

**ALP** STORE



## Slovenia

### Action 4.1.1: National Frameworks

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## List of acronyms and abbreviations

CWWT	Center for Waste and Water Technology
RES	Renewable Energy Sources
HPP	Hydro Power Plant
CNG	Compressed Natural Gas
PHPP	Pumped Hydroelectric Power Plant

## 1. Summary

In the development of renewable energy sources, Slovenia must achieve ambitious targets that will increase the reliability of energy supply, reduce impact on the environment, and provide economic growth and the development of jobs and employment. In 2005 the share of renewable energy sources (RES) in final overall energy consumption in Slovenia was 16.2 percent. Slovenia must achieve at least a 25 percent share in the balance of final energy by 2020. The most important renewable source of energy in the country is hydro-energy, while in recent years development has been most dynamic in the area of solar energy and biogas. The potentials of these energy sources and the potentials of biomass, wind and geothermal energy, will contribute to increased consumption of energy from renewable sources [1, 2].

In future development of Slovenian electricity networks the concept of smart networks will play an important role, since it ensures better integration of smaller RES units and also brings other benefits. Implementation of smart systems in Slovenia has already started through pilot projects of installing smart meters (around 6% of consumers are equipped with these) and also by preparing technical and economic analysis of implementing a smart metering system for all consumers. According to the National program for Smart Grids, approximately 320 million EUR will be invested in this area by 2020.

Electricity storage technologies are part of this concept. In Slovenia there is currently one hydro storage plant in operation and another one is being built. Some other smaller storage system technologies are available in the market, but do not yet play an important role.

Table 1: Slovenia - country data [2, 3, 4].

<b>Slovenia</b>	<b>2011</b>
Population	2,016,423
Area	20,273 km <sup>2</sup>
Number of households	813,531
Number of electricity customers	925,283
GDP per person	17,361 EUR
Electricity generation capacity	3.1 GW
Pumped HPP generation capacity	185 MW

## 2. Storage technology checklist

Below is a brief overview of the storage technologies in Slovenia.

### 2.1 Biogas digesters and storage tanks

- Market availability / number of units in operation:

First biogas plant was built in 1993 for the anaerobic digestion on municipal central wastewater treatment plant. In 2009 8 centers for waste and water technology (CWWT) of 20 MW in total were installed in Slovenia for biogas production, but only 4 of them were using biogas for production of heat and/or electricity.

- Local future options:

Potential from animal wastes on farms is estimated at 1.1 PJ per year for production of electricity. Economical potential for the next year on municipal biogas plants and farm biogas plants is estimated on up to 30 MW [5].

Up-to-date no assessment of the need to extend the natural gas network to integrate biogas into the network has been carried out. A legal framework and incentives will also need to be prepared for this possibility [1].

### 2.2 Power-to-Gas (methane in gas grid)

- Market availability / number of units in operation:

Not available as a storage system.

- Local future options:

In 2011 Slovenia's first compressed natural gas (CNG) filling station has been opened for CNG powered public buses in Ljubljana. Future policy in this field is focused in

- increasing the competitiveness and sale of private, light goods and heavy goods vehicles powered by RES,
- greater share of RES in public transport,
- promoting the development of filling infrastructure, etc.

### 2.3 Pump storage (regional in Alpine Space)

- Market availability / number of units in operation:

There is currently one pumped storage hydroelectric power plant (PHPP) in Slovenia. PHPP Avče is operational since 2009 and it produces 426 GWh of electricity annually and consumes 553 GWh for pumping. The installed turbine power is 185 MW.

- Local future options:

A 400 MW Kozjak PHPP on the Drava River is being built. Project started in 2011 and it is scheduled to be completed in five years.

## 2.4 Thermal energy storage system

- Market availability / number of units in operation:

Only short-term thermal energy storage is now being used in households in Slovenia and some units in the industrial sector, but exact number of units (or total power) is not available.

- Local future options:

There is a big potential for development especially in combination with district heating systems. A public tender for co-financing district heating using geothermal energy is being drafted.

## 2.5 Mobile batteries (electric vehicles)

- Market availability / number of units in operation:

Slovenian electric vehicle (EV) market is in its early stage of development. However, the number of EV is growing and so is the number of charging stations. Currently Slovenia has approximately 45 charging stations, allocated in major cities.

