy data at regional and local level, so that the Sustainable Energy Action Plan (SEAP) monitoring becomes easier helping to promote sustainable energy and the COM.</p>

Liguria	<p>Within Data4Action, the regional energy agency IRE SpA is developing an application for the Regional Observatory of Liguria Region (SIRAL) to improve the reliability of the energy data at municipal level and to automatically create the inventories required for the monitoring of the Covenant of Mayors SEAPs. Another objective is to improve the quality of the data, in particular of the RES sector, involving associations of sellers of RES technologies and products.</p> <p>IRE will tackle Liguria region's main problems in the data collection process which are the weakness of information in some sector, the lack of obligations in force for utilities and operators, and finally the lack of financial resources to update the regional observatory.</p>
Nord-Pas de Calais	<p>The region of Nord-Pas de Calais is one of the 5 founding members of the Regional Climate Observatory created in November 2012 and collaborates with all municipalities from the region interested in sharing data. 17 territories of Nord-Pas de Calais (85% of the regional population) are committed in a local SEAP and the observatory provides them with data at the regional and municipal level, in order to establish their baseline emission inventory or to follow up their action plan.</p> <p>Availability of energy data at a small scale (municipality or even neighbourhood) is crucial to target and monitor the actions of SEAPs. Developing approaches using data from various themes (energy consumption, GHG emissions, socio-economic data, and housing data) at a small scale is decisive to improve the efficiency of SEAPs' actions and improve energy planning considering all energy types.</p>
Norrbottn	<p>In Northern Sweden an energy and GHG observatory tool is already working, the "Energy Loupe". This free online tool provides local and regional authorities as well as energy experts with reliable local and regional energy data. The observatory is coordinated by the regional energy agency Nenet to support local authorities in developing and implementing SEAPs, including the elaboration of BEIs and MEIs.</p> <p>Additional work is needed to extend the technical capacities of the observatory and to establish additional partnership agreements with data providers. Technical assistance to municipalities is also needed for data collection for SEAP monitoring activities. Working closer with the municipalities and inform and educate about the "Energy Loupe" is part of the solution too.</p>
Romania	<p>Data collection in Romania is a difficult process hindered by several issues: the lack of detailed energy consumption databases, the insufficient training of technical staff, the quality/reliability of energy data and data confidentiality.</p> <p>This given situation is faced by bringing together the stakeholders working in this field and offering existing win-win collaboration models in the framework of the first Regional Energy Observatory that is being set up in Romania by Alba Local Energy Agency (ALEA). Also great emphasis should be given to the information campaigns and the continuous assistance to the data users.</p>

Basque Country	<p>The objective of Data4Action in the Basque Country is to develop further the existing Local Sustainability Observatory in order to collect and estimate more precise and complete energy information at municipal level and to be the basic tool for monitoring action in COM and LA21 providing more efficient services to municipalities. The regional energy and environmental agencies EVE and Ihobe are collaborating in the project.</p> <p>Some critical issues to overcome are the difficulties to monitor the energy use in their own municipal facilities, the lack of technical capacities and the low confidence in some estimates of energy use, e.g. in the transport sector. Working closer with gas and electricity distribution companies to facilitate the access to the information and improving the tools used for information management are the main results expected for the project.</p>
Metropolitan city of Torino	<p>The Metropolitan City of Torino is engaged since many years in collecting energy data and drafting energy balance and, thanks to its activity as territorial coordinator of the Covenant of Mayor (COM), this initiative is widespread in the metropolitan area. Anyway, the formal constitution of an energy observatory has been necessary to improve all the activities and respond to some specific needs as: the building up of a regional shared data system, the overcoming of some deficiencies in the availability of data at local level, the strengthening of the support given to local authorities.</p> <p>Several problems hinder accomplishing these objectives i.e. lack of technical skills and energy data collection in municipalities, poor information at local level on thermal renewable sources, difficulties to get information from the National Institution and the lack of obligations for data providers in energy data sharing with public authorities.</p>
Plovdiv Region	<p>The Energy Agency of Plovdiv has established the Regional Observatory for Energy, Environment and Climate (ROEEC) in the South Central and South East Region of Bulgaria with the aim to support local authorities in the development, monitoring and evaluation of local actions dedicated to the European 20-20-20 target and other national targets.</p> <p>The ROEEC will address the barriers to obtain the energy data needed for the municipal strategies operating in two levels – the one being a virtual ROEEC that will serve the municipalities to structure and store their data related to energy, environment and climate; and second, as a “living” observatory with EAP experts to process and analyze data. These aspects will be supported by promotion and dissemination activities to the various stakeholders – local authorities, institutions, municipal experts, wide public, etc.</p> <p>However, there are obstacles to overcome such as the strict data protection regulations in Bulgaria, the lack of coordination structures, the need for improvement of technical skills in some sectors or the reluctance of institutions to collaborate.</p>

<p>Carlow and Kilkenny Counties</p>	<p>The Carlow Kilkenny Energy Agency (CKEA) is acting as the regional facilitator for the Regional Energy Observatory. CKEA has commitment from both Carlow County Council and Kilkenny County Council with regards to provision of energy data for the observatory. During the course of the project, CKEA will be establishing a Regional Energy Observatory that will operate under the website energyhub.ie</p> <p>This website will facilitate stakeholders (local authorities, SMEs, utilities and interested bodies) to have access to accurate regional energy data.</p> <p>Both Carlow County Council and Kilkenny County Council have signed the CoM. The provision of an accurate baseline for CO2 emissions and the monitoring of the action plan are requirements of the CoM that will be enabled through the creation of the observatory.</p>
<p>Greece</p>	<p>The Covenant of Mayors initiative is gaining momentum in Greece and as a result an increasing number of local authorities need local energy data for energy planning. Currently there are no national or regional observatories, energy agencies or other public bodies in Greece that provide local energy data to municipalities. Energy data providers are not legally obliged to collaborate with such public bodies or local authorities to provide energy data, unless this relates to “own consumption data”. Thus, energy data sharing is not an established practice.</p> <p>The Data4Action observatory in Greece, which will be integrated within the Technical Chamber of Greece’s structure, will pursue energy stakeholders’ collaboration to facilitate data exchange and assist municipalities in developing and monitoring Sustainable Energy Actions Plans.</p>

ANNEX

DATA SHARING: KEY ISSUES & LOCAL NEEDS

FACT SHEETS FOR PARTNERS' REGIONS

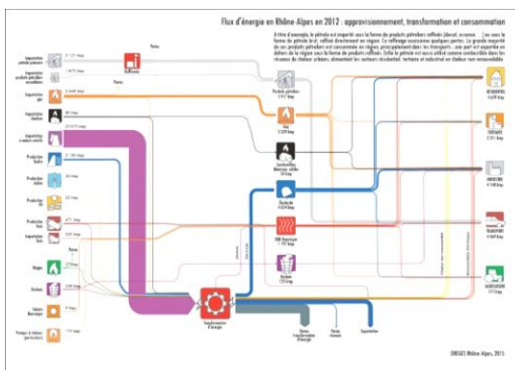
DATA4ACTION in Rhône-Alpes, FR

Data Sharing: Key Issues & Local Needs

06.08.2015

Introduction

The main objective of the Data4Action project is to improve local authorities' access to energy data. Organizations from eleven different European countries participate in this project, which is co-funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in Rhône-Alpes.



