

Alba Iulia – the city of green alternatives

Name of the city: Alba Iulia

Location: the Municipality of Alba Iulia, with a population of 63,536 inhabitants, is located in the heart of Transylvania (100 km from Cluj-Napoca and 70 km from Sibiu), occupying a strategic place because of its geographic location, being one of the oldest settlements in Romania. Alba Iulia was the centre of the Roman province of Dacia during the occupation of Legion 13 and the Roman camp built here, being an important economic and military hub at the time of the Roman occupation. You can find more useful information on the following website: www.turism.apulum.ro.

Alba Iulia bears an important significance in Romanian history, due to the significant historic events that have left their mark on this city, but also because of the Vauban fortress - Alba Carolina - the most representative Vauban fortress in Romania and the second largest in all of Central and South-Eastern Europe - being a symbol for the city's multiculturalism. Alba Iulia is the place where, on the 1st of December 1918, the national unity of Romania was completed, and this has been legally recognized as a moment of national importance.



Contact details for the person submitting the nomination form:

Cristiana Fica

Contact details: Address – 5A Calea Moșilor street, Alba Iulia, Alba county

Phone - +40 745 041 504

E-mail – cristiana.fica@yahoo.com

Names of officials and others involved in this initiative:

Mircea Hava – Mayor of the Municipality of Alba Iulia

Nicolaie Moldovan – Public Administrator of the Municipality of Alba Iulia

Silvia Moldovan – Director of Technical Development Department

Brief description of the initiative/initiatives:

The Municipality of Alba Iulia is a dynamic public administration, focused on turning Alba Iulia into a "green city" by addressing its resources rationally and thinking on a long term in order to ensure a competitive, sustainable and considerable energy future.

The first initiatives aimed at meeting the European standards for energy efficiency emerged in 2010, when the Municipality of Alba Iulia decided to join the **Covenant of Mayors** Initiative promoted by the European Commission, making a unilateral commitment to reduce the CO₂ emissions in its territory by more than 20% by 2020.

This commitment is the local government's response regarding energy and environment with the intent to counter the challenges posed by the urban development of the municipality in recent years: the environmental pollution induced by accelerated development, the management of the expanding traffic network, the constructions boom, the urban waste management, the need for public utility services of decent quality.

After joining the **Covenant of Mayors**, which represents the main European movement involving local and regional authorities that voluntarily commit to increasing energy efficiency and use of renewable energy sources in their territories, the only movement of its kind to mobilize local and regional players around the objectives set by the European Commission and having been described by the European institutions as an outstanding model of multilevel governance, the Municipality of Alba Iulia has joined a consortium of 15 municipalities, public institutions and consulting companies from 7 European countries with communities whose population totals 1.5 million inhabitants in implementing project **“CONURBANT - An inclusive peer-to-peer approach to involve EU CONURBations and wide areas in participating to the CovenANT of Mayors”**, and hence to achieve energy efficiency targets.



Therefore, from May of 2011 until May of 2014, within the project **“CONURBANT - An inclusive peer-to-peer approach to involve EU CONURBations and wide urban areas in participating to the CovenANT of Mayors”**, funded by the European Union under the Intelligent Energy Europe program, the partner municipalities from 7 European countries - Bulgaria, Cyprus, Croatia, Italy, Latvia, Romania and Spain, signees of the

Covenant of Mayors, conducted a series of activities that helped both the average and large cities but also the small communities around them by creating the **Sustainable Energy Action Plans (SEAPs)** in accordance with the requirements of the European Commission's initiative on the **Covenant of Mayors**.



SEAPs essentially include a series of short and medium-term measures to increase the energy efficiency of public buildings, rational use of energy in homes and buildings in the residential and industrial sectors, the sustainability of urban transport system, upgrading the public lighting system as well as producing a significant portion of the energy required from renewable sources.

Following the activities in local energy forums and working groups organized in the conurbations of municipalities and cities, they developed **SEAPs**, thanks to the "peer-to-peer" approach between project partners, exchange of experience between partners and support provided by more experienced municipalities.

The **CONURBANT** project allowed the development of a number of 51 **Sustainable Energy Action Plans** in the ten conurbations, for a population of over 1.5 million inhabitants, with a target to reduce CO₂ emissions by 2 million tonnes by 2020. More than 1.5 billion euros will be used by the CONURBANT project partners and the conurbations to implement actions and measures to reduce energy consumption.

The major role of the Municipality of Alba Iulia as a partner of the project was to provide support for **the Baseline Emission Inventory** on which the **SEAP** can rely, outlining the measures for energy efficiency, important energy development projects, transport or environment and last but not least, the implementation of **Sustainable Energy Action Plans** for conurbations.



