

EXECUTIVE SUMMARY ON ENERGY MASTERPLAN OF ALBA COUNTY



Client : ALBA LOCAL AGENCY FOR ENERGY

Alba Iulia, 9 Trandafirilor str., Alba County, Romania

LOCAL COUNCIL OF ALBA COUNTY

JANUARY, 2011

Technical assistance for Alba County Energy Masterplan development

Volume 1

Revision 0

CLIENT: ALBA LOCAL AGENCY FOR ENERGY
OBJECTIVE: ALBA COUNTY ENERGY MASTERPLAN

**OBJECT: TECHNICAL ASSISTANCE FOR ALBA COUNTY ENERGY MASTERPLAN
DEVELOPMENT - SUMMARY**

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CONTRACT: 09 – 48EE/17.12.2009
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1.1 General Description of Energy Masterplan

In preparing the document "Alba County Energy Masterplan", Tractebel Engineering has been involved - as a Consultant and developer and the Local Agency for Energy Alba (ALEA) - as a beneficiary and collaborator of the Consultant, as well as other institutions and local authorities from the county that provided qualitative and quantitative information on energy data in Alba County.

The analysis of energy issues at the Alba County level was based on a specific documentation, processing of statistical data sets, especially, in collaboration with ALEA who was the main supplier of input data, ensuring also a feed-back on the study content. Finally, bear in mind the implication of ALEA in developing of some important parts of Alba County Energy Masterplan study, such as: Chapter 1. "General description of Alba County", subchapter 4.2.3. "Renewable energy". ALEA, together with Tractebel Engineering, has an important contribution to the establishment of energy strategic directions on medium-term and the Action Plan on medium-term.

In conclusion, the fruitful collaboration between Tractebel Engineering and Local Energy Agency Alba (ALEA) was materialized in the study "*Alba County Energy Masterplan*", representing the first such study in Romania, until today. In the energy sector, this is the planning document that will support the local authorities to develop the energy sustainable development plans.

Masterplan for energy to be effective, it was necessary that its developed strategic directions and action plan to be linked with other planning processes, at both the activity sectors level, as well as county and local government level.

The main preliminary actions for the Actions Plan (AP) implementation are recommended to be:

- good understanding of the Action Plan by all local decision makers and their cooperation in order to implement this AP;
- permanent continuation of the Action Plan implementation process, monitoring and evaluation of the results, update and improvement;
- Public awareness on local energy issues and creating the appropriate framework for public involvement in decision making activities.

For a more accurate and efficient implementation of the Actions Plan, the public authority should order feasibility studies to examine in detail the technical and economical viability of each specified option.

Measures that require some substantial capital investments must be protected by the County Council decisions, in accordance with the law, guaranteeing the return on investments. An example might be the issuing of some clear procedures to be applied for the individual heating sources installation at the apartment level, when the investments in district heating system are made.

Starting from the fact that the Local Actions Plan will be implemented from 2010, it is recommended to make revisions to this Plan at intervals of two years.

1.2 Actions Plan

No.	Direction	Action	Results	Period of time (deadline)	Responsible
1. Energy management perspective					
1.1	Assuming the responsibility at the highest level for the energy policy - Creating the energy management structures (EM) inside the Alba County Council and the Local Councils	Assuming by the public government policy makers of some firm commitments to promote energy sustainability	Commitment by the mayors / County Council (CC) president	First year from the Masterplan approval	Alba County Council, Local Councils
		Establish of the energy manager job inside County Council (CC) and Local Councils (of cities) flowcharts, with a clear job description, responsibilities, skills	Energy Manager at the County Council and Local Councils (town) level	First year from the Masterplan approval	Alba County Council, Local Councils
		Increasing the professional capacity of the energy managers by training, including technical assistance provided by ALEA	Trained energy managers	First year from the Masterplan approval	Alba County Council, ALEA
		Development of basic knowledge in energy management field of local government and municipalities' technical staff	Trained technical staff	First year from the Masterplan approval	Alba County Council, Local Councils, ALEA
1.2	Achieving an adequate energy management by EM from Alba County Council and Local Councils	Implementation and updating of databases with annual energy consumption for each area of activity at county level	Achieved and updated database	Annually	Alba County Council, ALEA
		Establish within the county of specific energy consumption indicators on public utilities	Benchmarks on specific energy consumption	2011	Alba County Council, Local Councils, ALEA
		Drawing up action plans in energy field for the respective entity, by each EM	Action plans developed and approved	Annually	Alba County Council, Local Councils, ALEA Energy managers