Objectives

The project focus in Rhône-Alpes is in improving the knowledge of the material and energy flows due to use of biomass for energy production, at local level. Approach is first developed with a territory around the “Parc Naturel du Massif des Bauges”

Sharing information on sustainable energy in Rhône-Alpes

The approach consists in developing a “Sankey diagram”, helping to visualize the biomass material and energy flows from forest to final use. This diagram is developed on an iterative approach, with the data provided by the local partners.

Main partners are:

- Parc Naturel Régional du Massif des Bauges
- Communauté d'agglomération d'Annecy
- Chambéry Métropole
- Pôle d'Excellence Bois
- ASDER
- PRIORITERRE
- Communes Forestières de Rhône-Alpes

This action will provide a support to the local authorities to monitor some actions of their respective SEAPs.

Sources of information at local level

Energy	Sector	Information source	Quality
Wood	All	Representative of national state at district level – Data on total wood production, with distinction between public and private owner.	Good
Wood energy consumption	All	Model developed with the regional observatory (OREGES), based on ratio (energy consumption factors depending on kind of households, main fuel used, etc...) and statistics on households	Good
Wood energy production	All	Data collection based on subsidies at regional level, project monitoring at local level, etc...	Good for some kind of equipments
Localization and main data on stakeholders (retailer, distributor, etc...	All	Data based on a survey done by PEB (Pôle d'Excellence Bois), whose results are used for the DATA4ACTION project	Good

Main problems to overcome

Data on biomass produced, and converted to energy are very difficult to gather, since they are often dispersed in various organizations, some of them not working on energy issues.

Discussion between partners around a “Sankey diagram”, showing the material energy flows from the forest to the final use, enable all the participants to visualize the flows and elaborate an analysis of the situation in a collaborative approach. Win-win approach is obvious, since sharing its data help to build the scheme.

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DATA4ACTION in Kent, UK

Data Sharing: Key Issues & Local Needs

July 2015

Introduction

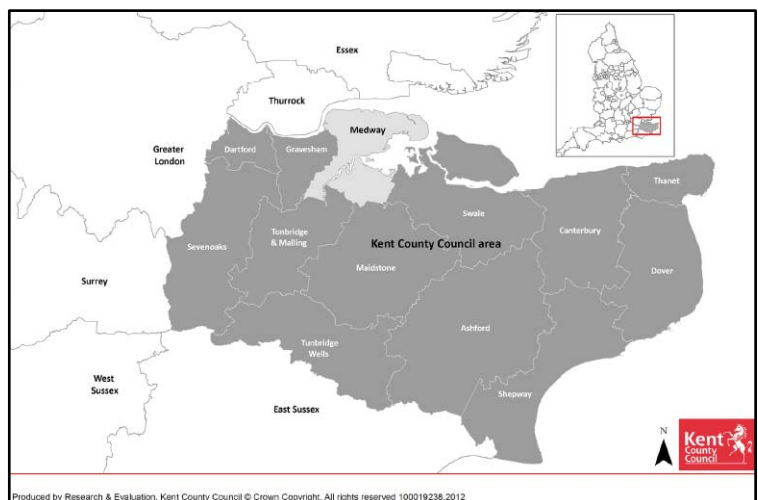
The main objective of the Data4Action project is to improve local authorities' access to energy data. Organizations from eleven different European countries participate in this project, which is co-funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in Kent.

Objectives

The key objective for the county of Kent is to establish a central data and intelligence observatory (hub) that will underpin and support evidence based decision making, policy and project development for the county across environment and related energy, health and economic outcomes.

Sharing information on sustainable energy in Kent

Kent County Council (KCC) is a strategic local authority working in partnership with local authorities, public and private sector organisations across the county of Kent. There are already a number of ways that data and information is shared across these partners relating to some common environmental, social and economic interests.



The Kent Environment Strategy and its delivery plan are important partnership documents for the county. They document the key challenges the county faces to its environment, health and wellbeing of residents and economy from environmental change and growth in population and infrastructure. To ensure that our priorities and actions are focussed and pragmatic we need to ensure that we take an evidenced based approach and continue to engage with a range of stakeholders from across the public, private and community sectors.

Some of the key interests regarding energy data relate to national targets on reduction in

greenhouse gas emissions and uptake of renewable sources of energy, which form part of a transition toward a low carbon society. This means that in the context of planned growth across the county additional low carbon and appropriate renewable energy infrastructure, as well as an increase in uptake of energy efficiency initiatives, will be needed across the domestic, private and public sectors.

To support this, Data4Action is enabling KCC to address gaps in our knowledge where we need to support evidenced based decisions and influencing, for example around understanding our energy consumption and generation profile.

The latest revised version of the Kent Environment Strategy builds on previous work and raises as a priority the need to centrally collate an evidence base of data and information that can be used to develop and influence policy, projects and actions in a focussed and pragmatic approach.

Sources of information at local level

Data	Level data available at	Provider	Gap*
CO ₂ emissions	County and local	Central Government (DECC), Local Authority energy usage including schools	<ul style="list-style-type: none"> Sector based analysis and application
Fuel Poverty and energy data	County and local	Central Government and Local Authorities	<ul style="list-style-type: none"> Central database of existing housing energy data
Renewable energy generation	County	OfGEM (energy regulator)	<ul style="list-style-type: none"> Measure of renewable energy generated Measure of number of installations
Air quality	County and local	Kent and Medway Air Quality Partnership (KMAQP) – local authority network	<ul style="list-style-type: none"> Transport related emissions Health impacts

Main problems to overcome

A key gap for the county is ensuring that decision makers have access to clear and understandable data and information, providing key evidence for appropriate strategies, plans and actions. This challenge is being met through the Kent Environment Strategy where the first theme is dedicated to bridging our gaps in understanding our risks and opportunities, with a priority to develop a central evidence base that addresses key priorities to support decision makers. Development of this evidence base will be in collaboration across partners in Kent and Medway to ensure it addresses priorities for the County and enables evidence based decision making for improved energy efficiency and generation, supporting delivery towards national and EU targets in carbon reduction.

