

# Regional Energy plan: components and data sources for opinion mining.

---

Document Type:	Deliverable
Dissemination Level:	PU (Public)
Editor:	Please specify the editor
Document state:	Final version (waiting for EC approval)
Document version:	1
Contributing Partners:	UNIBO, RER, ASTER
Contributing WPs:	WP9
Estimated P/M (if applicable):	n.a.
Date of Completion:	31st of July 2012
Date of Delivery to EC:	31st of July 2012
Number of Pages:	26

---

## ABSTRACT

This deliverable describes the work carried out in tasks 9.1 and 9.2 and introduces some elements of the pilot scenario, i.e. the Regional Energy Plan (REP) of the Emilia Romagna Region.

The first part of the document is devoted to the Emilia Romagna Regional Energy Plan and depicts the regional context with its socio economic aspects and energy profile. Special focus is given to the 2020 objectives of the REP (and the interim steps towards them) and to the regional energy balance. The last section of the first part of the document also reports the list of Axes and Actions anticipated in the 2011-2013 Action Plan of the REP.

The second part of the document focuses on describing the e-participation activities undertaken by the Emilia Romagna regional government since 2004, listing also the various e-participation tools available and institutional thematic web sites, blogs and forum related to the energy field. Moreover, a description is provided of the work carried out within task 9.2 on the identification of web sources as input for the opinion mining tool developed in WP6.

## **Authors of this document:**

Daniele Sangiorgi, Lucia Mazzoni,  
ASTER S. Cons PA.

Email: {daniele.sangiorgi|lucia.mazzoni}@aster.it

Sabrina Franceschini, Emilia Romagna Region  
EMILIA ROMAGNA REGION

Email: SFranceschini@regione.emilia-romagna.it

### **Copyright © by the ePolicy Consortium**

The ePolicy Consortium consists of the following partners: University of Bologna; University College Cork, National University of Ireland, Cork; University of Surrey; INESC Porto, Instituto de Engenharia de Sistemas e Computadores do Porto; Fraunhofer-Gesellschaft zur Foerderung der Angewandten Forschung E.V; Regione Emilia-Romagna; ASTER – Società Consortile per Azioni; Università degli Studi di Ferrara; PPA Energy.

**Possible inaccuracies of information are under the responsibility of the project team. The text reflects solely the views of its authors. The European Commission is not liable for any use that may be made of the information contained therein.**

## Contents

<b>1</b>	<b>Introduction.....</b>	<b>5</b>
<b>2</b>	<b>Emilia Romagna Regional Energy Plan.....</b>	<b>5</b>
2.1	The regional context .....	5
2.2	Description of the plan and its overall objectives .....	8
2.3	The Emilia Romagna Energy Balance .....	11
2.3.1	Energy and Renewable Energy Sources in Emilia Romagna Region.....	11
2.4	Axis, Actions and Resources of the Emilia Romagna Energy Plan .....	13
<b>3</b>	<b>E-participation and opinion mining.....</b>	<b>15</b>
3.1	Emilia Romagna e-participation initiatives .....	15
3.2	Ex ante evaluation - Opinion mining.....	19
3.2.1	Eparticipation and Regional Energy Plan: the participation process in the definition of the action plan 2011-2013 .....	19
3.2.2	Web Data Sources.....	22

This page has been intentionally left blank.

## 1 Introduction

This deliverable describes the work carried out in tasks 9.1 and 9.2 and introduces some elements of the pilot scenario, i.e. the Regional Energy Plan (REP) of the Emilia Romagna Region.

The first part of the document is devoted to the Emilia Romagna Regional Energy Plan and depicts the regional context with its socio economic aspects and the energy profile. Special focus is given to the 2020 objectives of the REP (and the interim steps towards them) and to the regional energy balance. The last section of the first part of the document also reports the list of Axes and Actions anticipated in the 2011-2013 Action Plan of the REP.

The second part of the document focuses on describing the e-participation activities carried out by Emilia Romagna regional government since 2004, listing also the various e-participation tools available and institutional thematic web sites, blogs and forum related to the energy field. Moreover, a description is provided of the work carried out within task 9.2 on the identification of web sources as input of the opinion mining tool developed in WP6.

## 2 Emilia Romagna Regional Energy Plan

### 2.1 The regional context

The Emilia-Romagna region of north-eastern Italy is among the wealthiest and most innovative regions in the country. Located between the Apennine Mountains, the Po River and the Adriatic Sea, it represents one of the main industrial areas of Italy, divided into nine provinces (Figure 1). A moderate portion of the territory (38.5%) is mountainous (the Italian average is 54.3%), but this area was home to only 8.8% of the population in 2006.

The region has a population of 4.4 million (Jan 1, 2011) divided into 1.97 million families. In 2010 the region had a surface area of 22,445.54 km<sup>2</sup>, with an average of 197.5 inhabitants per km<sup>2</sup>.

An important feature is the concentration of urban areas and industry as well as air pollution along the via Emilia axis, which remains one of the most important traffic vectors in Italy.

#### *Overall social-economic context*

From a socio-economic perspective, the region is among the most prosperous in Italy, despite a recent stagnation in economic growth. According to ISTAT, the region's GDP in 2009 was €133.0 million (at current price levels), while GDP per capita was €30,493 (again at current price levels). Average unemployment in 2010 reached 5.7%, which is much higher than in the past (for example, 2.9% in 2006), but still substantially below the national average for the year. A large proportion of people are aged 65 or over (22.3% in 2010) whilst at the same time there is a low birth rate, with only 13.3% of the population under 15. Emilia-Romagna has the highest share of immigrants in its population (11.3%) of any region in Italy. The incidence of poverty among families (3.9%) was also substantially lower than that in the rest of Italy (11.3%) in 2008, though it is expected that real poverty has worsened as a result of the continuing and deepening economic crisis. In 2009, 55.5 of

100 families in the region judged that their economic resources were optimal or adequate — representing a substantial drop since 2002, when 69.2 of 100 families felt this way. Conversely, in 2009 38.7 of 100 families judged their economic resources to be constrained, up from 28.2 in 2002.

The region has an average monthly spending level that is higher than the national average: in 2008, Emilia-Romagna's families spent an average of €2854.02 (at current prices), compared to the national average of €2484.64 (also at current prices). In 2008 residents also tended to spend substantially more on fuels and energy per month (€155.97 - at current prices) than Italians as a whole (€130.36 - at current prices) and slightly more than the average for the north-eastern part of Italy. Such spending peaked in 2006 (€162.74), before dropping sharply to €132.64 in 2007 and then rising again in 2008. If compared to overall average monthly spending, this represented close to 5.5% of the total in 2008.

Domestic gas prices have fluctuated substantially in Italy. Recent data on domestic prices of energy indicate that in the second half of 2010 natural gas and electricity prices reached €13.8350/gigajoule (excluding taxes) and €0.1387/kWh, respectively, higher than in Poland and Germany for that period. Data reported in Europe's Energy Portal (June 2011) on retail prices for households showed gas prices in Italy at €0.0796 per kWh for consumption levels at 15,000 kWh/year, while electricity prices were €0.2041 per kWh electricity at a consumption level of 3,500 kWh/year. In late 2011 fuel prices increased sharply due to an increase in the excise tax as one of the austerity measures of the new technical government under Prime Minister Monti. In January 2011 the price of heating oil reached €1.457/litre.