- Local future options:

The Society for Electric Vehicles of Slovenia has called on all competent institutions to give as much support as possible to the project of setting up new charging stations. At the start of the year the Society and 89 partners submitted a project bid for the opening of new charging stations for electric vehicles. If the project is accepted, they will open 150 new charging stations in Ljubljana over the next four years [6].

## 2.6 Stationary batteries

- Market availability / number of units in operation:

A few projects with stationary batteries have been started in recent years. There are also some R&D projects which deal with the integration of stationary batteries to a home system or with the integration of stationary batteries to the energy system [see section 5].

- The first Vanadium Redox Battery (VRB) in Slovenia: VRB Systems and EUREl Inzeniring, origin of batteries Canada, installed at Sitel in Ljubljana, 3.3 kW and 10 kWh.

Table 2: Technology - EXAMPLE	Market availability	Storage period	Storage volume	Response Time	Local Option
Biogas digestion and storage	++	days	+	medium	+++
Power-to-Gas (methane in gas grid)	0	weeks	+++	quick	0
Power-to-Gas (hydrogen in gas grid)	---	weeks	+	quick	--
Power-to-Gas (hydrogen local)	---	days	-	quick	+
chemical storage (zeolite etc.)	0	days	0	slow	+
compressed air storage	--	weeks	0	medium	0
pump storage (regional in AS)	++	days	+	quick	++
Thermal energy storage system – high temperature	0	weeks	++	medium	+++
Thermal energy storage system – low temperature	+++	days	0		
fly wheels (small-sized)	0	minutes	--	very quick	+++
fly wheels (large-sized)	--	weeks	0	very quick	0
mobile batteries (electric vehicles)	--	hours	-	very quick	+++
stationary batteries	0	days	-	very quick	+++

### 3. Renewable energy status: sources, supplies, network, market

In the area of developing renewable energy sources, Slovenia must achieve ambitious targets. Promoting renewable energy sources and prioritizing efficient use are defined as energy policy goals. The programming document for Slovenia's energy policy – the Resolution on the National Energy Programme (ReNEP) – which was implemented in 2004, defines the mechanisms for promoting renewable energy sources and sectoral goals for renewables up to 2010. The new National Energy Programme, which is in the final stage of drafting and should replace the existing ReNEP, will define the goals of energy policy up to 2030 and the mechanisms for implementing these goals, including the targets Slovenia has set itself in the EU climate and energy package up to 2020 and other international obligations [1, 7, 8].

Some of the objectives of Slovenia's energy policy for renewable energy sources are [1, 7, 8]:

- ensuring a 25% share of renewable energy sources in final energy consumption and a 10% share of renewables in transport by 2020, which under current predictions will involve a doubling of energy generated from renewable sources relative to the year 2005;,
- implementing efficient energy use and renewable energy sources as economic development priorities;
- in the long term, increasing the share of renewable energy sources in final energy consumption.

In order to achieve these renewable energy source objectives, the Slovenian Government will ensure an adequate support environment for [1, 7, 8]:

- energy rehabilitation of existing buildings, mainly in the public sector, and construction of active buildings representing what are technologically advanced structures;
- replacing heating oil with wood biomass and other renewable energy sources;
- district heating systems based on renewable energy sources and heat and power cogeneration;
- replacing electricity for producing sanitary hot water with solar energy and other renewable energy sources;
- generation of electricity from renewable energy sources;
- increasing the share of railway and public transport;
- introducing biofuels and other renewable energy sources in transport and farming and introducing electric vehicles;
- developing distribution networks for incorporating dispersed electricity generation, including the development of active/smart networks;

- developing industrial production of technologies for efficient energy use and renewable energy sources.

Review of RES in Slovenia [9]:

### **Hydro power**

Slovenia's generation capacity from renewable energy resources is mainly from hydro, representing 28.7% of the total electricity production in 2009. Hydropower plants have the largest share among the RE sources in Slovenia. Besides the large hydroelectric generating units, there are approximately 400 small units (2006) with a total capacity of 85 MW. Refurbishment of existing small scale hydropower, and increasing the capacity of the large-scale units, are part of the Slovenian renewable energy strategy. The technically feasible hydropower potential of the Slovenia is estimated to 8,800 GWh/yr, of which a third has currently been exploited. An additional 40 MW of small hydro capacity is also estimated to be unexploited.