Two key problems to overcome are given below:

Resource: in a period of reducing resources how can the central evidence base be financed and maintained and developed into the future.

Perception: there can be misconceptions with renewable energy technology, how can the evidence base be used to mitigate this and how can it be used to support investment in long-term decisions and investments such as with district heating schemes.

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Data Sharing: Key Issues & Local Needs

24/08/2015

Introduction

The main objective of the Data4Action project is to improve the access of local authorities to sustainable energy data. Energy agencies from eight different European regions participate in this project, which is funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in the Zlín Region.



Objectives

As a part of this project memoranda of cooperation will be signed between different actors. Mutual cooperation between data providers, public authorities and observatories will help to build the data center in the Zlín Region needed for technical advice, exchange of experience in energy planning and creating a database of energy data. The data center will help public administration in monitoring and implementation of their SEAPs.

Sharing information on sustainable energy in the Zlín Region

The region needs to stimulate community interest in participating in the Covenant of Mayors. Currently only 5 municipalities signed the Covenant of Mayors in the Czech Republic, none of them in the Zlín Region. It is also necessary to motivate and involve local action groups in promoting the transition to a low carbon economy in all sectors. Such measures include increasing the level of renewable energy, reducing energy consumption, promoting smart energy system etc.

The Zlín Region includes 307 municipalities and EAZK cooperates with most of them. The main energy data are consumption of electric power, natural gas, heat and biomass in municipal facilities. These data are needed to create local SEAPs. Therefore, it is necessary to create a united database of these consumptions and set up a system for obtaining and updating the necessary data. Processed data will be available for municipalities. They can be used as a baseline for creation of sustainable energy action plans or monitoring their performance.



Sources of information at local level

Sectors	Data needs	Information source	Quality
Municipal buildings operated by local authorities	List of municipal building	Inventory, but some local authorities do not have a full list of all buildings they manage.	Medium
	The consumption of electricity, natural gas, thermal energy and biofuel of individual buildings	Data are deducted from invoices.	High
Public vehicles that the local authority owns or operates	List of public utility vehicles, information on the type of vehicle, fuel used and consumed	Information from fleet manager and the vehicle paper	High
Public lighting	The number and type of lamps, its installed capacity	Manager of public lighting	High
	Electricity consumption	Electricity provider invoices	High
Residential and tertiary sector	Consumption of electricity, natural gas, heat	Data access on request from energy provider	Not available
Renewable energy sources	Information on RES installations	RES register includes the list of licenses issued. The data is free on the website.	High
Transport	The number of vehicles, the type of fuel and fuel consumption.	On request by the traffic authority or individual users.	Not available

Main problems to overcome

The main problems encountered are unavailable or low quality data from some providers. Creating a data center is supposed to simplify the access to energy data at regional and local level. Collaboration agreements with data providers are foreseen to guarantee the quality of input data, the centralized database of consumptions will unify the data processing and analysis of SEAPs.

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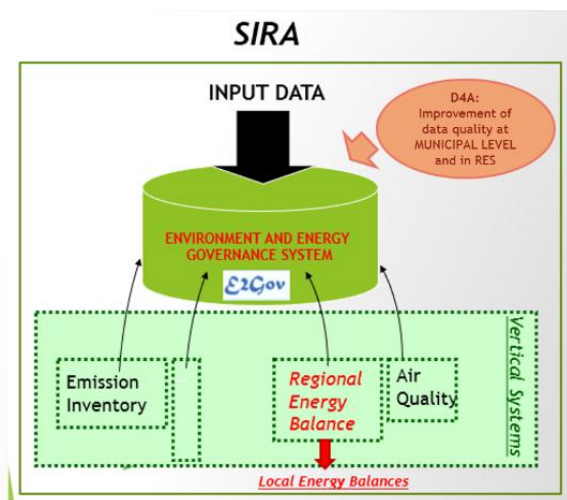
DATA4ACTION in Liguria region, IT

Data Sharing: Key Issues & Local Needs

September 2015

Introduction

The main objective of the Data4Action project is to improve local authorities' access to energy data. Organizations from eleven different European countries participate in this project, which is co-funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in Liguria Region.



Objectives

The implementation of the Regional Observatory of Liguria Region (SIRAL) within D4A aims to:

- develop a targeted application (ongoing) for the municipalities in order to allow them to collect and manage the energy data related to their own properties, to improve the reliability of data in the Regional Observatory, integrating these municipal level data in the system, and to automatically generate Covenant of Mayors Baseline and Monitoring Emission Inventories (BEI, MEI);

- improve the quality of the data, in particular of the RES sector, involving associations of sellers of RES technologies.

Sharing information on sustainable energy in Liguria

The Regional Database, originally created in 1997 to prepare the polluting emissions inventory, is coordinated (also for the data collection process) by the Liguria Region with the support of IRE SpA and other technical partners. It's now able to support the regional energy planning activities providing data for the energy balances at regional, provincial and local levels for the years 2005, 2008 and 2011. Another important field of operation is related to the Covenant of Mayors initiative that is widespread in the region (more than 100 municipalities involved out of 235 existing in Liguria): final energy consumptions data from SIRAL are used by IRE to prepare BEIs (most of which are referred to the 2005 as baseline year) and it allows to make congruent comparisons among the different situation in the regional territory.

Sources of information at local level

Energy	Sector	Information source	Quality
Electricity	Household, public lighting	Local level data municipal provided by national operators (GRTN/Terna). The main national distributor (Enel Distribuzione) is now starting to provide data at municipal level for each CoM sector.	High
Electricity	Industry, Agriculture, Tertiary	Questionnaires to punctual plants using great amounts of electricity; Local level data municipal provided by national operators (GRTN/Terna).	High
Natural gas	Industry	Questionnaires to punctual plants using great amounts of fuel and data from the main energy distributors (SNAM Rete Gas..)	High
Natural gas	Household, tertiary, public administration	Data from the main energy distributors per municipality. The sharing of tertiary and municipal sectors is estimated on the basis of electrical consumptions.	High
Coal	Industry	Questionnaires to punctual plants using coal	High
Diesel oil, gasoline, LPG	Transport	Top-down estimation starting from provincial data provided by the National Oil Bulletin and products sales by Province. Use of a specific estimation model for transport sector (E2road) applying different type of traffic contexts and vehicles	Medium
Oil products	All sectors	Questionnaires to punctual plants using great amounts of fuel, to the main deposits in the region about the sales and to the Port operators (diesel consumptions); top down estimation from provincial data provided by the National Oil Bulletin.	Medium
Solar thermal	All sectors	Data from some punctual plants and estimations from different sources (regional fundings and tenders)	Low
Biomass	Households	Regional statistics from ISTAT (National Institute of Statistics) and national surveys.	Low
Solar PV, Wind, hydro, waste biogas	Electricity production	Data by surveys on all the regional punctual plants (Hydro, wind and waste biogas). Data of the PV energy production for each municipality (National database- GSE Atlasole).	High

