



WASTE to ENERGY

HOW THE IDEA WAS BORN....

For many years, waste management and energy production in East Sweden attracted a lot of international attention. Länsstyrelsen Östergötland region hosted numerous visitors, both from European and other countries such as China and Canada interested in transferring know-how and experience in energy recovery from waste.

In 2007 the European Environmental Agency (EEA) published a new study on diverting municipal waste from landfill highlighting the need for increased efforts to tackle growing waste volumes and appropriate policy actions.

In 2008, as there is long standing experience and great interest among both policy makers and practitioners in the field of waste management in East Sweden, the Lead Partner proposed the idea of a waste to energy (W2E) project based on previous cooperation among some of the partners.

All partners agreed on a common goal of achieving more cost-effective solutions to the various problems faced within different regions.

The project started in January 2010, after the approval by the INTERREG IVC Programme.

The idea was based on the need to divert waste from landfill and demonstrate ways to increase production of sustainable energy and contribute to low-carbon economic growth in Member States and was focused on the potential to improve the sustainable management of waste in Europe's regions, and to produce energy from waste.

Its objective was to exchange knowledge and good practice about regional policies for sustainable waste management, by changing the perception of waste as a potential resource, and to increase energy recovery from waste.

The project itself was innovative in many ways:

- it is connected to significant environmental agendas: one being the need to reduce waste going to landfill, and the other for demand for more renewable energy;
- it is linked to the connection between sustainable waste management and the potential for economic growth across the EU given that the economic potential of waste management, as an economic activity, is not recognised;
- it operated at the governance level at which waste policy is organised. Much of the work in the EU on waste management, for example by the EEA, is at a national level.

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THE PARTNERSHIP

The project brings together 8 partners which are using different approaches to sustainable waste management. All partners are either local or regional authorities with responsibility for waste management or regional energy agencies, or both.

Five are new Member States

SGPRDA - South Great Plain Regional Development Agency, Hungary. Its aim is the development of the human and economic resources as well as the environmental state of the South Great Plain Region. www.darfu.hu

Kujawsko-Pomorskie Voivodeship, Poland. Its competences cover all the aspects of regional development: education, infrastructure, environment, investment, etc. Kujawsko – Pomorskie is a dynamically developing region with the major role of the food, pulp and paper, chemical, electro machine and plastic industries. www.kujawsko-pomorskie.pl

SIEA - Slovak Innovation And Energy Agency, Slovakia. SIEA acts as the national energy agency and establishes procedures in accordance with its institutional structure. SIEA cooperates mainly in the preparation of legislative regulations, analysis, advice and public information in the field of energy efficiency, energy innovations and renewable energy sources. www.siea.sk

REA - Regional Energy Agency, Slovakia. It deals with everything related to rational use of energy, energy savings and renewable energy sources. One of the basic tasks of agency is to inform and promote the rational use of energy, opportunities to reduce household energy consumption and uses renewable energy sources. www.rea.sk

Dâmbovița County Council, Romania. It is the regional authority that has developed waste policies at county (regional) level and works with all the municipalities in the County, within an Intercommunity Development Association, whose goal is to develop the strategy of the integrated waste management, and also to manage, through a specialized department, the activities of the system. www.cjd.ro



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Whilst three are from longer-standing Member States

County Administrative Board of Östergötland, Sweden. Is a governmental agency that represents the Riksdag and the Government in the county and serves the best interests of the residents. The purpose of our transnational cooperation is to improve regional development in several areas. We promote Östergötland through this cooperation in order to increase sustainable economical, ecological and social development. We strive to put the regional strategies and programmes into realization through participation in transnational EU-projects. www.lansstyrelsen.se/ostergotland

Cumbria County Council, United Kingdom. It is the second largest county in England but fewer than 500,000 people live here and over 50% live in rural communities, bringing with it diverse and unique challenges. The county also boasts unique skills in nuclear technologies, is a dynamic renewable energy area with diverse energy resources and home to Britain's Energy Coast. Integration of collection and disposal functions is via the Cumbria Strategic Waste Partnership, publicly known as Resource Cumbria. Cumbria County Council has recently signed a 25 year contract with Shanks Waste Solutions to build two 75kt Mechanical Biological Treatment plants to convert non-recyclable waste into Solid Recovered Fuel. The Council would expect to transfer policy lessons from this project and has significant EU programme experience. www.cumbria.gov.uk