### *Energy consumption context*

Like the country as a whole, Emilia Romagna is heavily dependent on natural gas imports, though it does have its own production, which has been declining in recent years. In 2008, the last year for which comprehensive and validated data is available, the Region required circa 16.4 million tonnes of oil equivalent (MTOE) of primary energy, of which 62.6% was derived from natural gas (mainly methane), 30.6% from petroleum products, 5.3% from renewable energy sources (RES), 1% from electricity imports and a minimal share of solid combustibles (0.1%).

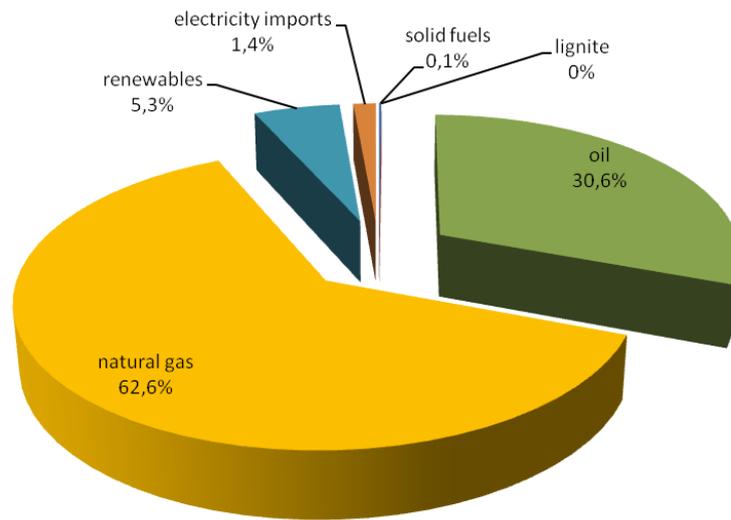
In the cities most residences are heated by gas, whereas in rural areas and in the mountains, biomass or fuel oil might also be used. The use of wood pellets has become more popular. In 2008, the residential sector was responsible for nearly 20% of final regional energy consumption.

Natural gas accounts for close to 62% of the consumption in the residential sector — used primarily for space heating, hot water and cooking. Given that in 2009 94.2% of the families in the region were connected to the natural gas network (versus 77.7% in Italy), energy efficiency in the residential sector particularly requires the reduced consumption of natural gas—or with the substitution of oil-fuelled boilers with more efficient gas boilers.

While there have been major investments in renewable energy sources for electricity generation, thermal generation still overwhelmingly provides the main source of power in Emilia-Romagna, though there has been a shift from fuel oil to natural gas (as well as to biomass and urban waste

burning). In 2009 biomass accounted for the largest renewable source for power generation. According to the Triennial Action Plan 2011-2013 of the Regional Energy Plan, the capacity of renewable generation in 2009 totalled 779 MW: comprising of wind (16 MW); solar PV (95 MW); biomass (371 MW); and hydro (297 MW). The Objectives for 2020 are to reach a total RES power generation capacity of 4500-5060 MW or 1,457.1-1,517.4 ktoe with investments of €12,083-13,989 M foreseen.

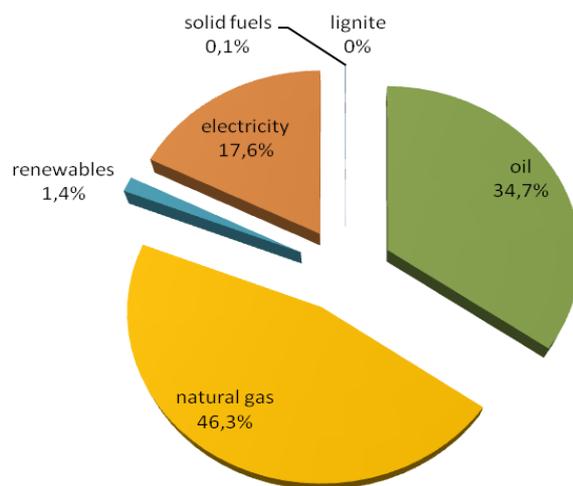
### Emilia-Romagna primary energy supply, 2008



Source: Emilia-Romagna Region

Figure 1. Primary energy supply, 2008

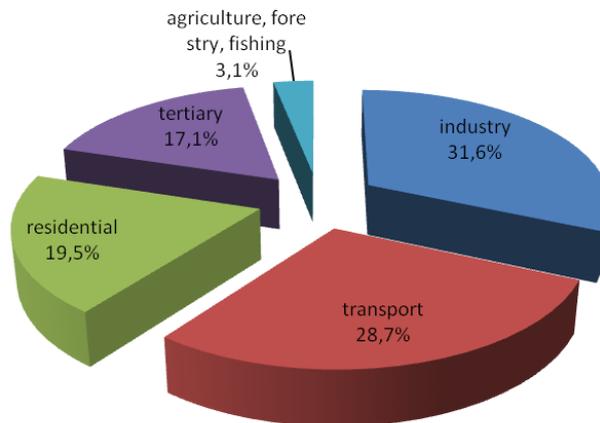
### Emilia-Romagna final energy consumption, 2008



Source: Emilia-Romagna Region

Figure 2. Final energy consumption, 2008

### Emilia-Romagna Sectoral consumption, 2008



Source: Emilia-Romagna Region

Figure 3. Sectorial energy consumption, 2008

### Emilia-Romagna final consumption, residential sector 2008

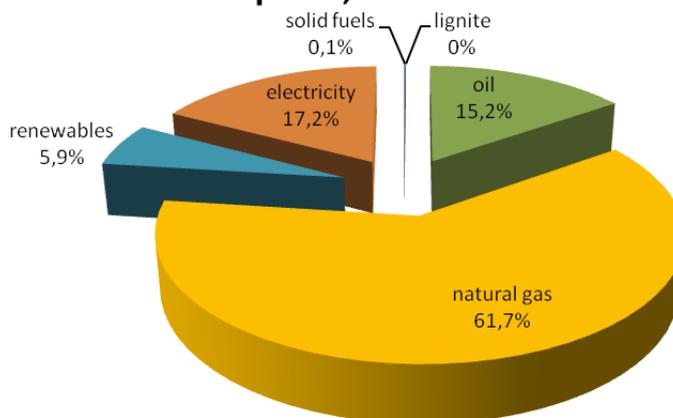


Figure 4. Final consumption of the residential sector, 2008

## 2.2 Description of the plan and its overall objectives

Emilia-Romagna Region (RER) is very active in the development of policies for the energy sector. In response to the poor effectiveness of national initiatives Emilia-Romagna Region developed in 2004 the regional energy law (26/2004) which regulates the regional strategic plan for the energy sector - the Regional Energy Plan (REP) approved at the end of 2007.

The REP:

- describes the overall energy system in Emilia-Romagna;
- sets the regional objectives in terms of sustainable development;
- outlines the priorities of the regional authorities and municipalities for the energy sector;

- provides for the creation of a fund for the implementation of regional programmes in the energy sector.

The REP is seeking to bring about changes as follows:

- energy savings leading to a reduction in the consumption of oil of about 1.7 million tons by interventions in the building sector, the manufacturing sector, transport and agriculture;
- ensuring that renewable sources of electricity generation are suitably remunerated so as to obtain an additional capacity equal to about 400 MW;
- the diffusion of small power plants for electricity generation among final energy users so as to obtain additional power.

The REP lasts 10 years and can be updated to align with changes to the energy system with relevant implications on the objectives and guidelines of the plan. Such changes will also comply with national and European policies, as these also develop.