Main problems to overcome

Main problems to face in the data collection process	Proposed solutions
No specific obligations are in force for utilities and operators so the data sharing process was founded on a voluntary basis so far.	More detailed obligations for the data providers officially formalized by National law.
Very poor information at local level for the use of thermal RES (heat pumps, biomass and solar thermal).	Involvement of associations of sellers of RES technologies/ products through dedicated meetings.
Just estimations for the energy data of municipal sector.	Targeted application of the Regional Database for the municipalities (see above D4A objectives).
Lack of resources to improve and update the Regional observatory, also because it is not compulsory by the law.	EU funding and projects.

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DATA4ACTION in Nord-Pas de Calais, FR

Data Sharing: Key Issues & Local Needs

(August 2015)

Introduction

The main objective of the Data4Action project is to improve local authorities' access to energy data. Organizations from eleven different European countries participate in this project, which is co-funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in Nord-Pas de Calais.

Objectives

For the Région Nord-Pas de Calais, this project aims at facilitating the cooperation between the energy distribution network operators or DNOs (ErDF, GrDF, Dalkia) and the local authorities through the Observatory Nord-Pas de Calais, by developing collaboration agreements. It also aims at demonstrating operational use of this data for defining, targeting and follow up the actions of the SEAPs.



Targeting SEAP actions using DNO data in ReGES/Explicit methodology

Sharing information on sustainable energy in Région Nord-Pas de Calais



The Région Nord-Pas de Calais is one of the 5 founding members of the **Regional Climate Observatory**¹, which has been created in November

2012.

The Climate Observatory is meant:

- To be a platform for exchanges of information related to energy, GHG and climate, and to facilitate the dissemination of information.
- To gather and produce information at regional and local level on the different indicators regarding energy and climate;
- To facilitate energy and climate data provision

¹ See Nord-Pas de Calais climate observatory : <http://www.observatoire-climat-npdc.org/fr>

- To ensure the collection and follow-up of knowledge on methodological aspects through the use of tools and indicators to assess the impact of policies & measures.

The observatory is in the service of its founding members and partners, of the public authorities, of the economic stakeholders, decision makers, general public and press.

Although only 4 local authorities have signed the partnership agreement with the Observatory (Métropole Européenne de Lille, Pays d'Artois, SCOT Sambre Avesnois, SCOT Grand Douaisis), the Observatory collaborates with all requesting municipalities from the region, broadcasting data directly from its website interface, or under specific request.

17 territories of Nord-Pas de Calais, representing 85% of the regional population, are committed in a local Sustainable Energy Action Plan, which means approximately 3,5 millions inhabitants. The Observatory provides them with data at the regional or at the municipality level, in order to establish their baseline emission inventory or to follow up their action plan.

Sources of information at local level (Municipality level) for energy

Natural gas consumption per user type	2012-2013
Heating networks	2005-2013
Biogas plants	2013
Photovoltaic systems production	2012
GHG emissions linked to landcover change	2005-2009

Main problems to overcome

Identified problems	Proposed solutions
Availability of natural gas and electricity consumption data at a small scale (municipality or even neighbourhood)	Developing win-win partnership with the DNOs Legislative evolution through the new national "Energetic Transition law"
Difficulty to obtain information related to energy distribution networks (electricity, gaz, urban heating). Information on location and level of stress of these network is a key information to build a sustainable energy policy for the local authorities.	Demonstration of methodologies using network information crisscrossed with other data from various themes (energy consumption, GHG emissions, socio-economic data, and housing data) in order to feed the SEAP.
Data management and dissemination : growing number of demands from the local authorities.	A database management system is under construction, and the web portal is upgraded so that to allow the local authorities to directly download a wider range of datasets.

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DATA4ACTION in Norrbotten and Västerbotten region, Northern Sweden, SE

Data Sharing: Key Issues & Local Needs

(2015-06-30)

Introduction

The main objective of the Data4Action project is to improve the access of local authorities to sustainable energy data. Energy agencies from eight different European regions participate in this project, which is funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in Norrbotten and Västerbotten region, Northern Sweden.



Objectives

The main target for Norrbotten and Västerbotten region within Data4Action is to improve and further develop the Energy Loupe tool. Nenet, Norrbotten Energy Agency will become the one-stop-shop data center for all potential users in the region.

Sharing information on sustainable energy in Norrbotten and Västerbotten region, Northern Sweden.

In Northern Sweden an energy and GHG observatory tool, the “Energy Loupe” is already existing. This free online tool for the counties Norrbotten and Västerbotten with their 29 municipalities, provides local and regional authorities as well as energy experts with reliable local and regional energy data. It covers final energy use and direct CO2 emissions for all relevant sectors. The observatory is coordinated by the regional energy agency, Nenet. In 2014 Norrbotten County Council became the first regional CoM coordinator and Nenet is the operative structure to support local authorities in developing and implementing SEAPs. This includes the work to support local authorities when elaborating BEIs and MEIs. 7 out of 14 municipalities in Norrbotten are CoM signatories 4 of these have submitted their SEAP. In Västerbotten 3 of 15 municipalities are CoM signatories. All 3 have submitted their SEAP.

Sources of information at local level

Energy	Sector	Information source	Quality
All energies	Areal sector, Industry, Public, Transport, Service, Household	SCB (the national public Swedish statistics agency). Energy use data per county/region and municipality. Gives an overview of electricity and district heating production plus a picture of the final energy consumption in the Swedish counties and municipalities. Data is available per sector and per energy source.	Medium
Emission	All sectors	The "RUS" data base: National database of air emissions, including GHG. Emission statistics presented in the database is available on the county and municipal levels. The database is based on Sweden's official emissions statistics, reported inter alia to the UNFCCC and Air Pollution Convention	Medium
All energies	All sectors	Cooperation with local and regional energy companies/providers	High
All energies	Industries	Cooperation with local and regional companies to fill in gaps due to confidentiality	High
All energies	Public sector	The National program on energy efficiency on local and regional levels. 98% of all Swedish municipalities were participating in this program. Municipalities that participated in the national energy efficiency program had to accept a number of rules including an advanced reporting system. This leads to the result that detailed energy use data for the public sector is available for almost all Swedish local and regional authorities.	High
District heating	All sectors	Most of the district heating plants and grids are locally owned, often public owned. This makes reliable local data relatively easy to access. In addition the umbrella organization for Swedish district heating companies is offering detailed statistics for all district heating plants and grids in Sweden	High

Main problems to overcome

Additional work is needed to extend the technical capacities of the observatory and to establish additional partnership agreements with data providers. Technical assistance to municipalities is also needed for data collection for SEAP monitoring activities. Working closer with the municipalities and inform and educate about "the Energy loupe" is part of the solution of above mentioned problems.