Through this project, the Municipality of Alba Iulia supported the creation of four **SEAPs** in the villages of Sîntimbru, Berghin, Ciugud and Ighiu, which have already been approved by decisions of local councils, turning them into a political commitment, an integral part of economic, social and environmental development policies, for the partners and beneficiaries of the **CONURBANT** project.

The Municipality of Alba Iulia's SEAP, conducted together with Local Energy Agency of Alba County, is the key document that defines the energy policies of the local government for the next 10 years in order to reduce CO₂ emissions throughout the municipality.



The Sustainable Energy Action Plan is integrated into the strategic perspectives established by the "Development Strategy of the Municipality of Alba Iulia" valid from 2005 until 2020.

This strategy aims to substantiate the path towards sustainable development of the local economy and improve the lives of citizens. Underlying the construction of this

strategy are the following assumptions:

- Ensuring optimal quality of life;
- Competitiveness and attracting investment;
- Good local governance by elected bodies and performance management;
- Getting citizen support and involvement;
- Approach flexibility for better adaptability to future changes.

The Municipality of Alba Iulia's **Sustainable Energy Action Plan** is part of the energy strategy embodied in Alba County's Energy Masterplan, which aims to guide local energy policies in Alba County.

The Energy Masterplan was based on the European and national energy strategies/policies and took into account the local context by analysing the current energy situation in the county to assess the specific energy consumption, local energy resources, especially renewable ones. A number of issues aimed at economic development trends were considered, taking into account other strategies already promoted in the county: economic, spatial, environmental, waste and water utilities development. The action plan developed in strategic areas intended to be a living and improvable document, subjected to a continuous process of monitoring/evaluation of the implementation.

The Municipality of Alba Iulia's **Sustainable Energy Action Plan** has the same conceptual consistency with the Energy Masterplan, being the document that locally transposes the ME sets of actions set out in the county, identifying needs, establishing responsibilities and deadlines, assessing the necessary financial resources and desired effects.

Methodologically, by fulfilling the commitments made by the municipality through the Covenant of Mayors, a number of steps had to be taken:

- The public signing of the **Covenant of Mayors** by the Mayor of Alba Iulia;
- Establishing a partnership agreement between Alba Iulia's City Hall and the Local Energy Agency of Alba County to coordinate the objectives of the **Covenant of Mayors**;
- The Municipality's decision to allocate the required human and material resources;
- Establishing an Advisory Council composed of City Hall representatives, important citywide institutions in the fields of energy and education/research, energy providers and public utilities, businesses, professional associations, homeowners associations, NGOs.

After completing these steps, the analysis of the energy consumption started, followed by the **Baseline Emission Inventory** for 2008, set as the year of reference in evaluating these emissions.

This phase was crucial in identifying the impact and weight of each area of energy consumption to achieve the total emissions, thus major areas of intervention have emerged to reduce equivalent consumption/emissions.

Stakes were mainly identified in the following areas:

- The built environment with the biggest potential for reducing consumption;
- The urban transport needing a sustainable urban mobility plan;
- The production of a significant part of the energy needed from renewable sources;
- Urban planning through sustainable development measures included in the new General Urban Plan;
- Citizens' awareness of sustainable energy issues leading to their mobilization and involvement in actions supported by the reduction of energy consumption.

In the **Baseline Emissions Inventory** conducted for the year of reference 2008, energy consumption in the main areas of activity and the corresponding amount of CO₂ emitted due to energy consumption in the municipality were evaluated. This inventory serves as a reference for emission reduction targets by 2020.

Data collection for the evaluation of energy consumption also started a project for developing an electronic database in the field of energy that will be implemented in the municipality.

This continuously updated electronic database is identified by a **SEAP** measure of achieving energy management. It will serve as a basic tool in the monitoring phase of the implementation of **SEAP**.

Specific consumption data (on housing, the building square meters) were compared with similar data at the national or European level, leading to conclusions regarding the main areas of intervention in the action plan.

The overall objective of reducing CO₂ emissions for the Municipality of Alba Iulia is 24% by 2020 compared to the amount of emissions estimated for the year of reference 2008.

The goal is for the municipality to be provided with the energy needed for a civilized way of life, while also preventing the wasting of energy.



According to the analysis performed by the **Energy and Emissions Inventory** in the year of reference in order to achieve the proposed reduction target for 2020, stakes were developed in the following sectors:

- Residential, public and the third sector constructions;
- Local transportation;
- Public lighting;
- Renewable energy sources;
- Land use and urban planning;
- Public procurement of services and products;
- Working with citizens and stakeholders.