ARAEN - Abruzzo Regional Energy Agency, Italy. Its assigned activities are primarily related to improve the management of energy demand by promoting energy efficiency, promote the better utilization and better management of local and renewable resources, and optimize the production's costs and support research aimed at exploitation of the supply optimal conditions, the management of regional functions in the energy sector. Abruzzo Region supports a modern environmental policy, recognizing as a fundamental objective the conservation and protection of the environment. In order to achieve this objective, Abruzzo Region will develop actions which involve the whole chain of integrated waste management, that include: reducing of waste production, foreseeing energy recovery from residual waste not otherwise recoverable; promoting activities like: communication, education and training of citizens and specialists in the sector. www.regione.abruzzo.it/xAraen



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BEST PRACTICES

Cockermouth School, Cumbria, United Kingdom

Schools across Cumbria produce around 2,200 tonnes of waste every year. Cumbria County Council's Waste Education Team and district council officers work specifically with schools to encourage them to embrace the 3Rs: reduce, reuse and recycle. The team offers schools a free service to help them find ways to reduce their waste, to reuse what resources they can and then link in to local recycling services. The team also helps schools with their purchasing, encouraging them to buy recycled products where possible and also to compost their fruit and vegetable waste. All of these actions help schools become sustainable and take part in the national Eco-Schools award scheme. This is a "whole school, whole environment" programme which aims to make schools lean and green learning machines.

There are three levels of award once a school has registered for the scheme - bronze, silver green flag and ambassador (which entitles the holder school to fly the flag and use the logo on its stationery). There are 18 schools in Cumbria which currently hold the green flag.

At September 2012 Cockermouth school is the first secondary school in Cumbria with Ambassador Status.

Finspångs Tekniska Verk linköping Östergötland County Administrative Board, Sweden

The region of Finspång in Östergötland has 22 000 inhabitants and the municipality runs a profit-making company called Finspångs Tekniska Verk. Finspångs Tekniska Verk manages waste collecting, fresh water supplying, sanitary systems and energy production in the region. They also run a heat combustion plant. While there are examples of big CHP plants in Östergötland such as Linköpings Tekniska Verk, the plant in Finspång only supplies heat as electricity is provided through water plants. The plant itself is of the smaller kind, with a waste storage capacity of 1 500 m³. The heat production runs every hour of every day. The plant burns 20,000-25,000 tons of waste every year, which produces 60GWh annually. Finspångs Tekniska Verk has 700 residential and 200 rental properties as their customers. Finspångs Tekniska Verk is paid to handle the municipal waste in Finspång. 100% of the household waste in Finspång municipality is used for district heating. The district heating is provided at market competitive prices compared to other heating sources. and also the price of district heating provided by Finspångs Tekniska Verk in 2011 was 825 kr Mwh ca (88€ for Mwh) and the average for the whole country for the same period was 770 kr/MWh ca (82€/MWh). This proves that even small sized waste incineration plants can produce marketable district heating from renewable sources.



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Pilze-Nagy Ltd operating Kecskemét Oyster Mushroom Farm, Hungary

The main activity of Pilze-Nagy Ltd. operating in the Kecskemét region for 20 years is the production of oyster mushrooms and the substrate necessary for the mushroom production. The company produces substrate in an annual quantity of 12.000 tons, and provides fresh oyster mushroom for sale in an annual quantity of 1.000.000 kg, with which it gives the 50% share of the domestic production. The sales revenue was HUF 850 million in 2009. Upon its plant size, the Pilze-Nagy Ltd. is ranked within the 10 largest oyster mushroom plants in Europe. The Pilze-Nagy Ltd. needs 4.000 - 5.000 tons of wheat straw, 8.400 m³ of water, 500.000 kWh of electric energy, 4.000 tons of coal, 5.000 kg of PB gas, and 17.000 Nm³ of natural gas annually for its production. The energy costs achieve the 12% of the production costs. Significant quantity of organic waste remains after the oyster mushroom production annually: 3.000 tons of used mushroom substrate, 150 tons of mushroom stripes, and packaging waste of mushroom parts. The Pilze-Nagy Ltd. agricultural biogas plant with gas engine of 330 kW electric power capacity started its operation in October of 2008. The plant has a potential to process agricultural organic waste material in a quantity of maximum 10.000 tons annually, a part of which supplied by the mushroom production. The produced biogas is the basis of generating electricity (2.400.000 kWh annually) and heat energy (3.100.000 kWh annually) in the CHP plant. The electricity produced is supplied to the national grid upon the green electricity take-over system. The heat quantity remaining over the biogas plant needs is not yet utilised. The biogas plant is in continuous operation throughout the year. The quantity of digested material remaining after fermentation is 12.774 m³ annually. Currently the total quantity is used on agriculturally cultivated fields as soil conditioner. By establishing the biogas plant, the entire problem of the organic waste of oyster mushroom growing has been eliminated, the company turned to be decentralised renewable energy producer. Further advantage of the development is that a multiple utilisation of an agricultural by-product – the wheat straw – is realised in the mushroom production and energy generation complex system and, at the end of the process, the final digested material is given back to the soil as a fertilizer. The proposed payback period of our biogas project was 11 years, the subsidy has reduced it to 7 years. But because of the immaturity of the Hungarian biogas professional, economical and regulation background, our project went through more problems in the starting period than it was expected. Recently our calculation is that the payback period is not less than 15 years.