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DATA4ACTION IN ROMANIA

Data Sharing: Key Issues & Local Needs

11.01.2016

Introduction

The main objective of the Data4Action project is to improve local authorities' access to energy data. Organizations from eleven different European countries participate in this project, which is co-funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in Romania.



Objectives

D4A will improve the access of LAs to energy data by enhancing collaboration between energy providers, LAs and other stakeholders as well as by creating the first Regional Energy Observatory in Romania. This in turn will ultimately mean better implementation and monitoring of the SEAPs elaborated by Romanian municipalities.

Sharing information on sustainable energy in Romania

Alba Local Energy Agency - ALEA, plays the role of the energy data facilitator, alongside with other local authorities that are involved in this process. The energy data is needed mainly for the new energy observatory structure that operates inside ALEA.

ALEA will process the raw energy data that will be adapted for use in the SEAPs for the Local Authorities that have signed the Memorandum of Cooperation with ALEA and the Observatory. Currently we are working with 12 Local Authorities that are all involved in the CoM.



First Regional Capacity Building Workshop @ ALEA, 12th May 2015

Sources of information at local level

Energy	Sector	Information source	Quality
All energies	Municipal facilities	Invoice-by-invoice analysis by the municipality	High
Electricity	Per sector	Electricity distribution system operator provides the information divided by sectors	High
Natural gas	Per sector	Natural gas distribution system operator gives the information divided by type of consumer	High
Diesel oil, gasoline	Local public Transport	The local public transportation company will provide fuel consumptions of their fleet	High
Diesel oil, gasoline	Municipal fleet	Alba Municipality will provide information about own fleet and related fuel consumption	High
Diesel oil, gasoline	Private & commercial transport	Local Authorities, Alba Environmental Protection Agency, Romanian Road Authority	Low
Biomass (wood)	Households heating	Local authorities, regional surveys	Low
Solar PV, Wind, hydro	Electricity production	Local energy production data from Local authorities	Medium

Main problems to overcome

Data collection in Romania is a difficult process hindered by several issues: the lack of detailed energy consumption databases, the insufficient training of municipal technical staff, the quality/reliability of energy data, data confidentiality which is coupled with the position of the energy providers being highly aware of their competitors on the market.

Problem in energy data sharing	Proposed solution
The lack of detailed energy consumption databases	New monitoring for essential consumption data monthly (municipal buildings, public lighting)
Insufficient training of municipal technical staff	Organising training sessions with experts at municipal level (capacity building workshops)
The quality/reliability of energy data	Multiple inputs or analysis methods. Measured feedback at random consumption points.
Data confidentiality	Consumption's data to be provided by DSOs in aggregated form only, per consumption sector (municipal, residential and tertiary).

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DATA4ACTION in The Basque Country, ES

Data sharing: key issues & local needs

31/07/2015

Introduction

The main objective of the Data4Action project is to improve local authorities' access to energy data. Organizations from eleven different European countries participate in this project, which is co-funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in the Basque Country.



Objective

The objective of Data4Action in the Basque Country is to develop the existing Local Sustainability Observatory in order to collect more precise and complete energy information at municipal level and to be the basic tool for the monitoring of COM and LA21, through the collaboration between the regional energy and environment agencies EVE and Ihobe providing more efficient services to municipalities.

Sharing information on sustainable energy in the Basque Country

The Local Sustainability Observatory gathers valuable information that is used to assess the effort and effectiveness of local sustainability policies in the Basque Country. The information provided by the Action Plans and sustainability indicators is managed by a computer tool called MUGI 21, developed by Udalsarea 21, the Basque Network of Municipalities towards Sustainability, which is available to all its member municipalities. This application enables an integrated management of the Local Agenda 21 process, while at the same time exporting data to the MUGI 21 environment of the Udalsarea 21 Technical Secretariat, which coordinates the Basque Country Local Sustainability Observatory. It also enables users to extract indicators for the network as a whole in order to gain a global overview of the progress of the various processes. Based on this vast and valuable database, the network publishes a biennial Local Sustainability Report which outlines and interprets the results obtained, providing average indicators and serving as feedback and reference for the local processes themselves. In the future, 19 municipalities that have joined the Covenant of Mayors in the region will be able to use the tool for the monitoring of the Sustainable Energy Action Plans and calculate green house gas emission for reporting the progress of the plan. This tool will become the reference for sustainable energy data collection and supply at local level for all the municipalities in the Basque Country.



Co-funded by the Intelligent Energy Europe Programme of the European Union

Sources of information at local level

Energy	Sector	Information source	Quality
All energies	Municipal facilities	For some sectors the resellers provide tools to summarize all the invoiced energy during a period. If not, invoice-by-invoice analysis by the municipality is required.	Very high
Electricity	Per sector	Electricity distribution system operator provides the information divided by sectors	Very high
Natural gas	Per sector	The distribution system operator provides information disaggregated by tariffs, not by sector	High (total) Medium (sectors)
Diesel oil, gasoline	Transport	Top-down estimation knowing the total use at a provincial level, using auxiliary indicators like no. of cars.	Medium
Heating oil, LPG	All sectors	Top-down estimation knowing the total use at a provincial level, using auxiliary indicators.	Medium
Solar thermal	All sectors	Estimation from different sources: grants and the new building certification database.	Medium
Biomass	Households	Surveys, building energy certification database.	Low
Solar PV, Wind, hydro	Electricity production	Estimation derived from a database of installed capacity per municipality	Medium

Main problems to overcome

- Some municipalities have a great number of electricity consumption points; there is a need for efficient tools to gather and organize the total electricity consumption in the municipal facilities.
- The top-down approaches carried out to calculate the use of transport fuels and non-gridded fuels hardly reflect the efforts made by the municipalities to improve sustainability, as the information available to make the estimates has a low quality.
- Small municipalities generally have a lack of technical capacities to have a complete control of energy information and make the best use of it.
- There are different approaches to work in energy sustainability at municipal level, with different information needs.