No.	Direction	Action	Results	Period of time (deadline)	Responsible
		Creating and updating a database on energy production and energy consumption (including the specific energy consumption) at district level	Achieved and updated database	Annually	EM – Alba County Council, ALEA
		Create an "Action framework- plan for sustainable energy" – tool to support local governments in sustainable energy	Achieved "Action framework- plan for sustainable energy"	2011	ALEA
		Making regular energy audits for activities under the responsibility of CC and including the necessary improvement measures in the Action Plan. Implement the improvements as required in the Action Plan	Achieved energy audits and improvement measures included in the Action Plan	Regularly	Alba County Council, ALEA
1.3	Establishing a Communication Strategy in the field of energy sustainability and sustainable development	Development of one Communication Strategy with stakeholders: citizens, business environment, public institutions, local authorities	Developed Strategy	2011	Alba County Council
		Approval and implementation of Communication Strategy	Approved Strategy	2011	Alba County Council
		Monitoring Communication Strategy	Monitored Strategy	2012, annually	Alba County Council
1.4	Integrating energy monitoring into school curricula	Training teachers to introduce energy monitoring in the school curricula	Trained teachers	2013	County School Inspectorate (ISJ), ALEA
		Appointing of coordinators for energy in schools	Appointed Coordinators	2011	ISJ, ALEA
		Encourage students to create "Clean energy councils" (E COOL clubs)	Energy Councils created inside schools	2012	ISJ, ALEA
		Promoting school competitions on topics of responsible energy management	School competitions	annually	CL, ISJ, ALEA
		Introduction of one System of awards for	Implemented Award	annually	CJ, CL, ISJ, ALEA

No.	Direction	Action	Results	Period of time (deadline)	Responsible
		the best performing schools in energy management	System		
1.5	Information, awareness and training stakeholders on the need for an efficient management	Organizing special events (training, seminars, conferences) for training of involved factors in energy management	Trained involved factors	Continuously	Alba County Council, ALEA
		Promoting media campaigns dedicated on the public awareness on energy sustainability need	Media campaigns	Continuously	Alba County Council, ALEA
2. Enhancing the security of energy supply and quality of energy perspective					
2.1	Electricity. Increasing energy security of Alba County, modernization of electricity generation capacities, transmission and distribution	Modernization the old transformer stations, increasing their safety degree and expand the number of new MV lines for new consumers' connection and feeding	Upgraded and expanded substations	According multiannual programme -Electrica	SC DEE Electrica Distribuție Transilvania Sud
		Making new power injection points on MV networks (new substations) in economic developed zones having a current lack of available power	New substations in areas with power shortage	According multiannual programme -Electrica	SC DEE Electrica Distribuție Transilvania Sud
		Expansion and upgrading power networks in urban areas according to their spatial development	Expanded and modernized urban electric distribution networks	According multiannual programme -Electrica	SC DEE Electrica Distribuție Transilvania Sud
		Replacement of transformers inside damaged buildings and transformers with high losses, with high performance substations	Upgraded substations	According multiannual programme -Electrica	SC DEE Electrica Distribuție Transilvania Sud
		Electrification of households from no-electrified areas	Electrified households	According multiannual	Alba County Council /Electrica