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Fiskeby Board in Norrköping Östergötland County Administrative Board, Sweden

Fiskeby Board in Norrköping manufactures cardboard boxes for food producers, mainly targeting frozen food. The cardboard boxes is produced from 100% recycled fibre. The companys product is called WLC (white lined chipboard) and is gained from recycled paper, provided by both companies and households. They export roughly 80% of their total 160 000 tons of production, with an estimate turnover of 900M SEK. The companys enviromental agenda stretches further than recycling. To begin with they strived to increase their production while decreasing their enviromental consumption. To decrease the energy and fuel consumption would not only mean decreasing their enviromental imprint, but also greatly reducing two of their biggest expenses steam production and energy from an external source. This is a massive task to execute while your also competing with the other European WLC-producers. To address the issue of boilers, Fiskeby switched to a combustion boiler instead and started using industrial waste (65%) and their own paper reject (35%) instead. Thus they get paid to handle the industrial waste and re-use it as fuel. Eventually they installed a stream turbine as well, which led to 30% reduction in terms of their external energy usage. The company was in a dire economic situation before this practice was indroduced, the high energy costs were a huge burden for the company. Now they are able to: 1. handle their own waste and 2. use it for energy production for their industrial process. They produce 5 MW of electricity and 53,6 tons/h of steam. They cover 40 % of their electricity needs and 100% of their steam needs. They handle around 80 000 tons of waste per year and 75 % of their energy is from renewable sources. The payoff for this investment was 6 years. The company is nowadays one of the leading cardboard manufacturers in Europe.



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SHORT SUMMARY OF THE REGIONAL ACTION PLANS REALIZED

Regional action plans have been developed by the 3 working groups. The action plans are focused on the potential for each region to increase the production of sustainable energy from waste.

The process has been achieved through 4 main steps:

- bringing partners together in an opening seminar/workshop to understand waste production potential and techniques in each region,
- planning 4 study visits in 4 of the partner regions which demonstrate particularly good examples of waste to energy. Identifying and documenting the good practices seen in the study visits,
- translating the good practices into a generic policy tool which can help any region understand the potential for energy generation from waste, commencing with a further practitioners' workshop,
- using the policy tool in each region to develop action plans, initiated by a third workshop. The action plans will set the framework for further development.

The results are summarized below for each partner.

County Administrative Board of Östergötland

Decoupling waste generation from economic growth is the main goal for the region of Östergötland. The secondary goal is that Östergötland will be the leading region when it comes to sustainable waste management. Working both on reducing the amount of waste, using the best treatment alternatives and as well developing new technologies and approaches for even better waste handling. According to the action plan for the region of Östergötland there are targets for all five levels of the waste hierarchy as well as specific targets for hazardous waste.

Cumbria County Council

The aim in this project has been to use the county's overall sustainable waste management strategy as a basis for the Waste to Energy Action Plan that can enable us to secure benefits for the people of Cumbria. The Cumbria Waste to Energy Action Plan seeks to address the following issues: EU, national and local policy and context; targets; awareness raising; opportunities and markets; reporting progress.

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ARAEN - Abruzzo Regional Energy Agency

The current system of municipal waste management of Abruzzo Region, which has critical points in some geographical areas, need restructuring in the future years in order to ensure not only compliance with the provisions of current law, but also the sustainability and technical-environmental solidity. The Regional Action Plan developed by Abruzzo Region will address the above crucial points and will support the Regional Waste Management Programme of the Abruzzo Region for the years 2007 – 2015.

SGPRDA - South Great Plain Regional Development Agency

The backbone of the Regional Action Plan for sustainable waste management in the South Great Plain region is a detailed comparison of the regional and national waste management practices with those of the EU, and also the set of good practices witnessed during the study visits within the W2E project. The Action plan presents possible breakout points for sustainable waste management of industrial waste and, in more details, of municipal waste.