This initiative gathered together 15 municipalities, public institutions and consulting companies in seven European countries and produced a significant impact at the European level through 51 Sustainable Energy Action Plans drawn up in ten conurbations. It continues to produce visible results through the measures adopted and actions implemented according to the Sustainable Energy Action Plans, benefiting during the implementation and post implementation period from the political and administrative support at a European and local level.

"This project confirms and publicizes, at home as well as and abroad, the results obtained over the last five years by our local government aimed at turning Alba Iulia into a green city, which plans its resources rationally and on a long-term. Our city has a modern and very clean public transport system, thermally insulated schools and kindergartens, day centres and residential buildings powered by solar power, large green areas whose size, quality and number increase significantly from year to year, many

trees recently planted, an Arboretum, the recreational area on the Mamut Hill, the park inside the Fortress's trenches, 20 km of bike lanes operational or under construction, a city 90% covered by the sewer system and with a new wastewater treatment plant. We are pleased that these achievements have significantly improved the quality of life in the city and that we can share them with other local governments that can evaluate and benefit from them" said Mircea HAVA, Mayor of Alba Iulia.

"The advantage of this project for Alba Iulia and for the conurbation is that these administrations technically prioritize and legitimize through public consultation and support their future projects they can develop and implement during the next financial allocation period of the European Commission for the timeframe 2014 - 2020 and beyond. A responsible administration thinks strategically its development in time while trying to exploit both its own resources and especially those resources that it can attract from the outside. The local communities' energy future must be planned in terms of green, competitive, inclusive and sustainable development" said Nicolaie Moldovan, City Manager of Alba Iulia.

"The best practices example established by the **CONURBANT** project has proved the importance of partnership in the success of objectives for the future. The workshops and seminars organized by the Municipality of Alba Iulia helped us to elaborate and approve a **Sustainable Energy Action Plan** for our village. We also had the opportunity to observe different behaviours in terms of green energy that we could apply locally. As mayor of a village, I encourage and support my colleagues who intend to join the **Covenant of Mayors** as at present, this is the best tool for the successful implementation of projects for sustainable growth and energy efficiency," said Gheorghe Damian, Mayor of Ciugud.

Using renewable energy sources will be achieved gradually by 2020, according to the **SEAP**. The first project under **SEAP** was the production of electricity by photovoltaic panels mounted on four public buildings, which was completed three years ago.

Thus, the goal of producing green energy began with the project "**Ensuring energy sustainability through alternative energy sources**" carried out by Alba Iulia Municipality and the City Council, funded by the Sectoral Operational Programme "Increase of Economic Competitiveness", Priority Axis 4 "Increasing energy efficiency and security of supply, in the context of combating climate



change”, key area of intervention 4.2. "Valorisation of renewable energy to produce green energy." The Local Administration in Alba Iulia was the first one in Romania to receive funding under Axis 4.

The application was prepared based on the experience of Alba Iulia within the project **“Achieving Energy Sustainability in Peripheral Regions of Europe (ASPIRE)”**, funded by the EU through Intelligent Energy Europe, measures such as 1 - Altner, Steer and Horizontal Key Actions, with a total budget of 1.584.160 Euro.

The overall objective of the project was to design and develop *Sustainable action plans* dedicated to the identification and use of alternative energy sources in order to develop a replicable model of local communities for alternative energy - Sustainable Energy Communities (SECs) in the peripheral regions of Europe (including Romania).

In line with this objective and wishing to contribute to the increase of the potential of using renewable energy sources in the energy economy of the local community, Alba Iulia used some of the funds allocated under the ASPIRE project to develop technical and economic studies that accompanied the application for the project **"Ensuring energy sustainability through alternative energy sources."**

From 2009 until 2011, 1,714 photovoltaic panels with a cumulative installed power of 257 kW were mounted on buildings that are headquarters for the following public institutions:

- **The Technical High School “Dorin Pavel” in Alba Iulia** – 920 photovoltaic panels mounted - 138 kW
Installed Power PV = 138 KWp
Energy production = 150 MWh/Year
CO₂ emissions decrease= 105 Tonnes/Year
Amount saved = 18.750 Euro/Year
- **The Nursing Home for the Elderly** – 524 photovoltaic panels mounted - 78.6 kW
Installed Power PV = 80 KWp
Energy production = 86.5 MWh/Year
Solar panels (ACM) = 44 mp
Energy production t = 134 MWh/Year
CO₂ emissions decrease = 86.35 Tonnes/Year
Amount saved = 14,060 Euro/Year
- **The Day Centre for the Elderly** – 54 photovoltaic panels mounted - 8.1 kW
Installed Power PV = 8 KWp
Energy production = 8.65 MWh/Year