The Regional Energy Plan defines strategic regional objectives for energy production and efficiency. The region has strategic objectives, financial and territorial constraints and environmental impacts. An example of an objective that the region might have is to increase the production of energy while at the same time increasing the share of renewable energy sources in the regional energy balance. For each energy source, the plan provides: the installed generation capacity, in MW; the total energy produced in a year, in kTOE (kilo Tonne of Oil Equivalent); and, the total cost, in M€. The ratio between installed generation capacity and total produced energy is mainly influenced by the availability of the source: while a biomass plant can, at least in theory, produce energy at all times, the sun is available only during the day, and the wind only occasionally. For unreliable sources an average for the whole year is taken. The cost of the plant depends mainly on the installed capacity: a solar plant has an installation cost that depends on the surface area of the installed panels which, in turn, provides a maximum or peak power.

The 20-20-20 EU directive requires that 20% of total energy production for 2020 should be provided from renewable sources. Experts in the Emilia-Romagna region have proposed that during the period 2011-2013 177kTOE of electrical energy and 296kTOE of thermal energy should be provided from such sources. Using this premise plans for both electrical and thermal energy have been developed.

The following tables show the objectives for each renewable source by 2020, assuming that the Emilia Romagna Region provides between 17% and 20% of the total required Italian RES<sup>1</sup> production (this may be called burden sharing). Objectives are defined both for electric production and heat in terms of the installed capacity (MW) and the energy produced (kTOE/year). An estimation of the investments required for the construction of RES plants is also reported.

---

<sup>1</sup> Renewable Energy Source

	Actual Capacity in 2009 (MW)	Estimated Capacity in 2010 (MW)	Overall 2020 Capacity Objective (MW)	Overall 2020 Energy Objective (kTOE)	Estimated Investment Required (M€)
<b>Electricity production</b>					
Hydro electric	297	300	320-330	71,6-73,8	141-204
Photovoltaic	95	230	2.000-2.500	206,4-258,0	6.195-7.945
Solar	0	0	30	3,1	135
Wind	16	20	250-300	32,3-38,7	467-568
Biomass	371	430	1900	1143,8	5145
<b>Total</b>	<b>779</b>	<b>980</b>	<b>4.500-5.060</b>	<b>1.457,1-1.517,4</b>	<b>12.083-13.989</b>
<b>Heat production</b>					
Solar	25	25	50068	64,5	1000
Geothermic	23	23	50	32,3	135
Biomass	100	120	1.500-2.350	645,0-1.010,5	700,0-1.125
<b>Total</b>	<b>148</b>	<b>168</b>	<b>2.050-2.900</b>	<b>741,8-1.107,3</b>	<b>1.835-2260</b>
<b>Transport</b>				252,8	
<b>Total</b>	<b>927</b>	<b>1.148</b>	<b>6.550-7.960</b>	<b>2.451,7-2.877,4</b>	<b>13.918-16.249</b>

Table 1. Objectives for renewable energy sources in Emilia Romagna Region to 2020

	Actual Capacity in 2009 (MW)	Estimated Capacity in 2010 (MW)	Overall 2013 Capacity Objective (MW)	Overall 2013 Energy Objective (kTOE)	Estimated Investment Requirements (M€)
<b>Electricity production</b>					
Hydro electric	297	300	306-310	68,4-69,3	60-84
Photovoltaic	95	230	600-850	61,9-87,7	1.295-2.170
Solar	0	0	10	1	45
Wind	16	20	60-80	7,7-10,3	80-120
Biomass	371	430	600	361,2	595
<b>Total</b>	<b>779</b>	<b>980</b>	<b>1.576-1.850</b>	<b>500,3-529,6</b>	<b>2.075-3.014</b>
<b>Heat production</b>					
Solar	25	25	100-15069	12,9-19,4	261,8-300
Geothermic	23	23	33-38	21,3-24,5	89,1-102,6
Biomass	100	120	500-750	215,0-322,5	200-325
<b>Total</b>	<b>148</b>	<b>168</b>	<b>633-938</b>	<b>249,2-366,4</b>	<b>550,9-727,6</b>
<b>Transport</b>				80	
<b>Total</b>	<b>927</b>	<b>1.148</b>	<b>2.209-2.788</b>	<b>829,5-976,0</b>	<b>2625,9-3741,6</b>

Table 2. Objectives for renewable energy sources in Emilia Romagna Region to 2013

## 2.3 The Emilia Romagna Energy Balance

### 2.3.1 Energy and Renewable Energy Sources in Emilia Romagna Region

In terms of primary energy sources, the RER needs in the year 2008<sup>2</sup> have been about 16.5 MTOE (million tons of oil equivalent). This is comprised of 31% oil, 62% natural gas, 6% renewable, and 1% imported electricity. Coal constitutes a minimal percentage of the regional internal consumption (0.1%). Oil is almost totally imported. The internal production of natural gas is dramatically decreasing: from almost 40% of the 2007 total, to 28% of that in 2008.

The energy consumptions per sector are: industry 32%, transport 27%, residential 26%, services 12%, agriculture 3%. The natural gas infrastructure is very important: the transmission network has a length of about 3803 km (11% of the national network) while that of the distribution network is 29885 km (12.2% of the national network). The distribution network density per square km is 1.33 km<sup>2</sup>, which is higher than the national average (0.81). District heating is quite common (the third largest region in Italy for district heating schemes): 26 plants, almost 1.200.000 MWh thermal energy and more than 35 Million cubic meters.

Renewable energy represents 7% of the regional electricity regional production. Around 4% is produced from biomass (agricultural by-products, biogas, agro-industrial waste, urban waste, etc.) using traditional combustion conversion processes (there are some 64 plants). Around 3% is represented by the hydroelectric production (some 75 plants). Wind energy (3 plants) and PV (6,600 plants) currently make a negligible contribution to regional electricity production. The proliferation of domestic PV plants is primarily due to national incentives.

Types of RES	Share	Specification
Hydro electric	3%	Of electricity internal production (2008) 0.1% (2008) 0.2% (2009) 1% (2010) 2%(Estimation for 2011)
Photovoltaic	0%	Large increase in photovoltaic penetration in the last year: total installed power 411 MW - 16380 certified plants (March 2011)
Wind	0%	Of electricity internal production (2008)
Biomass	4%	Of electricity internal production (2008)

Table 3. Types and shares of RES<sup>3</sup>

	Tons per year	Specification
Total CO2-emission	40.576.487	energy sector 23%; industry 23%, transport 31%, civil 20%, agriculture 3%
CO2-emission per capita	9,2	-

Table 4. CO2-emissions in RER

<sup>2</sup> Data update is available on year 2008 at last.