Kujawsko-Pomorskie Voivodeship

The main assumption for the Action Plan is that it is complementary to the Regional Waste Management Plan and helps to introduce the requirements of the revised European Waste Framework Directive (Directive 2008/98/EC on waste). The Action Plan developed as a result of W2E project is not meant to be a replacement of the existing document but rather a supplement to it. The target group of the action plan are the environmental units in the municipalities in Kujawsko-Pomorskie region. The action plan based on international exchange of knowledge shall become another informal tool to put the waste management plan into operation.



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SIEA - Slovak Innovation And Energy Agency and REA - Regional Energy Agency

The Action Plan developed by two partners from Slovakia is focused on improvement the sustainable management of waste at two levels: Bratislava region and Šaľa district. The Regional Action Plan includes recommendations on further actions, which can reduce the amount of municipal waste going to landfills in favour of re-use, recycling and energy recovery which is in line with the waste hierarchy. The objective of SIEA and REA within the project has been to create a document using a good practice from a foreign partner and to make all stakeholders from the region actively participate in it. The Regional Action Plan is in accordance with the national Waste Management Programme of the Slovak republic for the years 2011 – 2015 and could be a part of more extensive waste management strategy. In any case, the development of a new system of municipal waste management will require significant investments and the activities proposed in the Action Plan could be subjects of new projects implemented through different European programmes.

Dâmbovița County Council

Dâmbovița main goals of Action Plan are the development of a regional policy with a view to implementing an energy recovery system from waste increasing the efficiency in applying the policies and regulations in the field of energy recovery from waste. Create, moreover, financial mechanisms and economical systems to support the waste to energy system and make an assessment of the potential that is useful to energy recovery from waste. Create programs of energy recovery and establishing awareness measures and motivation systems for all involved parties.



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RAISING AWARENESS: ALL THE EVENTS ORGANIZED

All partners organized dissemination seminars. Many efforts have been done for reaching all the possible people in order to increase their sensitivity.

4 interregional seminars

Opening seminar, 02 - 03 March 2010 in Linköping, Sweden

Bratislava interregional seminar, 10 March 2011 in Bratislava, Slovakia

Cumbria interregional seminar, 29th November 2011 in Kendal, United Kingdom

Östergötland Seminar, 25 – 26 April 2012 in Linköping, Sweden

5 study visits

Cumbria study visit, 05 – 07 May 2010 in Cumbria, United Kingdom

Hungary study visit, 10 – 11 June 2010 in Szeged, Hungary

Poland study visit, 3 September 2010 in Torun, Poland

Östergötland study visit, 3 – 5 November 2010 in Linköping, Sweden

Romania study visit, 7 – 8 June 2011 in Targoviste, Romania

Other events

INTERREG IVC – instruction for use seminar, 2 December 2010 Ruse, Bulgaria

1st Dissemination Event, 23 June 2011 Szeged, Hungary

Workshop "Technologies for the management of the municipal waste in Europe and in the world"
Abruzzo Region, Chieti Province, December 15th, 2011

Workshop "Technologies for the management of the municipal waste in Europe and in the world"
Abruzzo Region, Teramo Province December 16th, 2011

Workshop "Technologies for the management of the municipal waste in Europe and in the world"
Abruzzo Region, Pescara January 25th, 2012

Workshop "Technologies for the management of the municipal waste in Europe and in the world"
Abruzzo Region, L'Aquila January 26th, 2012

2nd Dissemination Event, 23 April 2012 Szeged, Hungary

Dissemination Event, 14th June 2012 Dalston, Cumbria.

Final conference

12th June 2012 in Pescara, Abruzzo Region (Italy)



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Interview with
Mr. Péter Halász,
Deputy Director for
Regional
Development of the
South Great Plain
Regional
Development Agency
– Hungary

How is the current management of waste in your region and which are the main aspects of the policy about them? Within the Ministry of Rural Development, the State Secretariat for Environmental Affairs is responsible for environment protection. Their tasks are promotion of sustainable development, the preservation of air, water and soil quality, and the protection of natural assets. In the area of waste management, the aim of the Office is to reduce pollution and to aid the recycling and up-to-date treatment of the volume of waste produced. The waste management regime in Hungary is continuously being developed to achieve conformity with the EU targets and directives, particularly with the Directive 2008/98/EC. The waste management tasks are regulated by the Act on Environmental Protection (Act LIII of 1995) and by the Waste Management Act (Act XLIII of 2000). The medium- and long-term tasks are defined by the National Environmental Programme and by the associated National Waste Management Plan. Hungary finds itself in a challenging situation as it faces the imminent legislative approval of a new national Waste Management Act, which will lead to the restructuring of existing waste management systems. The main aspects of the policies in Hungary are compliance with the EU directives and a shift towards waste management hierarchy.