### **Biomass energy**

Forests cover more than 56% of the Slovenian territory. Use of biomass represents a sizeable market for the agricultural and forestry sectors, as well as for district heating programs. 6 MW of CHP plants utilising solid biomass was installed in 2004, with a view to increasing this to 11 MW by 2020 stated in the National Energy Programme. Biogas also holds a considerable potential, with 6 mostly agricultural biogas plants with a total installed capacity of 3.4 MWeI.

### **Wind energy**

Slovenian wind power is in its infancy, with minor installations present for recording purposes, as well as some limited use for water pumping/feed grinding. Average wind speeds across the country vary, but can be as high as 4.5 m/s (50 m above ground) in the Portoroz region or in some other regions. A large number of potential sites for wind power in the country are, however, situated in ecologically sensitive mountain regions, which are under consideration for national parks. Approximately 40 MW of wind capacity is in the planning process. The total estimated power generation potential for the country, as of 2006, was 600 MW.

### **Geothermal energy**

The North-eastern portion of the country has the greatest geothermal resource. Installed capacity amounted to 49 MW<sub>th</sub> in 2005. Geothermal energy is not currently utilised for electricity generation.

### **Solar energy**

Studies have shown that with existing technologies Slovenia can harness 960 GWh per year, which is about half the power Krško nuclear power plant produces at the moment. The total installed capacity

of photovoltaic installations was 120 MW in 2011. Average daily insolation across the country is above 1000 kWh/m<sup>2</sup>.

## 4. Institutional framework

Overview:

- **The Ministry of the Economy**

Has overall responsibility for energy policy in Slovenia through its Directorate for Energy headed by the State Secretary for Energy. It is particularly responsible for the preparation of the national energy strategy as well as for programmes to promote the efficient use of energy. Furthermore it is responsible for energy tariffs, legislation and exploitation licenses.

- **The Ministry of Finance**

Has the ownership rights of state enterprises.

- **Eles (Elektro-Slovenija),**

The Transmission System Operator (TSO) in Slovenia, is the public utility for transmission network management and is 100% state owned. Ownership control is exercised by the Ministry of the Economy (Directorate for Energy). As a national operator its primary responsibility is to reliably operate the Slovenian electric power system and to offer quality electricity supply to consumers.

- **Individual distribution companies**

The distribution companies supply all users except for five large industrial consumers supplied directly by ELES. In line with the Decree on the method for the implementation of public service obligation relating to the electricity distribution system operator, and public service obligation relating to the electricity supply to tariff costumers the operation of DSO-s is organized in two public services: the activity of the system operator, and the activity of supply of the tariff customers (both have separate accounts). In addition to these public services the DSO-s also carry on market-based activities (supply of electricity to eligible customers) and service activities that also have separate accounts. Electricity production is carried out in legally separated subsidiary companies [9].

- **Borzen**

The Slovenian Power Market Operator is responsible for running the electricity exchange, clearing and settlement of transactions concluded on the organised market, maintaining records of bilateral contracts, drawing up schedules, accounting deviations, and publishing market movements. Borzen, which was previously owned by ELES, passed into direct ownership of the Government of Slovenia in December 2007.

The Centre for RES/CHP support, incorporated in Borzen, is the support scheme operator for the generation of energy from renewable energy sources and highly efficient cogeneration of heat and power. In addition, in December 2009, the responsibilities for raising and managing the funds for electricity efficiency programs were incorporated within Borzen.

- **Energy Agency**

The Energy Agency regulates the distribution companies, for their provision of the public service of the DSO, and the transmission company, or its provision of the public service of the TSO. The costs of providing the public services of TSO and DSO's are covered from the revenues from the network charge.

The connection of electricity production facilities to the distribution network is defined by the Rules on the system operation of the electricity distribution network [10] and the Decree on general conditions for the supply and consumption of electricity [11]. Additional rules for connection and operation of power stations with an installed power of less than 10 MW are set by the DSO. The Licence for Operating Energy-Related Activities must be obtained from the Energy Agency.

The Energy Agency issues the RECS (Renewable Energy Certificate System) certificates for the electricity produced from RES since 2004.