No.	Direction	Action	Results	Period of time (deadline)	Responsible
				programme	Distributie Transilvania Sud
		Implementation of tracking power quality in common connection points – according to the Performance Standard of electricity distribution service	Power quality parameters monitored according to Standard	Continuously	Electrica Distributie Transilvania Sud
		Implementing smart electricity metering systems for consumers	Implemented smart metering systems	According multiannual programme -Electrica	SC DEE Electrica Distribuție Transilvania Sud
		Mapping power lines for low and medium voltage cables	Mapped MV and LV underground lines	2014	Electrica Transilvania Sud
		Online (interactive) information point for the public regarding the contractual rights and obligations, types of contracts and pricing, power quality provided by distribution operator	Created Information point	2013	Electrica Furnizare Transilvania Sud – Supply operator
2.2	Electricity. Increase power quality and extension of low voltage network and public lighting	Making public lighting in villages with tourism potential	Public lighting made in villages with tourism potential	2013	Alba County Council / Local Councils
		Completion crossing action of public lighting networks in the management of municipalities	Public lighting network taken over by the municipalities	2014	Electrica Transilvania Sud / Local Councils
		Drawing Technical specifications considering the performance indicators for delegation/concession of public lighting service	Prepared Technical specifications	2011	Alba County Council /Consultant

No.	Direction	Action	Results	Period of time (deadline)	Responsible
		Concluding the contracts of management delegation/concession of public lighting service	Concluded contracts of management delegation/concession	2012	Alba County Council /Operator/ Local Councils
		Low Voltage and existing public lighting Network rehabilitation	Rehabilitated electrical networks	According multiannual programme -Electrica	Electrica Transilvania Sud/ Local Councils
2.3	Natural Gas. Increasing natural gas supply safety and quality of distribution service	Replacing pipes and connections in areas with old network	Modernized Natural Gas networks	According multiannual programme -E.ON	E.ON Gaz Distribuție
		Expansion and upgrading of Natural Gas networks in urban areas, according to their spatial development	Extended Natural Gas networks	According multiannual programme -E.ON	E.ON Gaz Distribuție
		Online (interactive) information point for the public, regarding the contractual rights and obligations, types of contracts and tariffs/prices	Created Information point	2013	E.ON Gaz Distribuție
3. Energy efficiency perspective					
3.1	Development at the county level and at local authority level of the energy efficiency policy	Establishing the system of county property for municipal infrastructure and completion of the inventory of assets to identify areas with growth potential	Completed property regime; Developed inventory of assets	2011	Alba County Council, Local Councils
		Development of Energy efficiency program in public and residential buildings	Completed Energy efficiency program in public and residential buildings	2011	Alba County Council, ALEA

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No.	Direction	Action	Results	Period of time (deadline)	Responsible
		Development of Energy efficiency program for public services (street lighting, heat supply, public transport, water, sewerage, sanitation)	Completed Energy efficiency program for public services	2011	Alba County Council, Local Councils, ALEA
		Development of "Guidelines on energy efficiency in industry and agriculture"	Completed Guidelines on energy efficiency	2012	ALEA
3.2	Development and application of tax rules and procedures to foster implementation of measures set by county policy on energy efficiency and promoting renewable energy	Study on the type and level of tax concessions to be granted to individuals and businesses for investment in energy efficiency and renewable energy sources	Tax incentives for investment in energy efficiency	2011	Alba County Council, Local Councils, ALEA
		Tax incentives for operators / public institutions that implement energy efficiency measures and use of renewable energy sources	Tax incentives granted	Continuously	Alba County Council, Local Councils
		Taxes, reduced fees for individuals investing in energy efficiency measures in homes and renewable energy use	Taxes, reduced fees	Continuously	Alba County Council, Local Councils
3.3	Evaluation and monitoring of the operators' performance by precise definition of quality indicators for the services provided in the concession contracts	Develop performance indicators, including specific energy consumption of each public service, program implementation and the system of penalties for failure of the agreed indicators in the contract	Performance indicators; Program, System of penalties	2011	Alba County Council, Public service operators/ Local Councils
		Assessment of current levels of indicators	Assessed current level of indicators	Continuously	Alba County Council, Local Councils
		Analysis of existing concession contracts	Updated concession	Continuously	Alba County