How the project helped the partner in having a new vision about waste and its potential resource, energy? Through the Waste to Energy project by utilizing the conveyed experience and the witnessed practices, relying on the current waste management procedures and statistics we have collected a pool of ideas for steps that could be taken in the process of repositioning waste as potential resource for energy. In fact, one of the best practices identified in this field comes from Hungary. The Pilze-Nagy Ltd. is a company that produces oyster mushrooms and operates a biogas plant, which processes agricultural organic waste materials and generates electricity and heat. By establishing the biogas plant, the entire problem of the organic waste of oyster mushroom growing has been eliminated. Therefore not only did we gain new knowledge through the partnership, but we have also managed to give something back and contribute to overall objectives of the project and the partnership.

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What was the impact on the public opinion about the use waste as energy in general, and in particular about the objectives of W2E project? When speaking of waste to energy, or waste as energy, the first image that comes into the mind of Hungarians are incineration plants and incinerating. However, people tend to forget other methods of energy recovery such as biogas production. Through the project we have tried to strengthen the possibilities for biogas production and the methods of its utilization in addition to increasing the public awareness and shaping their opinion. In the recent period a couple of biogas plants were established in our region: in Szeged and in Szarvas.

What is the sensitivity of the people in this field (public opinion)? People in our region are very sensitive about incineration; we could say the general opinion disapproves of it. On the other hand, regarding biogas production facilities there is no visible objection in the public. The average people do not have extensive knowledge and thorough information about either; they base their judgement on superficial preconceptions.

What is the hope for the future in the field of waste and in the field of using renewable energy with respect to the present situation in your region? Agriculture is the major production sector in the South Great Plain region in Hungary. One of the breakout points could therefore be the involvement of agricultural waste in biogas production.

What will be your next step in this field? Once the new Waste Management Act has been passed the next steps in this field will be reorganization, restructuring and moving in the direction of suggested and supported actions.

What is the lesson learned by participating in W2E project? The most valuable lesson for us was learning the good practices and seeing them actually working in action. We can certainly say that results and efficient work in this field can only be achieved with further collaboration and cooperation. One of the key elements is shaping the public opinion: rationalizing waste production and educating the households on responsible waste collection, the value of reuse and recycling. In addition to the general public, it is advisable to reach out through dissemination of best practices to the key regional players and decision makers as well, for they are in a position to produce palpable results.



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What was the added value in participating in W2E project? The added value for participating in the project was that even though in waste management we lag behind the practices of Western Europe, nevertheless, we were able to show the partnership W2E facilities (e.g. Pilze-Nagy Ltd.) that are of best practice quality - examples worth studying and adopting all across the Europe.

What could be the message to transmit to EU institution? Our message is that sustainable waste management should be considered as a potential for economic growth – therefore waste management in itself has the potential of becoming the engine that could enable the regions to catch up with the EU average.

How W2E project could sustain the cause of EU vision 20 20 20? Individual strategies within the EU vision 20 20 20, such as the waste to energy, contribute to the fulfilment and sustainability of the cause of the whole vision. The increasing tendency of energy recovery from waste (also strengthened by our project) directly contributes to achieving the envisioned goals of increasing the energy efficiency and energy share from renewable resources. In addition, the promotion of recycling indirectly helps decrease production related Greenhouse Gas emissions.



European Union
European Regional Development Fund



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«PRESENT AND FUTURE VISION OF EUROPEAN SUSTAINABLE DEVELOPMENT»

How is the current management of waste in your region and which are the main aspects of the policy about them?

The main method of waste management in our region is dumping. However, owing to the fact that the environmental protection and rational management of resources are chief priorities of the European Union's policy, we were obligated to take into consideration in our strategic and planning documentation the principles of a sustainable development. The above principle also refers to the sustainable management of waste, understood as avoiding the emergence of waste and supporting an efficient use of natural resources by applying the concept of waste's life cycle and promoting its reusing and recycling. The Voivodeship's documents define the directions and assumptions re. the waste management, including The Plan of Waste Management for the Kujawsko-Pomorskie Voivodeship, they indicate the necessity to fulfil by Poland accession commitments in the scope of waste management, according to principles obligatory in the European Union. Assumptions contained in it indicate the need to achieve the system of waste management, which is in accordance with the principle of a sustainable development in which principles of waste management are fully realised, and especially the principle of dealing with waste according to the hierarchy of waste management. The supreme goal of the policy in the scope of waste management in Kujawsko-Pomorskie Voivodeship is to prevent the emergence of waste, solving the problem of waste 'at a source', recovery of raw materials and reuse of waste and a safe, for environment, final disposal of waste unused in other way. A prerequisite for the realization of the above goal is the reduction of material-consuming and energy-consuming production (applying clean technology), using alternative renewable sources of energy, applying a full 'life cycle' of the product (production, transport, packaging, use, possible reuse and disposal).