To overcome these issues, it is necessary to work with the local gas and electricity distribution companies to improve the quality of the data; tools need to be developed to facilitate access to the information from the electricity and gas meters, to estimate the use of un-gridded energy use at a municipal level, and to have common formats and platforms for monitoring energy use at a municipal level and for helping access to this information.

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DATA4ACTION in Metropolitan City of Torino, IT

Data Sharing: Key Issues & Local Needs

30th August 2015

Introduction

The main objective of the Data4Action project is to improve local authorities' access to energy data. Organizations from eleven different European countries participate in this project, which is co-funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in the territory of Metropolitan City of Torino.



Objectives

Even if the Metropolitan City of Torino is engaged in collecting energy data and updating final energy consumption balance and Emission Inventory since 2000, the participation in the DATA4ACTION Project will strengthen the existing activity through the sharing of experiences with other European countries. The formal constitution of an Energy Observatory is the first and the most important step to respond to the several needs, the most important of which are:

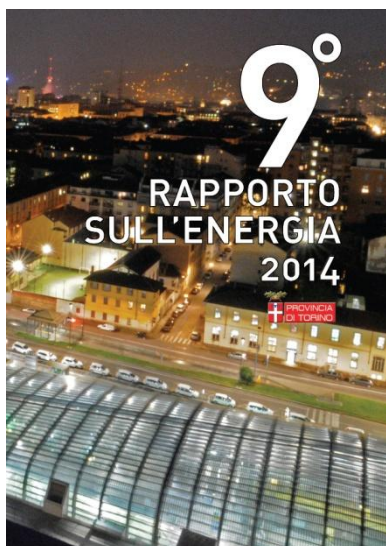
- the widespread of the Covenant of Mayor Initiative at regional level and the will of Public Institution to support a further development of such Initiative;
- the will of Regional Public Authorities to build up a shared data system among institution in charge of energy policies.
- the overcoming of some deficiencies in the availability of data at local level, mainly related to oil products and thermal renewable energy sources.

Several actions should be further implemented as a way to improve the activities of the Energy Observatory, as listed in the following paragraphs, which will mostly carried out in the framework of Data4Action project:

- Data collection, every 2 year, from data providers (energy distributors and producers) in the metropolitan territory of Torino, from statistical offices operating at national and regional level and from the main end-users at local level;

- Editing of periodic Energy Reports with the update of the energy balance and emission inventory related to the use of energy;
- Strengthen data collection of the Local Authorities and define common and standard methods of estimating/analysis;
- Improve the effectiveness of the supporting activities toward Municipalities in the framework of the COM Initiative;
- Training activities addressed to Local Authorities and other potential Energy Observatories;
- Signing of agreements with stakeholders, in particular with the data provider;
- Mapping main data from power plants operating at metropolitan level;
- Carrying out assessment studies for energy saving potentials and energy infrastructures;
- Trying to explore big data digging as a way to elaborate more reliable and fast estimation of data deficiencies on thermal renewable at local level;
- Enter the obligation to provide information in calls for gas supply;
- Create a web platform where it is possible to share information and best practices;
- Peer learning activities with other European Energy Observatories;
- Strengthen relationship and EU networks.

Sharing information on sustainable energy in Metropolitan City of Torino



The Metropolitan City of Torino is the local authority engaged in collecting energy data related to its territory, and updating final energy consumption balance and Emission Inventory since 2000. During this period 9 editions of an Energy Report have been released: the report provides a general overview of the global trends in energy consumption and production, the monitoring of the CO₂ related emissions and forecast for following years. The Energy Report is a public document, published on the Metropolitan City website. The last one was presented during the “Energy day” organized the 17th of December 2014, in the framework of D4A project.

Most of data are collected at Municipal level, so that such activity helped the Metropolitan City to build up an energy database useful for Municipalities. Since February 2010 the Metropolitan City of Torino became Territorial Coordinator of the Covenant of Mayors Initiative and the activity of data collection is strictly connected with it and with the technical services provided to the signatories. First of all a Baseline Emission Inventory (BEI) for all the 315 LAs of the metropolitan territory was elaborated: it is delivered by request of the Municipalities free of charge and within few working days. This activity will be improved and directly available online during the implementation of Data4Action project. Furthermore TOMETRO is also providing technical assistance in order to draft customized SEAPs and elaborate development scenarios for the final energy consumptions of the Municipalities. Up to now nearly 60 Local Authorities joined the COM and are supported by the Metropolitan City of Torino. So far nearly 50 SEAPs have been approved using the energy observatory data center and guidelines. Some of those already started the monitoring phase, exploiting again the data collection activity carried out by the Metropolitan City of Torino.

Sources of information at local level

Energy	Sector	Information source	Quality
All energies	Municipal facilities	For some sectors the resellers provide tools to summarize all the invoiced energy during a period. If not, invoice-by-invoice analysis by the municipality is required. The smart meters will ease such activity in the future.	Very high
Electricity	Private households Service&commerce Industry Transport Agriculture Public Administration	Electricity distribution system operator provides the information broken down by sectors. Information are also available for sub sector, helping the assessment of data more in details.	Very high
Natural gas	Total per municipality, broken down per type of use	Natural gas distribution system operator gives the information divided by tariffs (centralized heating, cooking, hot domestic water, summer conditioning, heat for process, mixed uses). Estimation for the segregation by sectors is required.	Medium/high
Diesel oil,	Transport	The sales of oil products are available on a	Low/Medium

Energy	Sector	Information source	Quality
gasoline, Heating oil, LPG	Heating Agriculture	Ministerial Bulletin published on a trimester basis and broken down at provincial level. In order to have data at municipal level a Top-down estimation is required, using auxiliary indicators. Estimation must be carried out even to have data broken down for building sector and process heating.	
Thermal Renewables (biomass, solar thermal, geothermal)	All sectors	Estimation from different sources, mainly from Industry Associations and market lobbies. Estimations are required to break down data per sector or per Municipalities. Esteems are made mainly from National data. Ad hoc survey can be carried out on the basis of available cost. Data coming from National census might provide very detailed information as soon as they are made available.	Low
Solar PV, Wind, hydro	Electricity production	Data are taken directly from power plant managers from the largest installations. For small scale plants, data are derived from the National Authority managing the Transmission Network, even though data are provided at least at provincial level.	Medium/High

Main problems to overcome

In the following table main problems facing to collect data, and the proposed solutions are provided.