- **The Environmental Agency**

Performs expert, analytical, regulatory and administrative tasks related to the environment at the national level. Thus the Agency's mission is to monitor, analyse and forecast phenomena and processes in the environment, and to reduce natural threats to people and poverty

## 5. Policy initiatives and plans

The key elements of the support environment up to 2020 are as follows [1, 7]:

- economic incentives (continuing the established scheme of support for generation of electricity from renewable sources and high-efficiency cogeneration of heat and power, with the preparation of a similar scheme for heat), direct financial stimuli and appropriate tax policy;
- regulations for methods of heating and cooling (introducing a compulsory share of renewable sources of energy in district heating systems, updating regulations for the use of renewable energy sources in buildings);
- improved planning: stepped up preparation of the expert basis for the physical placement of renewable energy sources on the national and local level; checking the possibility for improving administrative procedures for carrying out investments and checking the effectiveness of procedures through demonstration projects;
- a system of quality management in planning and implementing projects and of biofuel quality;
- incentives for developing financial markets and a range of appropriate financial mechanisms;
- support for establishing a wood biomass market;
- measures in the areas of education and training, research and development and promoting the development of industrial production for renewable sources;
- systematic promotion of best practices of efficient energy use and renewable energy sources, and ensuring high-quality information for evaluations involved in all decisions relating to the use of RES.

A range of measures to promote renewable energy sources is already being implemented as part of the adopted programme documents, especially under the Operational Programme for Developing Environmental and Transport Infrastructure 2007-2013, the Operational Programme for Reducing Greenhouse Gas Emissions up to 2012 and the Action Plan for Green Public Procurement.

Implicit in meeting the set target of a 25% share of renewable energy sources in gross final energy consumption is a precondition of reining in the growth of energy consumption, which is guided in part by the national energy policy in the area of transport and also by European transport policy and national development policy.

Most relevant policies and measures to promote the use of energy from renewable sources [1]:

- **Support scheme for electricity generated from RES and in high-efficiency cogeneration of heat and power:**

Financial incentives, operating subsidies in the form of fixed purchase prices or premiums

Expected Output: Increased generation of electricity from RES in dispersed production

- **Operational Programme for Reducing Greenhouse Gas Emissions up to 2012 – transport sector**  
Activities to reduce CO2 emissions in Transport  
Expected output: Reduction of emissions in the amount of 177 kt CO2 equiv., from 2008-2012, by increasing the share of biofuels, reducing emissions from private vehicles, increasing the share of railways in goods transport and increasing public passenger transport
- **Financial mechanisms for energy services with RES**  
Incentives for the energy services market  
Expected output: Increased investment in RES through a regulatory framework for energy services using RES
- **Promoting RES in local energy concepts**  
Regulations on planning RES on the local level  
Expected Output: Planning RES on the municipality level and establishing voluntary targets for RES in municipalities
- **System of energy management in the public sector**  
A set of instruments for the public sector that comprises: advice, motivational mechanisms, regulations for energy management, investments and assuring quality implementation, training, demonstration projects  
Expected Output:
  - Promoting the use of RES in state-owned property with the aim of ensuring 50% almost zero energy buildings by 2015 and 100% by 2018 among new and renovated buildings.
  - Promoting public sector energy management for efficient use of RES.
  - Quality assurance in all phases of preparing and carrying out investments in RES in the public sector.
  - Carrying out demonstration projects to remove obstacles in procedures for carrying out public sector projects.
- **Green state aid**  
Expected Output: Increased investment in RES in buildings receiving financial support from European funding
- **Planning the development of the distribution and transmission network**  
Expected Output: Plan to connect the planned number of RES power stations to the grid.
- **Promoting RES in local energy concepts**

Taking account of local energy concepts in municipal spatial plans and acceptable environmental impact, environmental conformity, ensuring grid capacities for connection of planned new units of dispersed electricity generation.

- **Stepped up implementation of active networks**

Drafting legislation and implementing acts that will enable the realisation of active networks (refurbishing and expanding networks, construction of adequate communication paths in the distribution network for managing and administering the network). The aim is to develop a grid that operates with greater adaptability, accessibility (for units of dispersed electricity generation), reliability of electricity supply and economy.