How the project helped the partner in having a new vision about waste and its potential resource, energy?

Waste To Energy is a project whose main purpose is to draw up a strategy of action allowing to reduce the volume of dumped waste, and at the same time to find an optimal solution of its reuse in the form of energy. One of the chief assumptions of the project is to transfer good practices and techniques referring to a sustainable waste management. Study visits in which we participated and ability to learn about new solutions in the waste management policy became an ideal opportunity to share experience which we will then be able to pass to interested entities in our region.

Interview with Mrs.
Małgorzata Walter,
 Head of the
 Department of
 Environment in the
 Marshal's Office of
 Kujawsko-Pomorskie
 Voivodeship – Poland



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What was the impact on the public opinion about the use waste as energy in general, and in particular about the objectives of W2E project? The main form of passing knowledge and experience gained during the project participation included lectures, brochures, website and direct transfer of information to the society and interested entities. Thanks to this, social awareness and knowledge has increased among inhabitants of our voivodship as regards the scope of good practices on energy recycling and regional policy in connection with a sustainable waste management.

What is the sensitivity of the people in this field (public opinion)? In the face of steadily increasing volumes of waste generated, a rational policy of sustainable waste management has become a necessity. Promoting the idea of energy recycling, i.e. partial recovery of energy consumed for the production of different goods, and passing good practices in this scope is a necessity in order to increase the ecological awareness of people in Kujawsko-Pomorskie region and a positive social reception of this technology. It is necessary to continually intensify ecological education promoting the waste to energy recycling and introduce an efficient information and education campaign in this scope.

What is the hope for the future in the field of waste and in the field of using renewable energy with respect to the present situation in your region? Taking into account the ecological policy of the state and a National Waste Management Plan 2014 – plans and hopes for the future in the context of waste development include the following goals: to increase the number of recovery, especially recycling of glass, metal, plastic and paper and cardboard, as well as energy recovery from waste in accordance with the requirements of environmental protection and reduction of the volume of waste directed to dumping sites, elimination of the practice of illegal waste dumping. On the territory of Kujawsko-Pomorskie, pursuant to the agreement concluded by the city of Bydgoszcz and city of Toruń, it is planned to build in Bydgoszcz a Facility of Thermal Transformation of Waste operating for the Bydgoszcz-Toruń Metropolitan Area.

What will be your next step in this field? It is necessary to define the scope of tasks necessary to secure an integrated waste management on the territory of the region in a way guaranteeing the protection of all elements of environment, taking into account present and future technical and organizational possibilities, as well as economic conditions, and also the technical level of the existing infrastructure.



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What is the lesson learned by participating in W2E project? The participation in the Waste to Energy project gave us the possibility to exchange and share knowledge and good practices regarding the techniques of energy recovery from waste. As project partners, we had the opportunity to exchange information on the current state of knowledge and experience in the scope of rational waste management.

What was the added value in participating in W2E project? I think that certainly it is the broadening of experience, which we gained, among other things in the scope of cooperation with the project partners. Extremely important is also a fact of a continued transfer of knowledge, between participants of the project, coming in greater and greater stream from the scientific research facilities engaged in this project.

What could be the message to transmit to EU institution? Thanks to the participation in the project of the Kujawsko-Pomorskie Voivodeship, a universal tool of the regional policy has been worked out, regarding a regional waste management. The project helped us define priorities, goals and tasks relating to the use of waste for energy purposes and development of Kujawsko-Pomorskie society, which is aware socially and as regards waste. By education, prevention and steadily increasing social awareness as regards waste, proper trends have been indicated and priority development directions have been set for the creation of a pro-ecological waste management in our region.

How W2E project could sustain the cause of EU vision 20 20 20? The demand for energy in all countries of the world, perspectives of exhaustion of conventional energy sources and procedures aiming at the protection of the natural environment of a man, have largely increased the interest in other methods of energy acquisition. One of such methods is the reclamation of energy from waste. A thermal transformation may be applied to, among other things, municipal wastes, sewage sludge, hazardous wastes and biomass. As a result of a thermal transformation of municipal wastes, we obtain the reduction of waste volume to 10%, and a mass to 35% of the initial value. Using waste for energy means also reducing the use of fossil fuels (energy raw materials) and diversification of energy sources. Therefore, it is an obvious necessity to support the development of technology and construction of installations for the acquisition of renewable energy from waste containing materials undergoing bio-degradation, in order to realise the assumptions of the so-called climate and energy package.