Problems	Proposed Solutions
Lack of skills in the staff of Municipalities regarding energy balance and CO2 inventories	<ul style="list-style-type: none"> - Capacity building workshops in order to increase the understanding of issues. - Technical centralized support provided in order to harmonize methodology, data and scenarios.
Very poor information at local level for the use of	<ul style="list-style-type: none"> - The standard solution is based on an estimation of data from regional/national database and publications. The

Problems	Proposed Solutions
thermal renewable energy sources	<p>estimation is based on envisaged share of market or using other socio-economic indicators or any other figures that might be considered useful. The level of quality of data is in this case rather low and based mainly on average value.</p> <ul style="list-style-type: none"> - Local surveys are another option. The outputs are fare and interesting, even though the approach based on survey is costly and not replicable often to keep data updated. - Good quality data might come from the assessment of the National census (carried out every 10 years) where in the last one, specific questions on renewables have been introduced. So far data related to 2010 are not available yet. - Within Data4Action an innovative low cost solution is going to be explored. The idea is to use web-based search as a way to break down national data with a higher quality and level of reliability. Methods are still to be fine-tuned.
The National Institution (the Managers of the Electric Transmission Grid, the Manager of National subsidies for RES, the Technical Office for Finance, etc.) are not open to provide data at local level due to privacy constrains and excessive workload.	<ul style="list-style-type: none"> - The standard solution to break data at local level is based on an estimation from regional data, using other information available based on the peculiarity of local Municipalities. - In the future it is envisaged to create a more complex system of indicators in order to obtain more reliable estimations of data.
No obligations in the provision of data have been	<p>Here we figure out a bucket of solutions:</p> <ul style="list-style-type: none"> - The first one is based on informal relationship and

Problems	Proposed Solutions
formalized so far by Public Authorities to local energy operators which give certainty in terms of time and quality availability.	<p>networks established along the years with data providers. Keeping the activity of data collection alive along the years and providing the periodic release of energy Publications spread out the idea that providing data is something useful and meaningful. Such situation helps the improvement of the cooperation along the years;</p> <ul style="list-style-type: none"> - The second approach is more “command and control”. The provision of data is made compulsory whenever possible. Mainly during the permitting procedures (for power plant managers) and during the selection procedure for local distributors (specific clause are introduced in the call for tenders). - Finally, partnership agreements can be an option for residual cases and specific needs.
No obligations are fixed for Local Authorities to set up energy management systems and collect energy data from their own consumptions	<ul style="list-style-type: none"> - Capacity building workshops in order to increase the understanding of issues. - Technical centralized support provided in order to collect data and process the information. An online tool, called Enercloud, has been released for empowering the energy management of public building and street light among Municipalities. Such tool and its use must be straightened and centralized in order to be more effective in the future.

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DATA4ACTION in Plovdiv Region, BG

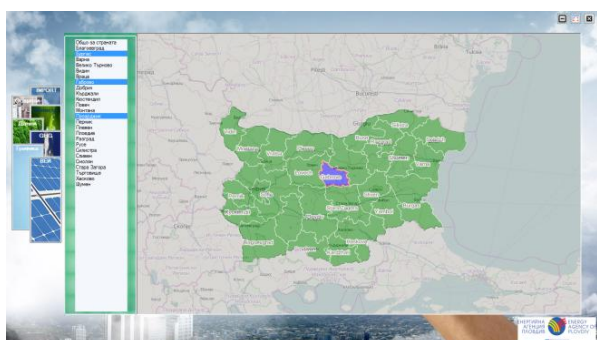
Data Sharing: Key Issues & Local Needs

Introduction

The main objective of the Data4Action project is to improve local authorities' access to energy data. Organizations from eleven different European countries participate in this project, which is co-funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in Plovdiv Region.

Objectives

The Energy Agency of Plovdiv has established the Regional Observatory for Energy, Environment and Climate (ROEEC) in the South Central and South East Region with the aim to support local authorities in their development, monitoring and evaluation of local actions dedicated to the European 20-20-20 target and other national targets.



Sharing information on sustainable energy in Plovdiv Region

The ROEEC will address the barriers to the data needed for the priority municipal plans and strategies, i.e. EE and RES plans (SEAP), air quality plans and waste management plans. It will focus on defining the data sets and data formats, methodologies and approaches to data collection, methods and practices

in analysing data.

The ROEEC will operate in two aspects – the one being a virtual ROEEC – i.e. tool for data collection and structuring; and, second, as a “living” observatory with experts to process and analyse data. The ROEEC as a virtual tool will serve the municipalities to structure and store their data related to energy, environment and climate. The living ROEEC will be comprised of the EAP experts – the Integrated office for air quality monitoring and modelling, the Laboratory for research and certification of solid biomass and compost, Energy Monitoring and Management, Development of strategies and plans. The activities of both aspects of the ROEEC will be supported by promotion and dissemination activities to the various stakeholders – local authorities, institutions, municipal experts, wide public. etc.

Sources of information at local level and main problems to overcome

The sources of information on municipal level are municipal measurements, ministry records of the environmental measurements, energy providers data, energy producers data, energy associations, energy agencies, statistical offices. Still, in Bulgaria data is strictly protected and there're regulations on data sharing.



The data access is regulated by law in most cases. The major problems to overcome are the administrative barriers to access data, the inconsistencies in data sets, lack of data or data gaps, low level of granularity.

Data	Sector	Level	Data provider	Data Quality
Energy Consumption	All sectors, except residential	Room/unit to urban level	Local energy utility, building owners, facility managers; through surveys and interviews; through surveys, estimation and extrapolation	Good
Energy consumption	Residential	Apartment to urban level	Local energy utility, building/ apartment owners; through surveys and extrapolation; through surveys, estimation and extrapolation	Poor
Local electricity production	All sectors	Installation level	Local utilities, DSO, TSO, national energy company, national sustainable development agency, production unit owners; through public registers and upon request	Very good
Local heating production	All sectors	Installation level	Local utilities, installation owners; through surveys and interviews	Poor
Air quality	-	City level	Local authorities, local environmental agencies, national environmental agency; modelling and estimation of data available	Good
Waste management	-	City level	Local authorities, local environmental agencies, national environmental agency; extrapolation and estimation of data available	Poor

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Data Sharing: Key Issues & Local Needs

25th June 2015

Introduction

The main objective of the Data4Action project is to improve the access of local authorities to sustainable energy data. Energy agencies from eight different European regions participate in this project, which is funded by the Intelligent Energy Europe Programme. This document summarizes the situation and objectives of Data4Action in County Carlow and County Kilkenny, Ireland.



Figure 1 Local Capacity Building Event

Objectives

The main objective is to establish a Regional Energy Observatory, which will support the Local Authorities in the provision of accurate energy data for the region. This data will surpass the information obtainable at the national level as it will account specifically for direct use in the region.

Sharing information on sustainable energy in Counties of Carlow and Kilkenny, Ireland.