Expected Output: Enabling grid connection for all units of dispersed electricity generation

- **Relief for RES vehicles**

Expected Output: Increased competition and sale of private, light goods and heavy goods vehicles powered by RES

- **Infrastructure for RES in transport**

Expected Output: Increased use of RES vehicles owing to the provision of distribution infrastructure

## 6. Legislation

The main legislative documents in the Slovenian energy sector are the Energy Act [8] and the Resolution on the National Energy Programme [7]. These documents include all the guidelines for the energy development that were also partly outlined in the EU directives (e.g. 96/92/EC).

- **Energy Act**

The Energy act is the main act in the energy sector establishing common rules relating to its organization and functioning. It also defines the basic structure of the system operating instructions that shall regulate the operation and the manner of management of transmission and distribution networks for electricity.

- **National Energy Programme**

The Resolution on the National Energy Programme (NEP) was adopted by the National Assembly in April 2004. The National Energy Programme lays down long-term development goals and strategic guidelines for energy systems and energy supply, investments in public infrastructure, incentives for investment in renewable energy sources and efficient use of energy, the utilisation of economically justified technologies for the extraction of fuels and the generation of energy, and the anticipated extent of investment by private investors in energy-related activities.

### TSO

- **Decree on the method for implementing public service obligation relating to the activity of transmission system operator in the field of electricity**

The Decree [12] lays down the rights and obligations of the provider of the public service of transmission system operator, the organization of the public service, the manner and conditions of providing required services, the rights and obligations of the customers and means of financing.

- **Instructions on the systemic operation of electricity transmission network**

The Instructions [13] lay down the instructions for the transmission network operation and conditions for electrical energy transmission from producers to customers. Minimum requirements for operation of interconnected networks set by UCTE and ETSO are also enclosed. These Instructions incorporate rules for customer connection to the transmission network and do not directly address distributed generation.

### DSO

- **Rules on the system operation of electricity distribution network**

The Rules [10] stipulate technical and other requirements for safe operation of distribution networks with the aim to provide reliable and quality energy supply. These Rules lay down the rules for

systemic operation of the electricity distribution network, the duties of the distribution network operator, the terms and conditions for customer connection to the distribution network and define ancillary services of the distribution network.

- **Decree on general conditions for the supply and consumption of electricity**

The Decree [11] determines the requirements and procedures for customer connection to the network. It also stipulates the network operator obligations regarding reliable and quality energy supply. The customer is required to obtain an approval for each individual connection to the network. In the Approval for Connection the customer connection point, the transferred power, the short circuit power at the connection point, etc. are defined. The customer energy facilities and installations must meet the requirements of technical standards and regulations to prevent disturbance of other customers. If the customer disrupts energy supply to other users, the operator can disconnect this customer. The Decree defines protective devices required for small energy sources. In the field of the quality of energy supply the network operator must observe the limits defined in the **SIST EN 50160** standard (**EN 50160**). The maximum number and duration of short and long term interruptions are also defined.

- **Decree on the requirements to be met for obtaining the status of a qualified electricity producer**

The Decree [14] defines the types of qualified producers and establishes the requirements and procedure to obtain the status of a qualified electricity producer. The status is given to electricity producers that use RES and those who produce electricity in facilities of cogeneration at above-average efficiency.

### **Other relevant legislation**

The Energy Agency issues the **RECS (Renewable Energy Certificate System)** certificates for the electricity produced from RES since 2004.

Any producer that produces electricity from RES, or in the process of cogeneration, can apply for a guarantee of origin of electricity. The process of issuing guarantees is still being developed.

The Energy Agency prepared the **Act Regarding the Mode of Determining the Shares of Individual Production Sources and the Mode of Their Presentation** that came into force on 1st January 2006. Suppliers of electricity to end users are obliged to publish (on the electricity bills and in promotional materials) the shares of individual production sources within the whole structure of electricity production. They are also obliged to include at least the URLs of web pages or details of other information sources, where it is possible to obtain information on the influence of the production-source structure on the environment.



## 7. Market

In order to achieve the goals set in the National Energy Programme regarding the use of RES, support mechanisms should be improved. Especially the prices for electricity produced from RES and CHP should be adapted and more funds should be available for investment support. Also the simplification of the legal procedure for connecting to the network and obtain the status of a qualified producer (that is entitled to receive support) would stimulate the deployment of RES and EV.