<sup>3</sup> Renewable Energy Sources

	TWh/y	TOE <sup>4</sup>
<b>Total energy supply</b>	89,56	7,704
<b>Energy use in sectors</b>		
Buildings	36,16	3,109
Industry	38,93	3,347
Transport	-	-
Services+Agriculture:	14,51	1,248
<b>Fossil sources</b>		
Oil	15,63	1,344
Fossil gas	71,187	6,121
Coal	0,081	0,007
<b>Renewable Energy Sources</b>		
Biomass	n.d.	n.d
Wood	2,43	0,209
Hydro	n.d	n.d
Solar	n.d	n.d

Table 5. Energy balance for heat<sup>5</sup>

	TWh/y	TOE
<b>Total electricity production</b>	27,7	2,381
<b>Electricity use in sectors</b>		
Buildings	5,26	0,452
Industry	12,8	1,100
Transport	0,5	0,043
Services + Agriculture:	9,11	0,706 + 0,077
<b>Electricity from fossil sources</b>		
Oil	0,09	0,008
Fossil gas	24,83	2,135
Coal	0,02	0,002
<b>Electricity from RES</b>		
Biomass	1,15	0,099
Wood	n.d.	n.d.
Hydro	1,25	0,107
Solar	0,553	0,048
Wind	0,2	0,017

Table 6. Energy balance for electricity

	TWh/y	TOE
<b>Total fuel supply</b>	0,31	3,654
<b>Fuel from fossil sources</b>		
Oil	42,4	3,483
Fossil gas	1,87	0,161
Coal	-	-
<b>Fuel from RES</b>		
Biomass	-	-
Wood	-	-
Hydro	-	-
Solar	-	-

Table 7. Energy balance for transport<sup>6</sup>

<sup>4</sup> Conversion: 1 TOE = 11,36 TWh/y

<sup>5</sup> Electricity consumption is not taken into account in the electricity balance.

## 2.4 Axis, Actions and Resources of the Emilia Romagna Energy Plan

The Axis of the Regional Energy plan identifies the main strategic actions that the Regional Government has identified, linking policies in the same thematic area aimed at addressing the same subjects. This integrated approach is focused on sharing a strategy among the whole region and bringing about the convergence of the different efforts made by various local administrators in the field of energy efficiency, energy supply and energy use throughout the territory.

The objective is to put into practice actions to pursue the 20-20-20 strategy of the EU giving a positive contribution to the green economy and to achieve the sustainable and inclusive growth foreseen by the energy strategy of the European Commission for 2020.

The REP work-program for the years 2011-2013 is focused in the following eight strategic Axis:

1. Development of the local research and formation in energy field
2. Development of the green economy and energy efficiency in SMEs and in production districts
3. Development and energy efficiency in agricultural sector
4. Energy efficiency of urban and territorial systems
5. Promotion of sustainable mobility
6. Sector regulation
7. Local programming, information and communication
8. Technical assistance and partnership.

In the following table is shown for each axis the foreseen actions and the financial resources devoted for each year.

Axis	Actions	Funding for each year in 2011-2013 (M€)		
<b>1. Development of the local research and formation in energy field</b>	1.1 Support to enterprises for research and innovation projects 1.2 Support to research laboratories of the High Technology Network of the Emilia Romagna Region 1.3 Support to innovative research projects fostered by public/private bodies, enterprises, associations 1.4 Training actions in the field of renewable energies and the green economy	5	5	5
<b>2. Development of the green economy and energy efficiency in SMEs and in production districts</b>	2.1 Support to green economy projects 2.2 Support to energy efficiency projects for enterprises, also through the deployment of local energy networks and Energy Management the development 2.3 Support to green economy development for new enterprises 2.4 Energetic and environmental efficiency in production areas 2.5 Development of subsidized financing for green economy 2.6 Management of policies promoted at national level	12	12	12

<sup>6</sup> Without rail transport (only electricity)

<b>3. Development and energy efficiency in agricultural sector</b>	3.1 Support to agro-energy production 3.2 Support to energy efficiency projects for agricultural enterprises	3      3      3
<b>4. Energy efficiency of urban and territorial systems</b>	4.1 Energy efficiency for buildings and public assets 4.2 Urban and territorial energy re-qualification 4.3 Energy efficiency for private buildings 4.4 Development of procedures for energy certification of buildings	10    10    10
<b>5. Promotion of sustainable mobility</b>	5.1 Enhancement and fostering of the public local transport system 5.2 Policies for facilitating changes between different modes of transport and foot/bicycle mobility 5.3 Integrated planning and database for mobility and transport indicators 5.4 Support to measurements aimed at encouraging the diffusion of low emissions vehicles 5.5 Support to actions devoted to subsidy for rail transport	15    15    15
<b>6. Sector regulation</b>	6.1 Coordination and streamlining activities for sector regulation 6.2 Rules on authorization procedures for electrical energy production plants 6.3 Laws on settlement of renewable energy sources power plants 6.4 Rules on the exploitation of geothermal resources 6.5 Revision of the laws on the monitoring of heating and air conditioning. systems 6.6 Update of Regional Law 26/2004	0      0      0
<b>7. Local programming, information and communication</b>	7.1 Development of the energy program at local level, for the Energy front office and for local Energy Agencies 7.2 Development of Regional Energy front office 7.3 Relations with schools and Universities 7.4 Promotion and communication	1      1      1
<b>8. Technical assistance and partnership.</b>	8.1 Plan management 8.2 Development of the Regional Energy Information System 8.3 Development protocols, understanding, agreement for third parties 8.4 Monitoring and evaluation of interventions	0,5    0,5    0,5

### 3 E-participation and opinion mining

#### 3.1 Emilia Romagna e-participation initiatives

In the field of e-participation, starting in 2004, the Emilia-Romagna Region, within its Regional ICT Plan, promoted innovative initiatives to foster citizen's participation in the public decision making process. The first project, called "Partecipa.net", was promoted and coordinated by the Emilia-Romagna Region and carried out with the involvement of 21 local Administrations.

In the light of the positive results achieved, the Region decided to continue with the project and to set up specific e-democracy policies in the framework of the Regional ICT Plan 2007-2009. Furthermore, the Region decided to develop a new project "Io Partecipo" (I Participate, in English), a Partecipa.net spin off, aimed at creating an e-participation community interested to be up-to-date with the Region activities and have a wider involvement in the policies and decisions directly taken by the regional administration. Io Partecipo exploited methodologies and web tools developed within Partecipa.net, adding web 2.0 tools, to allow citizens to produce their own content. The main access channel is the web area [www.iopartecipo.net](http://www.iopartecipo.net) which uses the e-democracy open source kit which has been developed and used by a consortium of regional agencies, within the framework of the Partecipa.net project. The mission of the project is the setting up of a system of permanent and meaningful relations with citizens in the Emilia-Romagna Region, experimenting with methods and tools fostering participation in regional policies.

#### *Services provided by the Io Partecipo*

The goals of Io Partecipo are translated into specific services delivered online:

##### INFORMING

iopartecipo.net delivers customized information: the foundation of the service, is the identification of users' groups, to which specific interests and needs expressed by citizens refer. Users are, in fact, provided with the opportunity to choose directly information which is of interest to them. By creating a customized channel of communication focussing on users' needs, iopartecipo.net aims to initiate a policy creation process based on listening and participation. Users' point of view is a resource to be enhanced to improve local PA<sup>7</sup>: it is a useful source of information and provides the opportunity to plan and deliver services which are closer to the people.

##### SUPPORTING

iopartecipo.net offers customized consulting services. Experts in different fields reply directly to specific citizens' questions and, if they are of general interest, publish them on the web. All the consulting services are delivered free of charge.

##### CONSULTING

---

<sup>7</sup> Public Administration

iopartecipo.net carries out polls on specific themes, which represent a route for direct and active participation of users according to their interests and needs. The goal consists of creating a two-way interaction with users, based on a concrete and constant mutual exchange of data between the administration and its citizens. The poll feedback represents an important resource to improve communication modes and channels, as well as the quality of delivered services. In fact, the survey facilitates the recording of users' satisfaction and approval and enables the identification of reliable quality and performance indicators, in association with the sectors and offices directly involved.