CO₂ emissions decrease = 6.05 Tonnes/Year

Amount saved = 1,100 Euro/Year

➤ **The Programmes Department of the Municipality** – 216 photovoltaic panels mounted - 32.4 kW

Installed Power PV = 32 KWp

Energy production = 35 MWh/Year

CO₂ emissions decrease = 24.5 Tonnes/Year

Amount saved = 4,375 Euro/Year

The total project value was almost 2 million Euros and it was financed largely from European funds. Through the deployment of solar power, a saving of more than 80% in energy costs was achieved in the four selected locations. The total installed power of the photovoltaic panels is 257 kW which translates into an energy production of 303,280 kWh / year. It has also led to a reduction of CO₂ emissions into the atmosphere by about 500 tonnes / year.

A saving of more than 80% in energy costs is approximately 100.000 Euros, an amount that has been reallocated to other priority public investment for the local community, namely the planting of trees and shrubs in the city and landscaping with grass or flowers.

Recently, a number of 206 ornamental trees have been planted in the Vauban Fortress of Alba Carolina. In the inside area there are 94.027 sqm of lawn, 615 sqm patches of flowers and 452 sqm of hedges. On May 30 of this year, flowers were planted in the trenches of the Fortress in the shape of the city's logo.



The project has achieved its objectives of increasing the quality of life, of a sustainable and competitive development of Alba Iulia through a diversification of production sources, of technology and infrastructure for electricity production from renewable resources (solar). The project has also succeeded in reducing CO₂ emissions and in having a direct and indirect impact on target groups materialized as social, community and educational benefits.

Currently, 100 elderly benefit from the residential services provided for an indefinite period of time in the rehabilitated and modernized building of the Nursing Home, 1,300 students participate in educational activities of the Technical High School "Dorin Pavel" in Alba Iulia, 2,000 elderly take part in the activities of the Day Centre for the Elderly in Alba Iulia and 25 local experts and staff employees are involved in the development and implementation of grant projects in the Programmes Department of Alba Iulia City Council.

In recognition of its green energy achievements, Alba Iulia was ranked in 2013 as the best European municipality for the category 20,000-100,000 inhabitants, by the Romanian Renewable Energy Sources Champions League for its project of installing over 1,700 solar panels on the four public buildings in the city.

In addition to the previously mentioned initiatives, a number of complementary initiatives have been initiated by the municipality in support of promoting sustainable development, education and public awareness on environmental protection and green energy use. These initiatives include the approximately 20 km of bike lanes recently built, which connect the main areas in the city and which are aimed at making citizens familiar with new environmentally friendly habits, namely the bicycle as an alternative means of transportation. The purpose is to have a large number of people not only to experience this type of transport, but also to adhere to it.

Another initiative with the same purpose has led to the opening of a bicycle sharing centre in Alba Iulia, with the intent to prioritize cycling and rearrange the entire urban space available according to these priorities.

Also, the local public transport company (STP Alba Iulia) is concerned with innovation and research. In September 2011, it started to cooperate with the Romanian inventor Cornelius Birtok Băneasă, author of a special air filter that reduces fuel consumption and increases engine power. One of STP's buses was equipped with such a filter, observing after about two weeks, a nearly 10% reduction in fuel consumption and no negative side effects. The invention applied to STP's buses received the gold medal at the International Exhibition of Inventions in Geneva in 2012. Moreover, STP started using biofuels in urban passenger transport. The biofuel (rapeseed methyl ester) was obtained entirely in Romania through a partnership between STP, the Technical University of Cluj-Napoca and the Institute for Research and Analytical Instrumentation in Cluj-Napoca.

Through this award, STP has succeeded in placing urban transport in Alba Iulia on the map of urban transport in Romania. Moreover, in 2012, in recognition of its performances, STP Alba Iulia hosted the 100th meeting of the Regional Transport Committee of the International Association of Public Transport - UITP.

In conclusion, Alba Iulia's priority is to continue these initiatives in the future programming period 2014-2020 and become partners in projects aimed at improving the quality of citizens' life and encouraging the adoption of a green behaviour in all economic sectors.

The person designated to accept the award:

Nicolaie Moldovan - Public Administrator of Alba Iulia Municipality

Phone: +40 723 667 719

E-mail: moldovan.nicolaie@gmail.com