The electricity market in Slovenia is fully open, as of 1 July 2007. Since the electricity market was liberalized that year, industries and households are free to choose their supplier of electricity. Distributors are now also able to set prices, something the government used to do in the past.

The Decree on the method for the implementation of public service obligation relating to the organization of the market in electricity [15] lays down the rights and obligations of the provider of the public service of market in electricity, the organization of the public service, the manner and conditions of providing required services, the rights and obligations of the customers and means of financing.

The Rules on the operation of the electricity market [16] define the basic structure and operation of the electricity market.

Most of the trading in Slovenia takes place on the retail market (purchasing or selling the electricity for the purpose of supply to end customers). However, also trading in the wholesale market is possible. Both forms of trading can be done on the basis of bilateral contracts and on the electricity exchange that takes place at Borzen. Borzen, the electricity market operator is a subsidiary company of Eles. A diagram of the Slovenian energy market is shown in Figure 1.

In the area of electricity production 3 large companies operate in Slovenia. Six are combined in the company HSE (Drava, Sava and Soča Power Stations, Thermoelectric Power Station Šoštanj, Thermoelectric Power Station Brestanica and Thermoelectric Power Station Trbovlje) which trades their total electricity production. Half of the electricity produced at the Nuclear Power Station is traded by Gen energija. The electricity of the Combine Heat-and-Power Station, Ljubljana is traded at Borzen and through preferential dispatch. Market shares of producers in the Slovenian production market are shown in Table 2.

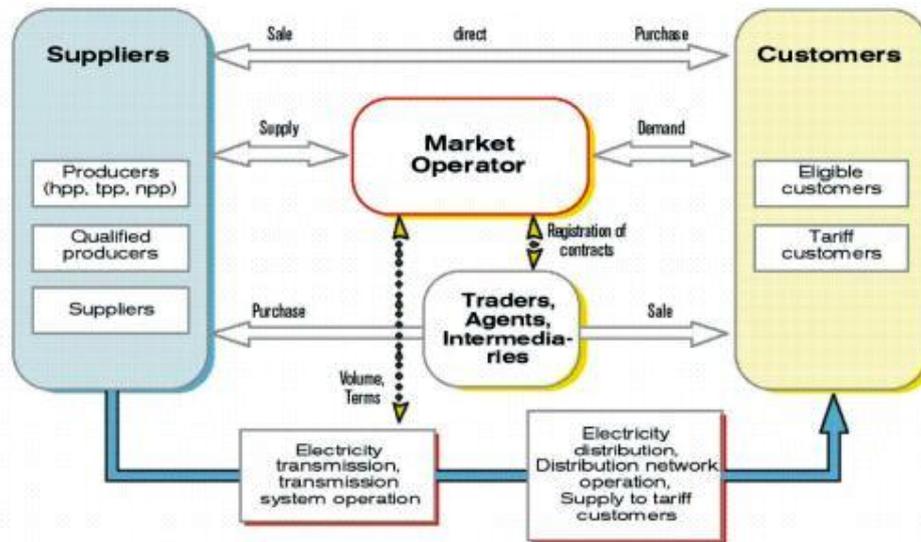


Figure 1: Diagram of the Slovenian energy market (source: Energy Agency).

Table 3: Market shares of the producers in the Slovenian production market [2].

Producers	Market share with respect to the installed capacity	
	Total in RS	On the transmission network
HSE	59.1%	66.5%
GEN energija	25.3%	28.4%
TE-TOL	3.7%	4.2%
Other small producers(on the transmission network)	0.8%	0.9%
Other small producers (on the distribution network)	11.1%	-
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>
<b>HHI with respect to installed capacity</b>	<b>4,272</b>	<b>5,246</b>

Table 4: Electricity in Slovenia [2].

<b>Installed capacity</b>	<b>3,408 MW</b>
Hydroelectric power plants	1,069 MW
Thermoelectric power plants	1,280 MW
Nuclear power plant	696 MW
Small producers	363 MW
<b>Production of electricity</b>	<b>14,878 GWh</b>
Hydroelectric power plants	3,362 GWh
Thermoelectric power plants	4,787 GWh
Nuclear power plant	5,899 GWh
Small producers	830 GWh

## 8. R&D

Some of the current R&D projects focused in the field of Smart Grids:

### **SMARTV2G** – Smart Vehicle to Grid Interface

- The main objective targeted by the SMARTV2G Project aims at connecting the electric vehicle to the grid by enabling controlled flow of energy and power through safe, secure, energy efficient and convenient transfer of electricity and data.