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Interview with
Mr. Pavel
Štarinský, Director
of International
cooperation and
projects
department of
Slovak Innovation
and Energy
Agency -
Slovakia

How is the current management of waste in your region and which are the main aspects of the policy about them? Municipal waste is currently burned in the incineration plant in Bratislava with the total annual capacity of up to 135 000 tonnes. Nevertheless, more than 40 percent of the mixed municipal waste generated in the Bratislava region ends up in landfills because the local incineration plant burns only waste collected in the capital. Standard methods are used for the collection, separation, and recycling like in western countries. Since Slovakia has not adopted the Framework Directive on Waste and has not accepted waste management hierarchy no sufficient legislative pressure has been created to reduce landfills. For this reason, we lag behind in key issues of the waste management.

How did the project help the partner in having a new vision about waste and its potential resource, energy? We had an opportunity to gain general knowledge about methods and technologies for energy recovery from waste during study visits. Many countries have endeavoured to recover energy from waste and some of them are now able to recover energy from one third to as much as one half of their municipal waste. These countries include Sweden, Switzerland, Belgium, Denmark, and others and this is very motivational.

What was the impact on the public opinion about the use of waste as energy in general, and in particular about the objectives of W2E project? It is too early to assess the impact on the public opinion. The public and relevant institutions are skeptical, but they appreciate the initiative... In any case, this is a long-term issue. In Slovakia, as well as in other countries there is a very strong attitude of the public against an incineration plant and waste treatment facilities in general. This requires a systematic work; a project implemented on a local/ regional level cannot change public opinion in this area. It is the matter of several generations. It is necessary to inform the general public in order to promote the development of innovative ideas, particularly in the environmental field of sustainable production and the use of waste as a resource. Without these initiatives and the integration of information into all aspects of life we will be unable to follow the legal requirements.

What is the sensitivity of the people in this field (public opinion)? One of the biggest obstacles is the negative stance and bias of citizens against the waste incineration, even though incineration plants belong to facilities with the strictest pollution emission limits. Before they can start their operation, they have to go through a complex system of obtaining permits from authorities as well as the public. Moreover, the investment cost to build an incineration plant is 100 times higher than an investment into a landfill with a comparable capacity.

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What is the hope for the future in the field of waste and in the field of using renewable energy with respect to the present situation in your region?

In the Bratislava region there is a strong presumption for the use of renewable energy sources as well as the utilization of waste, if it is be accepted as an alternative energy source. But that is the question of a distant future.

What will be your next step in this field?

Based on the outcomes of the project, we intend to share good practices and recommendations in reducing the waste going to landfills in favour of energy recovery (re-use, recycling, and other recovery operations). For this purpose, we will use the SIEA's website and other activities in which we participate. In addition, we will take advantage of experience and knowledge acquired during the W2E project and will definitely use and develop them in new projects to come that will be implemented through different European programmes.

What is the lesson learned by participating in the W2E project?

Study visits enabled the W2E project participants to reflect on examples of good practice they have seen and heard. We have compared and contrasted practices and policies in the other EU partner regions and reviewed the advantages and disadvantages of the different waste management systems.

What was the added value in participating in W2E project?

The interregional exchange of experience in this field has created an added value not only to the regions in the partnership. More effective regional policies and solutions can be developed through interregional learning and understanding, as it was in this case. Since knowledge is limited within regions, there is a need for interregional activities to develop joint approaches and exchange experience on how to improve policy making on a local/regional level.

What could be the message to transmit convey to EU institutions?

More new projects implemented through different European programmes aimed at improving sustainable waste management could help to address the stagnant situation in this field. On the other hand, the introduction of electronic forms of control (e.g. FLC within the Programme INTERREG IVC) could prevent the generation of additional waste and save natural resources.

How W2E project could sustain the cause of EU vision 20 20 20?

The objectives of the W2E project clearly support the EU's vision 20-20-20, but only on a theoretical level. It is very difficult or even impossible to implement innovative measures proposed in the framework of this cooperation without existing legislative background. The approval of a new national Waste Act, which transposes 13 European Union directives, should bring changes into the existing waste management system in Slovakia. After that it will be possible to speak about fulfilling the objectives of the EU visions.



WASTE to ENERGY

«PRESENT AND FUTURE VISION OF EUROPEAN SUSTAINABLE DEVELOPMENT»



Interview with
Mr. Karol Miklos,
Director of REA -
Slovakia

How is the current management of waste in your region and which are the main aspects of the policy about them? Waste management in the town of Sala is a waste collection, transportation, waste recovery and disposal, including the care of disposal. There are several options for waste disposal. The key, respectively most common are: landfilling, incineration, storage and reuse of waste. Waste recovery activities are leading to the utilization of physical, chemical or biological waste PROPERTIES.