## DIALOGUING

iopartecipo.net carries out periodic online forums to open a direct dialogue with citizens on issues and topics of particular public relevance. In a virtual space, different subjects can be discussed together, and there is the opportunity to exchange opinions and reach shared views. With the adoption of new technologies the forum represents one of the tools capable of delivering "e-democracy" experiences, with processes for citizens' inclusion and participation. In general, each forum consists of one or more web pages, where messages can be posted to be read by all users, who may answer or remark on some matters, thus producing an on-going dialogue. All participating partners, public administration and citizens must comply with the rules of participation, in order to develop the discussion in a correct and effective way.

## COOPERATING

iopartecipo.net offers citizens the opportunity to become publishers. With a specific form users can send news and articles to the iopartecipo editing room. After having checked the correctness and reliability of sources, the news will be published and sent to users who are registered in the information services. Besides having access to information, here users can produce news and contents for public administration and digital community. This tool aims at improving the access to the public sphere and involving citizens in a full-fledged exercise of active citizenship.

### *Targets and promotion*

The project focuses on two types of targets which can be classified as internal and external.

The internal target focuses on the services devoted to the Public Administration, using the system to optimise and/or enhance their information channel to citizens. To reach this target, internal marketing actions are carried out within the Region; such as project promotion (fostering knowledge) and support tools for participants (fostering utilisation).

The external target focus on the main objective of the initiative: the citizens. The actions which have been activated are both informational/promotional and educational/consultatory. Besides making use of the classic channels of mass communication, traditional media and new-media, the project has been promoted all over the Region through a "Io Partecipo corner", with dedicated staff, where citizens may find information and support, located in every Public Relation Office

(URP), all over the regional territory, and in all public events with some connections with the project goals (trade shows, events, conferences, etc.)

### *Technology*

Iopartecipo is founded on the reuse and open source/free software tools chosen by governments, as e-democracy initiatives have to be totally "transparent" in the management of information. Transparency must be met, at a technical level, for the management of data/information that people "provide" to the authorities and vice versa. A participation process must ensure the possibility of access and retrieval and verification of data that has been exchanged. Transparency has to be independent from technical suppliers and long-lasting because it allows the verification of the data by anyone with appropriate technical skills. Software applications that by default possess these characteristics are those licensed as free or open source software (depending on the license with which they are issued for use) therefore should be considered as a necessary choice for participation. A building block of Iopartecipo, from the technical and organizational point of view, is the "E-democracy Kit" developed by the previous e-democracy project: Partecipa.net. At the beginning of the Iopartecipo project, Partecipa.net identified several installations (at least eight in different municipalities and provinces in Emilia Romagna Region) of its tools. Iopartecipo includes and enhances Partecipa.net tools and methods. The applications chosen to be part of the Partecipa.net's Kit are widely consolidated from the technical point of view and based on Internet applications already widely used.

The **E-democracy Kit** is made of:

- **open source software** applications and their technical documentation;
- **methodological guide** to support the use of the applications.

These guides outline:

- the **competences** needed to use the tools;
- the **organizational** processes needed to set up the back office of the participation processes.

The Kit is therefore a set of applications to distribute information on selected issues and to manage decentralized editorial offices of different City Services.

Citizens express their own preferences when they subscribed to the service via the web; these preferences can be changed at any time and information is distributed via e-mail. Moreover these tools leave citizens free to address questions on specific themes and to obtain on-line customized answers from experts or to participate in surveys. In addition to the software tools, the Kit is a successfully tested methodology for the establishment of a set of editorial units and for the monitoring of services appreciation and satisfaction.

The Kit also includes an "enhanced forum": a web-based platform including forum, poll and document repository enabling fruitful and constructive debate between citizens and politicians with the intention of facilitating and encouraging "online-democracy".

In order to aid further development, the forum module was redesigned in 2009, using the Plone platform. This choice was taken in agreement with the local authorities participating in the development: it answers two main needs for improvement: the previous system did not grant a complete security level; and the Plone.gov environment is a vast development community, providing a wider range of ideas and solutions.

In conclusion, from a technical and methodological point of view Iopartecipo reuses and enhances a set of applications licensed as OS/free software and methodologies for eParticipation. These tools have been designed from the outset as open, easy to install and neutral respect to the citizen involvement.

***Impact, innovation & results***

The positive results of the project are mainly linked to the quantity and quality of relations between the public administration and citizens. The project also bring benefits to the public administration, in view of a self-reforming action, considering that public bodies and agencies are perceiving the need to open channels of ongoing and direct dialogue with citizens, in order to deliver services and policies respondent to their real needs. Citizens may find in the Io Partecipo portal a “menu” of general information and services, from which they can select their areas of interest and have a general view of the regional activities (starting from an initial selection and subsequent enlargement), with respect to issues, services, policies, thus facilitating their interactive involvement. There are presently around 400 citizens registered on the system, whilst the newsletter has 1300 registered users. The service has been promoted to internal and external audiences, via meetings, training sessions, participation to events and conferences. On the political commitment level the system is quoted as a model in the guidelines for the management of participation processes approves by the regional government.

<b>Io Partecipo Monitoring</b>	<b>Year 2010</b>	<b>Year 2011</b>
Consulting delivered	24	-
Website contacts per year	64062	68603
Correct logins	1030	775
New newsletter subscriptions	1496	953
Total newsletter subscriptions	2960	3913
Newsletters sent	110	187
News published	21	39
Press release	65	197
New account registered	584	387
Total account registered	1027	1414

**Table 8. Statistics on the usage of Io Partecipo**

## 3.2 Ex ante evaluation - Opinion mining

### 3.2.1 Eparticipation and Regional Energy Plan: the participation process in the definition of the action plan 2011-2013

For drafting the second action plan of the REP for the years 2011-2013 the Emilia Romagna regional government set up a participation process to collect the contributions of experts, operators, industrial associations, enterprises and citizens.

To pursue this aim the Emilia Romagna regional government created a permanent space called "Casa Energia" (Energy House) where all stakeholders listed above had the possibility to discuss, elaborate ideas and consult with the regional policy makers. Moreover "Casa Energia" hosted 22 workshops in October-December 2010, to foster discussion and to share the strategies implemented in the previous years and the objectives for the years 2011-2013. These workshops saw the participation of more than 2000 persons and about 180 speakers, and addressed the Energy theme from various points of view, considering the following topics:

- enterprises sectors: manufacturing, services, trade, tourism
- territory
- agriculture
- public administration
- research and technological innovation
- mobility and environmental sustainability
- financial system
- energy production

Following the conclusion of the workshops, in December 2010, the Emilia Romagna region started a "listening phase", supported also by a web front office, to widen participation and give everybody the opportunity to send contributions, ideas, proposals and comments. All of the input received in this "listening phase" has been grouped with the contributions collected by the energy front office and all the proposals and ideas, have been summarized and shared with policy makers. In order to produce a qualitative and quantitative synthesis of results the following criteria have been defined:

- stakeholder categories
- strategic themes
- action sectors
- key elements

The "stakeholders" category considered all individuals who participated to the debates during the workshops or who sent contribution to the front office, representing - in this way - stakeholders from energy producers to consumers. These stakeholders have been grouped in 5 categories:

- Enterprises and professionals
- Local authorities
- Research and technical bodies

- Financing institutions
- Other subjects (this category is grouping subject as: non-governmental institution, labor union organization, environmental associations, citizens)

The contributions analyzed have been grouped in three strategic themes, which have been included in the action plan:

- Energy production from renewable sources
- Energy efficiency
- Green economy and entrepreneurial regional system development

Contributions have been then organized into 6 sectors, representing the discussion topics faced in the participation process:

- Law
- Programming
- Information and training
- Support instruments
- Research and technology transfer
- Participation

For each of these sectors, some key elements have been identified, representing the recurring issues raised during the various discussions and meetings at “Casa Energia”. In the following table these key elements are reported.