### **ICT 4 EVEU** - ICT services for Electric Vehicle Enhancing the User experience,

- is a project born with the aim of deploying an innovative set of ICT services for electric vehicles (EV) in different and complementary pilots across Europe.  
The scope of the ICT services is the integration of different management systems operating on the existing EV infrastructures in the cities where the pilots will be run, so that related services are deployed making use of these interconnected infrastructures.

### **MOBINCITY** - Smart Mobility in Smart City

- Main specific objectives are: To develop a system to be installed within the vehicle able to receive information from the surrounding environment, which can have influence in the vehicle performance (traffic information, weather and road conditions and energy grid). To optimize the trip planning and routing of FEV using information from these external sources including alternatives from other transport modes adapted to user's needs. To define efficient and optimum charging strategies (including routing) adapted to user and FEV needs and grid conditions. To implement additional energy saving methods (as driving modes and In-Car Energy Management Services) within the FEV interaction with the driver.

### **KIBERnet** - Development of prototype system for industrial load management in electricity distributed network

- The aim of the KIBERnet project is to develop a high-technology product to control the loads and dispersed power generation, as well as to optimise the management and operation of electricity distributors, based on which the electricity distribution companies will introduce a new service to industrial customers/producers of electricity.

### **CC-SURE** - Advanced Systems of Efficient Use of Electrical Energy

### **ELIH Med** - Energy Efficiency in Low-income Housing in the Mediterranean

- The mission of ELIH-Med is to identify innovative technical solutions and financing mechanisms to improve energy efficiency in low-income housings in the Mediterranean

area. Moreover, demonstration projects will be implemented to verify these innovative findings. As a strategy project, additionally, ELIH-Med shall put its efforts to develop and get a political consensus on a transnational operational program on energy efficiency in low-income buildings, as a component of a macro regional strategy in the Mediterranean area.

**GreenITNet - Green IT Network Europe**

- Governmental, scientific, industrial and many other institutions seek to reduce the energy consumption of ICT. This is also the basic goal of this project. A systematic policy framework for “Green IT” and collected number of good practices and effective policies will be developed as a result in this project.

**HiperDNO - High Performance Distributed Network Operation.**

## APPENDIX and supplementary material

### *Index*

- a. Review of existing sources and literature
- b. Key contacts and resources

## a. Review of existing sources and literature

- [1] *National Renewable Energy Action Plan 2010-2020*, July 2010
- [2] Public Energy Agency of the Republic of Slovenia: *Report on the Energy Sector in Slovenia for 2011*, Slovenia, July 2011.
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- [14] *Decree on the requirements to be met for obtaining the status of a qualified electricity producer*, Official Gazette of the Republic of Slovenia, No. 29/2001, 99/2001.
- [15] *Decree on the method for the implementation of public service obligation relating to the organization of the market in electricity*, Official Gazette of the Republic of Slovenia, No. 54/2000, 70/2003.
- [16] *Rules on the operation of the electricity market*, Official Gazette of the Republic of Slovenia, No. 30/2001, 118/2003.

## b. Key contacts and resources

**SMARTV2G** – Smart Vehicle to Grid Interface

[<http://www.smartv2g.eu/>]

**ICT 4 EVEU** - ICT services for Electric Vehicle Enhancing the User experience,

[<http://www.ict4eveu.eu/>]

**MOBINCITY** - Smart Mobility in Smart City

[<http://goo.gl/hdkEZ>]

**KIBERnet** - Development of prototype system for industrial load management in electricity distributed network

[<http://dsc.ijs.si/si/projekti/KIBERnet/>]

**ELIH Med** - Energy Efficiency in Low-income Housing in the Mediterranean

[[www.elih-med.eu](http://www.elih-med.eu)]

**GreenITNet** - Green IT Network Europe

[[http://www.miema.org/site/index.php?option=com\\_content&view=article&id=121&Itemid=121](http://www.miema.org/site/index.php?option=com_content&view=article&id=121&Itemid=121)]

**HiperDNO** - High Performance Distributed Network Operation

[<http://www.hiperdno.eu/>]