No.	Direction	Action	Results	Period of time (deadline)	Responsible
		and updating them (where applicable) or conclusion of new ones (where they do not exist)	contracts		Council, Local Councils
3.4	Increasing energy efficiency of public and residential buildings	Development Program for thermal rehabilitation of buildings	Completed Program for thermal rehabilitation of buildings	Annually	Alba County Council, Local Councils
		Setting up and approval of Annual Programs	Approved Programs	Annually	Alba County Council / MDRLT
		Design of the rehabilitation of public and residential buildings, included in the Program	Designed rehabilitation works	Annually	Alba County Council, Local Councils
		Execution of thermal rehabilitation of program included buildings	Rehabilitation work completed	Annually	Alba County Council, Local Councils
		Making energy audits of all County Council's public buildings and their energy labeling	Buildings audited and labeled	2015	Alba County Council
		Making energy audits and energy labeling of schools from urban area	Audited and labeled schools	2016	Local Councils
		Achievement a pilot contract – energy performance contract (EPC) – with an ESCO company for a County Council (Alba) representative building, having high energy consumption	Completed Pilot Contract	2012	Alba County Council
		Implementation of energy performance contracts for efficient management of administrative buildings of cities (Alba Iulia, Blaj, Aiud, Sebes)	Finalized energy performance contracts	2014	Local Councils

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No.	Direction	Action	Results	Period of time (deadline)	Responsible
		Including of works to optimize energy consumption - and possibly, the renewable energy sources use, in the Technical specifications for all repair public works of public buildings	Developed Technical specifications with energy efficiency works included	Starting with 2011	Alba County Council, Local Councils
		Issuing building permits only for performance documentation of new buildings when energy performance was calculated by the project (see Law 372/2005)	Application provision of law 372/2005	Permanent starting with 2012	Alba County Council, Local Councils
3.5	Heat. Elaboration and implementation of a study on the opportunity to develop sources of heat generation in high efficiency cogeneration and district heating	Elaborating a study on the opportunity to develop sources of heat generation and transmission system of centralized heat supply in urban expansion areas, under development poles (Sebeș, Alba Iulia, Blaj)	Prepared study	2013	Alba County Council/ MDRLT
		Implementation of study results on the development of thermal energy generation sources	Implemented results	2015	Alba County Council, Local Councils
		Rehabilitation / modernization of existing district heating systems and creating new units as shown in previous developed studies	Achieved rehabilitation / modernization	2016	Alba County Council, Local Councils, private investor
3.6	Heat. Increasing energy efficiency in rural areas	Develop a county Program for the financial support of individuals in disadvantaged rural areas to replace traditional stoves with efficient biomass heating systems (using pellets, briquettes, wood waste, sawdust)	Developed county Program	2013	Alba County Council

No.	Direction	Action	Results	Period of time (deadline)	Responsible
		Implement the county Program for the financial support of individuals in disadvantaged rural areas to replace traditional stoves with efficient biomass heating systems (using pellets, briquettes, wood waste, sawdust)	Implemented county Program	2015	Alba County Council, Local Councils
3.7	Electricity. Measures to reduce electricity consumption in lighting and electrical equipments	Energy audit of public lighting systems, in cities	Public lighting energy audit, conducted at least four cities	2013	Local Councils
		Works of lighting energy efficiency, as determined by audit measures	More efficient public lighting at least four cities	2015	Local Councils
		Including in the Technical specifications for the equipment procurement of some information on their level of energy efficiency	Completed Technical specifications, included energy efficiency information	2011	Alba County Council, Local Councils
3.8	Public transport. Promote an efficient and modern public transport system, low emissions, promoting clean urban transport systems, discouraging individual car use	Implementation of county inter-modal transport Plan	Implemented county inter-modal transport Plan	2014	Alba County Council /Operators/ Local Councils
		Providing public transport fleet with high efficiency and low emission level vehicles	Public transport fleet equipped with effective vehicles	2015	Public transport operators
		Promoting differential parking charges (large values for crowded areas in city centers) to discourage private car transport	Differential parking charges	2012	Local Councils