Law	Programming	Information and training	Support instruments	Research and technology transfer	Participation
1.Constant update and adjustment of laws	1.Development of a territorial energy programme	1.Training for enterprises and professional	1.Adoption of models and/or instruments for monitoring territorial plans	1.Enhance the relationship between enterprises and research centers	1.More occasion for consultation among local bodies, enterprises, professionals and citizens
2.Definition of clear, transparent and effective rules	2.Diversification in energy production	2.Training for local bodies staff	2.Increased control activity	2.More investments for research and innovation	2.Creation of a monitoring body for monitoring the implementation of the three-year action plan
3.Territorial specific laws	3.Self sustainability of energy production at regional level	3.Diffusion of information and knowledge to citizens	3.Set up of agreements in the supply chain	3.Increase of energy efficiency in production processes and products	
4.Easier authorization process	4.Development of distributed energy		4.New models for funding	4.Support to new technologies developed in	

	production and network re qualification		the regional research centers
5.Coordination and simplification of regional procedure	5.More ambitious objectives of the improvement of energy performance	5.Incentives	
	6.Energy efficiency for public-private buildings	6.Development of operative instruments	
	7.Improvement of public transport efficiency	7.Creation of technical support bodies at local level	
	8.Development and promotion of "green" supply chain	8.Diffusion of energy certification	
	9.Better coordination among the different policy makers in planning and implementation		

Table 9. Key element for each sector

In the following pie-charts the distribution of each category of stakeholder and the distribution of the received contribution for each sector is shown

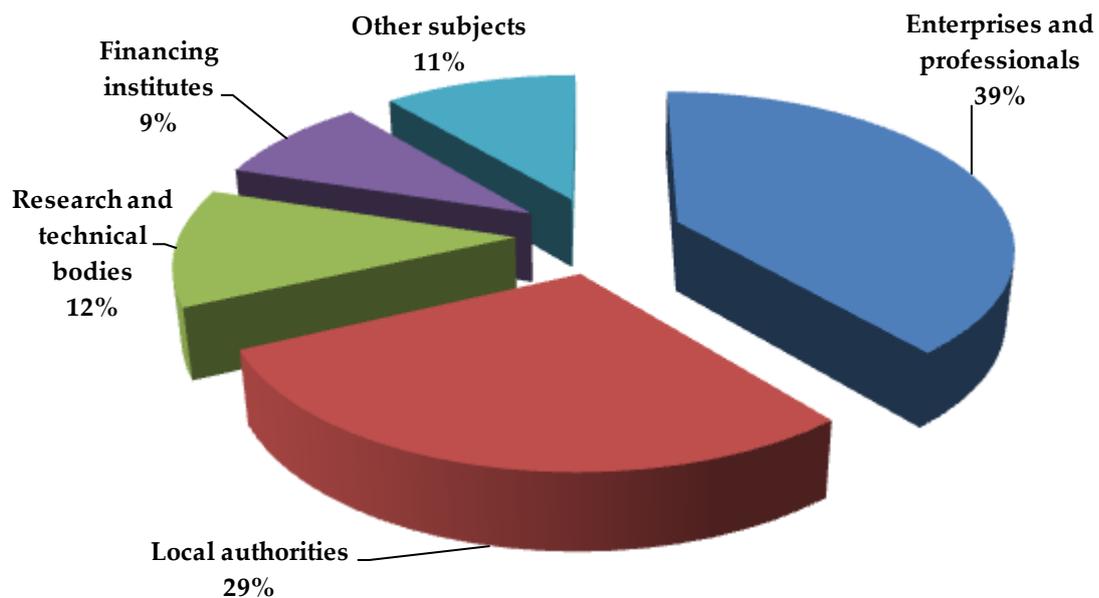


Figure 5. Distribution of categories of stakeholders

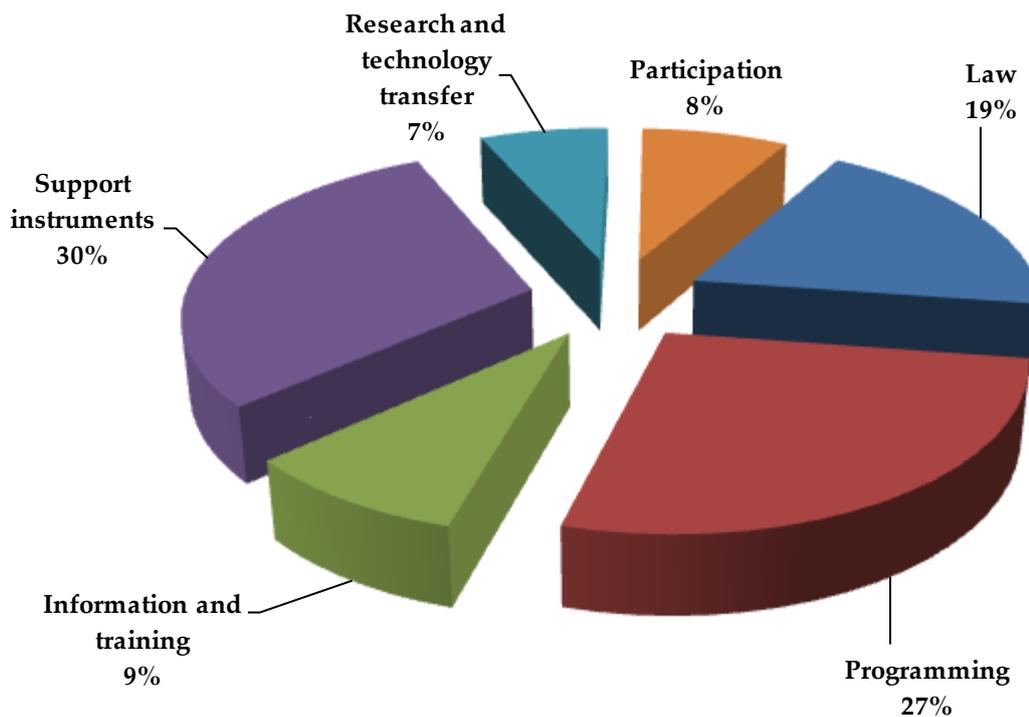


Figure 6. Distribution of categories of sectors

### 3.2.2 Web Data Sources

The work carried out in task 9.2 concerns the identification of web data sources to be given as input of the opinion mining tool developed in WP6<sup>8</sup>. The analysis started by examining the thematic sites, fora and blogs made available by the Emilia Romagna Regional government, mainly described in paragraph 3.1.

Moreover a search in the web has been performed in order to identify a set of web sources different from the institutional ones, where discussion on energy topics happens.

The following pages listed:

- The institutional web sources, specifying the public body it belongs to.
- The web sources identified, their short description and specifying the type of website and the amount of relevant data it contains.