The Carlow Kilkenny Energy Agency (CKEA) is acting at the Regional facilitator for the Regional Energy Observatory. CKEA has commitment from both Carlow County Council and Kilkenny County Council with regards to provision of energy data for the Regional Energy Observatory. At present there is no accurate regional energy data available and during the course of the project, CKEA will be establishing a Regional Energy Observatory that will operate under the website www.energyhub.ie. This website will facilitate stakeholders (local authorities, SMEs, utilities and interested bodies) to provide their own energy data, as well as to have access to accurate Regional Energy Data. Both Carlow County Council and Kilkenny County Council have signed to the Covenant of Mayors, which is a European initiative aimed at creating Sustainable Energy Action Plans for the region. Through the Covenant of Mayors, there is a requirement to provide an accurate baseline for CO2 emissions, as well as an ability to measure and verify progress in the reduction of CO2 emissions. The Carlow Kilkenny Energy Agency will disseminate this information via the regional energy observatory website, www.energyhub.ie, as well as through local capacity building events, regional engagement events and national events. Publications around the Regional Energy Observatory and the Data4Action project will also be issued via e-mail, newsletters, press releases and local marketing.



Sources of information at local level

Energy	Sector	Information source	Quality
All Energies	Municipal facilities	This is available via the County Councils in the form of invoices.	Very high
Electricity	Per Region/ Per Meter	ESB Networks has capacity to provide this on an mprn basis (not yet engaged)	Very high
Natural gas	Per Region/ Per Meter	Bord Gais Networks has capacity to provide this on an gprn basis (not yet engaged)	Very high
Natural gas (unmetered)	All Sectors	Local Distributors have capacity to report what was purchased within the region (not yet engaged) – Currently National Data is used to estimate regional consumption, using auxiliary indicators	Medium
Diesel oil, gasoline	Transport	Top-down estimation knowing the total use at a provincial level, using auxiliary indicators.	Medium
Heating oil, LPG	All sectors	Top-down estimation knowing the total use at a provincial level, using auxiliary indicators.	Medium
Solar PV, Wind, Hydro	Electricity production	Estimation derived from a database of installed capacity per municipality	High

Main problems to overcome

Main Problems to Overcome	Proposed Solution
Poor Quality of Data	Predetermination of Data Provision Standards
Lack of Momentum	Clear strategic plan in place through Data4Action to ensure momentum
Engagement of Stakeholders	Regional Events and dissemination of data to ensure active engagement of stakeholders
Data Management & Commercial Sensitivity	Adoption of performance indicators that sanitize data and use of secure portals for data capture

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DATA4ACTION in Greece

Data Sharing: Key Issues & Local Needs

June 2015

Introduction

The aim of the Data4Action project is to **improve local authorities' access to energy data**. Energy agencies and other relevant organizations from eleven different European countries participate in this project, co-funded by the Intelligent Energy Europe Programme. This document summarizes the objectives of Data4Action and the current situation with regards to data sharing in Greece.

Objectives

The project aims to **establish a data exchange collaboration model for public authorities and energy stakeholders**. This will enable the creation of a “one-stop shop” data center / energy observatory in Greece that will **provide energy data to municipalities that are developing or monitoring their Sustainable Energy Action plan (SEAP)**, within the framework of the Covenant of Mayors (CoM) initiative.



D4A Roundtable for energy and public stakeholders

Sharing energy data in Greece



The CoM initiative is gaining momentum in Greece, with more than 105 Signatories to date, whilst there are also 56 municipalities that are on-hold as they have not submitted their SEAPs. Thus, the CoM has mobilized more than a third of the local authorities in Greece, which voluntarily commit to increase the energy efficiency and use of renewable energy sources within their territories, as well as reduce CO₂ emissions by at least 20% by 2020. This is to be achieved by developing and implementing a SEAP. Consequently, it is imperative

that public authorities have access to local data for developing and monitoring SEAPs.

Currently there are no national or regional observatories, energy agencies or other public bodies in Greece that provide local energy data to municipalities. The collaboration of energy stakeholders has been pursued by the Technical Chamber of Greece's structure (TCG) and EPTA, within the framework of the IEE co-funded project SEAP-PLUS. TCG signed Memoranda of Cooperation (MoC) with two key energy providers in Greece to facilitate access to local energy data: the Public Power Corporation S.A. (PPC), the biggest power producer and electricity supply company; and the Public Gas Corporation S.A. (DEPA), the utility responsible for the wholesale, transmission, distribution and supply of natural gas. Therefore, the Data4Action observatory in Greece, which will be integrated within TCG's structure and will be created with EPTA's technical support, will build on these collaborations to enable data exchange and assist municipalities in the development and implementation of SEAPs.

Sources of information

A high level assessment of the data most commonly used in SEAPs in Greece is shown below. The quality of the data varies significantly, depending on the type of data, data sources, the disaggregation level available, the way the data are collected and processed, etc.

Sector	Information source	Quality of data
Public Sector	Monthly electricity invoices with information on energy consumption for each municipal building/facility.	Medium (missing meter readings or faulty meters)
	Heating oil quantities purchased by the municipality	Medium/Low (no data on purchases/use per building)
	Natural gas consumption for each municipal building (invoices or data from energy provider)	High (based on meter readings per building)
Public lighting	Number and type of lamps installed for public lighting if no local data available from energy provider	Medium/Low (estimates/no inventories)
Public vehicles	Fuel consumed by each municipal vehicle and/or kilometres travelled	High/Medium
Residential & Tertiary Sector	Electricity consumption at a regional level or if given by the energy provider at a local level	Medium/Low (regional estimates)
	Heating oil consumption at national / regional level	Low (no local data available)
	Natural gas consumption (national data if no local data available from energy provider)	High/low
	Wood consumption estimates from national data	Low
	Renewable Energy Sources installed and in operation	High/Medium
Transport	National or regional data on number of vehicles, vehicle type, fuel type, mileage, fuel consumption	Low (no local data available)

Main problems to overcome

Energy stakeholders are not legally obliged to provide local energy data to municipalities, energy agencies and energy observatories. Furthermore, national and European legislation only ensure consumers access to own consumption data. Even when energy providers are keen to cooperate with public authorities and collaboration agreements have been signed, this does not necessarily enable the provision of data. For example, even though two Memoranda of Cooperation have been signed in Greece, there has been no data exchange so far. Therefore, it is vital to clearly communicate the benefits of collaboration to energy providers and establish a good working relationship with them in order to access data exchange. Contingency planning is also important and includes the use of regional or national data to provide estimates when local data are not available.

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Energy Environment Local Development SA - EL
FEDARENE - BE