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No.	Direction	Action	Results	Period of time (deadline)	Responsible
		Promotional campaigns to encourage use of bicycles by creating special bike' lanes and special parking spaces	Special bicycle lanes and designated parking spaces, created in cities	2013	Local Councils
3.9	Water and sewerage. Increasing energy efficiency of water supply systems and sewage, water treatment/ purification plants rehabilitation	Replacement / rehabilitation of old waste water treatment plants, to reduce energy consumption	Wastewater treatment plants replaced/ rehabilitated	2013	Alba County Council / Water CTTA/ Local Councils
		Rehabilitation of existing pumping stations, to reduce energy consumption	Rehabilitated pumping stations	2013	Alba County Council / Water CTTA
3.10	Public information and awareness on energy efficiency in the county	Conferences/seminars on achievements and plans for energy efficiency in the county	Conducted conferences/seminars	Permanent	Alba County Council ALEA
		Set up campaigns in schools to avoid waste of energy and a responsible attitude towards environment	Achieved campaigns in schools	Annually	ISJ, ALEA
		Promotion for a campaign (contest) in Alba County: "Energy neighbors" – to encourage reduction of energy consumption among owners of buildings/ houses – the condition is to reduce energy consumption by 10%, in a year.	Minimum 100 home' owners involved	2012	Alba County Council, Local Councils, ALEA
		Set up a free consulting center for the general public, to reduce energy consumption in homes	Achieved Consulting center	2011	ALEA
4. The renewable energy sources perspective					
4.1.	Developing of renewable energy sector	Campaigns to promote renewable energy use at county level	Conducted Campaigns	Annually	Alba County Council, ALEA

No.	Direction	Action	Results	Period of time (deadline)	Responsible
		Supporting the setting-up of pellet production micro-companies, in villages with high potential for biomass (forestry) – a source of income to the County Council's budget, respectively, to the Budget of Local Councils	Set up micro-companies	2015	Alba County Council, Local Councils
		Promoting the use of RES projects to supply electricity to isolated non-electrified villages, by accessing EU structural funds	Realized projects	Annually, until 2015	Alba County Council, target Local Councils
		Support implementation of industrial parks (Cugir, Zlatna, etc.) of RES applications (mainly, biomass, bio-waste and solar) - providing tax incentives	Performed activity	2013	Alba County Council, Local Councils with industrial parks
4.2	Identification and using the county natural potential, in order to generate energy from renewable sources	Study to identify the hydro potential workable by MHC, in the county (hydro potential map)	Performed hydro potential Study	2012	Alba County Council, ALEA
		Study to identify the potential of biomass in the county (biomass potential map)	Performed biomass potential Study	2012	Alba County Council, ALEA
		Study of opportunity for building energy systems using RES (wind, solar) to feed the mountain tourist area "Poarta Raiului"	Performed Study of opportunity	2011	Alba County Council, ALEA
		Studies of opportunity on the use of combined RES solutions, for electricity supply to non-electrified villages, in the county	Performed studies of opportunity	2011	Alba County Council, ALEA

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No.	Direction	Action	Results	Period of time (deadline)	Responsible
		Achievement a study on opportunity and feasibility of waste energy available potential recovery - bio fraction	Performed study	2013	Alba County Council, ALEA
		Study of opportunity on the establishment of energy crops on damaged lands and the possibility to recovery by biomass/biofuels production	Performed studies of opportunity	2012	Alba County Council, ALEA, Agriculture Department
		Promotion a project for supply of mountain rescue units with electricity and heat from RES (biomass, solar, wind)	Performed Project	2020	Alba County Council
4.3	Waste management. Bioenergy potential recovery from waste. Development of energy recovery activities	Implementation of integrated waste management system in order to exploit the potential of bioenergy from waste	Integrated waste management system implemented	2011	Alba County Council /Operator
		Studies on opportunity and feasibility of available energy potential recovery from waste	Performed studies	2013	Alba County Council /Operator
		Promoting a pilot-project for energy bio-waste fraction use (e.g. Zlatna, where exist a waste sorting station), through public-private partnership	Performed pilot-project	2015	Alba County Council /Operator/
4.4	Agriculture. Recovery of energy potential for degraded lands by	Inventory of degraded lands and establish their ownership status	Degraded lands inventoried	2011	Alba County Council, Agriculture