#### Emilia Romagna Region institutional websites

Website	Address
RER main website	<a href="http://www.regione.emilia-romagna.it/">http://www.regione.emilia-romagna.it/</a>
Thematic website for enterprises	<a href="http://emiliaromagna.si-impresa.it/">http://emiliaromagna.si-impresa.it/</a>
Thematic website concerning environment	<a href="http://www.ermesambiente.it/">http://www.ermesambiente.it/</a>
Thematic website concerning energy	<a href="http://www.regione.emilia-romagna.it/energia/">http://www.regione.emilia-romagna.it/energia/</a>
Website of the Regional Prevention and Environmental Agency (ARPA) concerning Energy	<a href="http://www.arpa.emr.it/pubblicazioni/energia/generale_158.asp">http://www.arpa.emr.it/pubblicazioni/energia/generale_158.asp</a>
Thematic website for consumers	<a href="http://www.ermesconsumer.it/">http://www.ermesconsumer.it/</a>

<sup>8</sup> The specification of the opinion mining software will be given in WP6 deliverables

## e-Participation tools

Website	Address
Io Partecipo initiative	<a href="http://www.iopartecipo.net">http://www.iopartecipo.net</a>
Partecipa.net initiative	<a href="http://partecipa.net">http://partecipa.net</a>

## Regional Social media

Website	Address
RER on Facebook	<a href="http://www.facebook.com/RegioneEmiliaRomagna">http://www.facebook.com/RegioneEmiliaRomagna</a>
IoPartecipo on Facebook	<a href="http://www.facebook.com/RegioneEmiliaRomagna#!/iopartecipo">http://www.facebook.com/RegioneEmiliaRomagna#!/iopartecipo</a>
RER Twitter	<a href="http://twitter.com#!/regioneer">http://twitter.com#!/regioneer</a>
Myspace Emilia-Romagna Radio	<a href="http://www.myspace.com/radioemiliaromagna">http://www.myspace.com/radioemiliaromagna</a>

## Environmental associations:

Website	Address
Legambiente Emilia-Romagna	<a href="http://www.legambiente.emiliaromagna.it">http://www.legambiente.emiliaromagna.it</a>
WWF Emilia-Romagna	<a href="http://www.wwf.it/client/regionali.aspx?root=1104&amp;content=0">http://www.wwf.it/client/regionali.aspx?root=1104&amp;content=0</a>

## Other Web source identified

Web link	Short description	Type of information contained <sup>9</sup>	Expected volume of data	Unit of measure <sup>10</sup>
<a href="http://www.beppegrillo.it/lis-teciviche/forum/2011/06/bio-masse-in-emilia-romagna.html">http://www.beppegrillo.it/lis-teciviche/forum/2011/06/bio-masse-in-emilia-romagna.html</a>	Political movement, free association of citizens discussing about biomasses in Emilia-Romagna	blog	15	comments
<a href="http://fotovoltaiico-initalia.blogspot.com/">http://fotovoltaiico-initalia.blogspot.com/</a>	Blog on photovoltaic	blog	100	comments
<a href="http://www.fotovoltaiicoblog.it/">http://www.fotovoltaiicoblog.it/</a>	Blog on photovoltaic	blog/press	900	900 papers
<a href="http://www.meetup.com/bep-pegrillo-24/boards/thread/1942743/0/">http://www.meetup.com/bep-pegrillo-24/boards/thread/1942743/0/</a>	Forum with discussion from 2006 to 2010 about the construction of a Biomass Power Plant	forum	140	comments
<a href="https://www.iopartecipo.net/forum/io-partecipo-noi-ambiente.-ora-puoi-dire-la-tua">https://www.iopartecipo.net/forum/io-partecipo-noi-ambiente.-ora-puoi-dire-la-tua</a>	Discussion forum on environmental topics on the website Iopartecipo	forum	45	comments
<a href="http://blog.forumnucleare.it/">http://blog.forumnucleare.it/</a>	Blog on nuclear energy (manly in favour of nuclear energy)	blog	80	comments for each post
<a href="http://www.lugonotizie.it/main/index.php?id_pag=54&amp;id_blog_post=6612">http://www.lugonotizie.it/main/index.php?id_pag=54&amp;id_blog_post=6612</a>	news (and comments) about the construction of a Biomass Power Plant	blog/press	11	comments
<a href="http://www.lugonotizie.it/main/index.php?id_pag=23&amp;id_blog_post=6402">http://www.lugonotizie.it/main/index.php?id_pag=23&amp;id_blog_post=6402</a>	news (and comments) about the construction of a Biomass Power Plant	blog/press	36	comments
<a href="http://www.lugonotizie.it/main/index.php?id_pag=133&amp;id_blog_post=5362">http://www.lugonotizie.it/main/index.php?id_pag=133&amp;id_blog_post=5362</a>	news (and comments) about the construction of a Biomass Power Plant	blog/press	12	comments

<sup>9</sup> blog/press release/forum/document/facebook page/..

<sup>10</sup> number of posts/number of comments/number of emails/Mbytes/...

<a href="http://www.lugonotizie.it/main/index.php?id_pag=23&amp;id_blog_post=5432">http://www.lugonotizie.it/main/index.php?id_pag=23&amp;id_blog_post=5432</a>	news (and comments) about the construction of a Biomass Power Plant	blog/press	10	comments
<a href="http://orsotibetano.blogspot.com/search/label/Inceneritore%20di%20Russi">http://orsotibetano.blogspot.com/search/label/Inceneritore%20di%20Russi</a>	blog on environmental issues	blog	50	number of posts
<a href="http://www.energiain.it">http://www.energiain.it</a>	Portal about renewable energy sources in Italy. Also contains news/comments about Biomasses in Emilia Romagna ( <a href="http://www.energiain.it/italian/19-biomasse/85-biomasse-emilia-romagna">http://www.energiain.it/italian/19-biomasse/85-biomasse-emilia-romagna</a> ).	web portal	45000	number of pages in the portal (according to <a href="http://www.energiain.it/italian/chisiamo.php">http://www.energiain.it/italian/chisiamo.php</a> )
<a href="http://www.impreseambiente.it/">http://www.impreseambiente.it/</a>	A business-oriented (B2B/B2C) Web portal about environmental issues (and renewable energy sources, <a href="http://www.impreseambiente.it/energia-rinnovabile/">http://www.impreseambiente.it/energia-rinnovabile/</a> ) in Italy.	web portal	50	topical sections in the web portal
<a href="https://www.google.com/search?q=biomasse+site%3Awww.ilrestodelcarlino.it">https://www.google.com/search?q=biomasse+site%3Awww.ilrestodelcarlino.it</a>	Google query: pointers to articles about biomasses, published in "Il Resto del Carlino" - a national newspaper with ample coverage of Emilia Romagna region	web search	600	pointers to newspaper articles (with readers' comments)
<a href="https://www.google.com/search?q=biomasse+site%3Awww.corriere.it">https://www.google.com/search?q=biomasse+site%3Awww.corriere.it</a>	Google query: pointers to articles about biomasses, published in "Il Corriere della Sera" - one of the major Italian newspapers with large nation-wide distribution	web search	200	pointers to newspaper articles (with readers' comments)
<a href="https://www.google.com/search?q=biomasse+site%3Awww.repubblica.it">https://www.google.com/search?q=biomasse+site%3Awww.repubblica.it</a>	Google query: pointers to articles about biomasses, published in "La Repubblica" - one of the major Italian newspapers with large nation-wide distribution	web search	300	pointers to newspaper articles (with readers' comments)
<a href="https://www.google.com/search?q=biomasse+site%3Awww.ilfattoquotidiano.it">https://www.google.com/search?q=biomasse+site%3Awww.ilfattoquotidiano.it</a>	Google query: pointers to articles about biomasses, published in "Il Fatto Quotidiano" - an Italian newspaper with considerable nation-wide distribution (around 30K annual subscriptions) and an active online community of readers	web search	100	pointers to newspaper articles (with readers' comments)