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No.	Direction	Action	Results	Period of time (deadline)	Responsible
	energy crops and recovery of energy potential for classical cultures				Department
		Evaluation the energy potential of energy crops; performing feasibility and opportunity studies on energy production and distributed consumption of biomass	Assessed energy potential; performed opportunity and feasibility studies	2012	Alba County Council, Agriculture department
		Promoting solutions for energy production from biomass in accordance with the above decision	Implemented solutions for energy production from biomass	2013	Alba County Council
		Establish partnerships with agricultural associations to collect and use organic fraction of waste resulting from harvesting	Obtained partnerships	2012	Alba County Council /Agricol associations, Local Councils
4.5	Stimulating the use of renewable energy by private sector from the county	Providing facilities for the introduction of innovative, modern technologies and advanced equipment for renewable energy	Facilities provided for the use of renewable energies	2012	Alba County Council
		Organizing exhibitions and trade fair of technologies for production and using of renewable energy systems (organization and expansion of ALEA Fair)	Organized fairs and exhibitions	Annually	Alba County Council, ALEA
		Provide incentives and tax facilities for creating new innovative and/or technological companies to work on renewable energy	Provided incentives and facilities	2013	Alba County Council
		Including in spatial development Plan of the county of the RES potential maps (wind, solar, micro-hydro, biomass) to guide potential investors	RES potential maps included in the spatial development Plan	2012	Alba County Council, ALEA
		Support the use of electricity and heat	Carried out support	Permanent	Alba County

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No.	Direction	Action	Results	Period of time (deadline)	Responsible
		from RES in the agro-tourist mountain areas (integrated projects)	activities		Council, ALEA
4.6	ALEA + Alba County's legislative initiatives to promote the use of renewable energy	Legislative initiative for VAT exemption for the RES investments in housing and public buildings	Conducted initiative	2013	Alba County Council / ALEA
		Legislative Initiative for financial support programs of local governments who invest in the renewable energy systems implementation	Conducted initiative	2014	Alba County Council / ALEA
		Initiative to promote a national program to replace traditional wood stoves with biomass heating systems in areas without natural gas network	Conducted initiative	2012	Alba County Council / ALEA
4.7	Promoting of research results recovery and development of innovation potential in renewable energy	Promoting recovery of research and development potential for innovation in renewable energy	Research and innovation in renewable energy	Permanent	Alba County Council, ALEA
		Establish a dedicated exhibition area for energy inventions (consumption reducing, use of RES, energy smart systems)	Established an exhibition area for energy inventions	2012	Alba County Council, ALEA, „1 Decembrie 1918” University
		Support activities in the Alba county cluster RenErgEUReg Alba - minimum 5 projects RES applications with developed	Completed RES applications projects	2015	Alba County Council, cluster members, ALEA,

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No.	Direction	Action	Results	Period of time (deadline)	Responsible
		solutions by research institutes from the cluster			ADR Center
4.8	Preparation of local energy responsables from local administrations for renewable energy use and training of the RES systems installers using the high schools pathway	Initiation of training courses for specialists in the field of renewable energies within the County Council and local authorities	Performed training courses	Permanent	Alba County Council, ALEA
		Inclusion in the curriculum of high schools branch of technological specializations: renewable energy systems installer (solar, biomass power station, heat pumps, photovoltaic panels, etc.).	Specialization included in school curricula	2013	ISJ Alba/ALEA
4.9	Ensure the transparency and access to information on renewable energy sources for private sector	Posting on the County Council website of information on the use of renewable energy sources: maps of RES potential, measures to support the County Council's investment in RES, etc. It will create a discussion forum on RES	RES dedicated web page with a discussion forum, created on CJ web site	Starting with 2011	Alba County Council, ALEA
		Making and distributing of information brochures on the use of renewable energy	Produced and distributed brochures	Annually	ALEA
		Free consulting center for investors in power generation systems from RES (legislation, support schemes, necessary approvals, etc.).	Created consulting center	2011	ALEA
4.10	Support in obtaining funding for projects, aimed the renewable energy using and generation	Development of local tax regulations to encourage public or private investors to attract national or foreign capital	Issued tax regulations	Permanent	Alba County Council
		Information campaigns to help the use	Conducted information	Permanent	Alba County

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No.	Direction	Action	Results	Period of time (deadline)	Responsible
		of internal and external financing sources for companies, institutions and NGOs active in renewable energy	campaigns		Council, ALEA
4.11	Promotion of demonstrative pilot projects - by establishing public-private partnerships	Promotion of demonstrative projects centers (using of RES) through public-private partnership (within industrial parks)	Conducted projects	2015	Alba County Council /Privat partners /Local Councils
		Promoting a pilot-project for energy generation using biowaste faction (i.e. Zlatna, where exist a sorting station) through public-private partnership	Promoted pilot-project	2015	Alba County Council /Operator/ Local Councils
		Promoting a pilot-project on degraded land recovery, for energy crops (partnership, agricol association)	Promoted pilot-project	2015	Alba County Council / Private partners /ALEA/ Agricol association
		Establish a demonstrative project – public lighting in a village center, using photovoltaic energy (partnership, sources of financing from the Environment Fund)	Achieved pilot-project	2013	Alba County Council / Private partners /ALEA/ Local Councils
4.12	Promotion of public - private partnerships for the production of energy from renewable sources	Promotion the projects on biomass using for energy cogeneration, in locations with significant biomass potential (Ighiu, Bistra, Zlatna)	Promoted pilot-projects	2013	Alba County Council / Private partner/ Local Councils
		Promotion of micro-hydro power projects in the areas (minimum 4) with significant hydro potential	Promoted pilot-projects	2017	Alba County Council / Private partner / Local Councils

1.3 Monitoring of the Actions Plan

An effective monitoring and evaluation system has a very high contribution to the goals and targets proposed in the Alba County Energy Masterplan. The basis for monitoring of the Actions Plan (AP) and quantification of results is represented by **indicators**, that are directly linked to objectives and targets set in the planning process to resolve the energy problems/issues.

A proper implementation of AP will be made by using also the contribution of elements arising from the monitoring and evaluation, on which the AP will be updated periodically. Monitoring and evaluation process provides current and systematic information, which supports the process of implementation.

Monitoring and evaluation process provides a framework for:

- comparing the implementing efforts with the original purpose and objectives;
- determining the progress made for achieving the expected results;
- determining the integration in schemes proposed by the project.

Essential objectives of the monitoring system are to:

- verifying the implementation and revision of AP;
- establish the **Monitoring team** (MT) and how to report to the Energy Manager of the AP the implementation stage;
- identify the beneficiary and benefits of taken actions;
- establish whether the actions were performed and whether the effects are those, initially evaluated.

All these elements **are designed** to correct and prevent, so that the AP implementation to be in terms of efficiency. Energy Manager will contribute to the design assessing approach and to verify the results of each action. **The coordination team will be composed of experts in project appraisal, representatives of responsible agencies for collecting and centralizing data and economic entities that provide public services in the village.** In this structure, ALEA must necessarily be represented, with a key role in assessing of specific aspects related to Energy Masterplan implementation. Data collected from each implementation responsible will be used as a basis for assessing the effectiveness of implementation efforts.

In this way, can be assess whether objectives have been achieved, which actions have been completed and, in case of failure, can be decided what assistance or what changes are needed to achieve the purposed goal.