<a href="http://www.facebook.com/groups/114912897390/">http://www.facebook.com/groups/114912897390/</a>	A FB group against a biomass plant in Finale Emilia (Emilia Romagna)	facebook page	360	members
<a href="http://www.facebook.com/pages/SI-alle-energie-rinnovabili-NO-al-nucleare/117288251648701">http://www.facebook.com/pages/SI-alle-energie-rinnovabili-NO-al-nucleare/117288251648701</a>	A FB page against nuclear plants, and in favour of renewable energies	facebook page	5000	members
<a href="http://www.facebook.com/pages/Energie-rinnovabili/134050273333934?sk=wall">http://www.facebook.com/pages/Energie-rinnovabili/134050273333934?sk=wall</a>	A FB page devoted to renewable energy sources	facebook page	200	members
<a href="http://www.facebook.com/GreenpeaceItalia?sk=wall">http://www.facebook.com/GreenpeaceItalia?sk=wall</a>	The FB page of Greenpeace's Italian chapter	facebook page	200000	like
<a href="http://www.bwea.com/ref/surveys.html">http://www.bwea.com/ref/surveys.html</a>	UK surveys on wind energy	set of surveys		surveys
<a href="http://forum.housingenergyadvisor.com/solar-panels-pv/topic995.html">http://forum.housingenergyadvisor.com/solar-panels-pv/topic995.html</a>	Housing Energy Advisor.com Forum	set of opinions	10	blog
<a href="http://ec.europa.eu/energy/renewables/consultations/index_en.htm">http://ec.europa.eu/energy/renewables/consultations/index_en.htm</a>	Public consultation from EU on Energy	consultation reports		
<a href="http://www.greendaze.org/what-are-your-opinions-on-solar-energy/">http://www.greendaze.org/what-are-your-opinions-on-solar-energy/</a>	Comments on solar power	blog	8	blog
<a href="http://www.desertec.org/">http://www.desertec.org/</a>	Desertec initiative			
<a href="http://www.ecologiae.com/tag/energia-solare/">http://www.ecologiae.com/tag/energia-solare/</a>	Articles on solar energy	press	100	articles
<a href="http://www.nuclearmeeting.com/forum/showthread.php?tid=243">http://www.nuclearmeeting.com/forum/showthread.php?tid=243</a>	Blog on renewable energies	blog	50	
<a href="http://www.beppegrillo.it/listeciviche/forum/2011/06/biomasse-in-emilia-romagna.html">http://www.beppegrillo.it/listeciviche/forum/2011/06/biomasse-in-emilia-romagna.html</a>	Political movement, free association of citizens discussing about biomasses in Emilia-Romagna	blog	15	
<a href="https://www.facebook.com/pages/SUNERGY-Pannelli-fotovoltaici-impianti-eolicied-energie-alternative/209743379818?sk=wall">https://www.facebook.com/pages/SUNERGY-Pannelli-fotovoltaici-impianti-eolicied-energie-alternative/209743379818?sk=wall</a>	News about renewable energies	facebook page	217	members
<a href="http://www.fotovoltaico-sunergy.it/index.html">http://www.fotovoltaico-sunergy.it/index.html</a>	Enterprise with seat near Bologna specialized in solar energy plants	Website		
<a href="https://www.facebook.com/profile.php?id=100000942719176&amp;sk=wall">https://www.facebook.com/profile.php?id=100000942719176&amp;sk=wall</a>	News and direct experiences related to renewable energies	Facebook page	1083	members
<a href="http://www.rinnovabili.it/">http://www.rinnovabili.it/</a>	Daily news and opinion polls on renewable energies	News		
<a href="https://www.facebook.com/pages/Rinnovabiliit/129078800535">https://www.facebook.com/pages/Rinnovabiliit/129078800535</a>	News about renewable energies. Daily news on renewable energies, climate change and global warming	Facebook page	6157	likes

<a href="http://www.energie-rinnovabili.net/forum">http://www.energie-rinnovabili.net/forum</a>	Forum concerning renewable energies	Forum	100	posts
<a href="http://www.energeticambiente.it/">http://www.energeticambiente.it/</a>	Forum on renewable energies and environment	Forum		
<a href="http://www.comitatomontedeicucchi.com/">http://www.comitatomontedeicucchi.com/</a>	Committee against a wind plant installation in San Benedetto Val di Sambro	Website with documents and news		
<a href="http://www.viadalvento.org/documenti/impianti-eolici-in-emila-romagna/">http://www.viadalvento.org/documenti/impianti-eolici-in-emila-romagna/</a>	Observatory on impact of wind plants in Italy	Document on Emilia-Romagna wind plants		
<a href="http://www.aspoitalia.it/blog/nte/">http://www.aspoitalia.it/blog/nte/</a>	New energy technologies	Blog		
<a href="http://www.aspoitalia.it/blog/nte/2011/10/21/confronto-fra-solare-termico-e-fotovoltaico/">http://www.aspoitalia.it/blog/nte/2011/10/21/confronto-fra-solare-termico-e-fotovoltaico/</a>	Comparison between photovoltaic solar and thermal solar energy	Blog		
<a href="http://www.viadalvento.org/category/emilia-romagna/">http://www.viadalvento.org/category/emilia-romagna/</a>	Citizens group discussing and giving information on aeolic energy	Documents, FAQ, press releases		
<a href="http://www.altreconomia.it/site/fr_raggruppamento_list.php">http://www.altreconomia.it/site/fr_raggruppamento_list.php</a>	Monthly online review with the objective of discussing on new sustainable lifestyles and approaches.	Blog		
<a href="http://www.legambientebologna.org/">http://www.legambientebologna.org/</a>	Legambiente Bologna	News and press releases		
<a href="http://www.legambienteferrara.org/">http://www.legambienteferrara.org/</a>	Legambiente Ferrara	News and press releases		
<a href="http://www.legambientemedicina.it/">http://www.legambientemedicina.it/</a>	Legambiente Medicina (BO)	News and press releases, opinions		
<a href="http://www.youtube.com/watch?v=vVKXL-Jk1UE">http://www.youtube.com/watch?v=vVKXL-Jk1UE</a>	Video concerning protest against biomass plants in the territory of Bologna and Ferrara	Video		
<a href="http://www.territorioevita.com/">http://www.territorioevita.com/</a>	Committee on biomass plants - Municipality of Galliera (BO)	News, documents, projects		
<a href="http://www.youtube.com/watch?v=4sH5U56RJrg">http://www.youtube.com/watch?v=4sH5U56RJrg</a>	Video informing on the biomass Committee of Galliera	Video		
<a href="http://rsemiliaromagna.wordpress.com/">http://rsemiliaromagna.wordpress.com/</a>	Radical Party of the left in Emilia-Romagna	Blog		
<a href="http://alessandrobratti.blogspot.com/">http://alessandrobratti.blogspot.com/</a>	Website of Alessandro Bratti, Member of Parliament for the Democratic Party	Blog		

Table 10. Web data sources for opinion mining