How the project helped the partner in having a new vision about waste and its potential resource, energy? The study visits to partner countries, we have the opportunity to see how the waste is used, processed and re-used for further processing. That is the vision for the future of the project W2E where waste is treated as a potential source of energy, we have more positive thoughts for the future.

What was the impact on the public opinion about the use waste as energy in general, and in particular about the objectives of W2E project? Many people do not even know that the waste can be reused, treated so that energy-efficient. Project W2E can disseminate the idea of waste as a potential energy source.

What is the sensitivity of the people in this field (public opinion)? The people at first must have to learn to read why is important to separate the waste, sort and put off to the dumpster because it is only effective separation. People should be constantly learning and the need to constantly remind them. Begin to be children in nurseries, schools.

What is the hope for the future in the field of waste and in the field of using renewable energy with respect to the present situation in your region? In our region, the waste sorts, separates. In the district is Sala incinerator, but it is used to incinerate hazardous substances. Our vision for the future is to promote the project W2E establishment of incinerators in our town and surrounding villages.

What will be your next step in this field? Our next step will be to establish a waste incineration plant spread.

What is the lesson learned by participating in W2E project? In the project W2E we have to see by partner countries different ways to use another method of waste for energy purposes.

What was the added value in participating in W2E project? Participation in the project W2E is for us benefit in terms of of the new opportunities and experiences of partner countries in the field of waste management.

What could be the message to transmit to EU institution? The message for the EU institutions would be if the waste as a potential source of energy to get people more aware. This is achieved by the people will provide sufficient information about waste as a potential energy source.

How W2E project could sustain the cause of EU vision 20 20 20? The vision 20 20 20 can be applied, only if people have the enough information and are prepared to maintain them!

WASTE to ENERGY

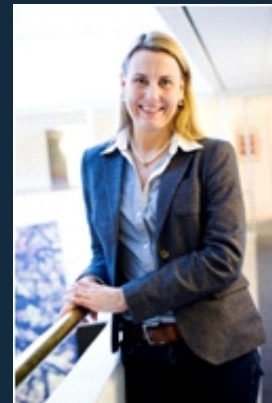
«PRESENT AND FUTURE VISION OF EUROPEAN SUSTAINABLE DEVELOPMENT»

How is the current management of waste in your region and which are the main aspects of the policy about them? The idea of using waste as a resource is a well-established practice on all levels of waste management in the county of Östergötland. Since the introduction of the landfill ban for organic waste the amount of household waste that goes into landfill have shrunk to about 1 percent. Recycling and energy recovery are the two dominant methods for waste handling, 98 percent of the waste is handled in this way. The dominant method for energy recovery is incineration for energy and heat production as well as production of steam which is needed for industrial processes. The biogas production from waste on the other hand is the most rapidly increasing method of them all in recent years. The two biggest municipalities in Östergötland are using up to 60 % of their food waste for biogas production and the goals are to use even more of the food waste for biogas production.

How did the project help the partner in having a new vision about waste and its potential resource, energy? In Östergötland we believe in international cooperation for solving environmental issues and having the opportunity to be part of this project has been part of that strategy, much has been realized in Östergötland when it comes to using waste as a resource so the natural step has been to spread that accumulated knowledge further to other regions across the EU.

What was the impact on the public opinion about the use of waste as energy in general, and in particular about the objectives of W2E project? Using waste as a resource for energy production has a long history in this county, working in the best interest of the general public with information and involvement as well as always trying to use and apply the latest technology and scientific research have been a very successful strategy. In this way it has been possible to build a good and giving relationship between the governing bodies and the general public. The public opinion is strong for green solutions and the opinion about using waste as a resource is that the solution is more environmentally friendly than putting waste on landfills so diverting even more waste from landfills to energy recovery has been positively received by the general public.

What is the sensitivity of the people in this field (public opinion)? The latest scientific research and findings as well as the latest technology have to be applied as soon as they are available in order to continue having good relationship with the people. When for example the scientific researchers discovered the very hazardous impact that dioxins have on the health of people this was immediately taken very seriously and work on improving filters and measurement equipment for dioxins at incineration plants began right away. What is in the best interest of the people must always be in the first place.



Interview with
Madeleine Söderstedt Sjöberg Director of the
 department for
 regional development
 County administrative
 board of Östergötland
 – Sweden



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What is the hope for the future in the field of waste and in the field of using renewable energy with respect to the present situation in your region? The hope for the future is that we continue to develop further our waste management systems that we increase the use of renewable energy, minimize the impact that the different waste treatment solutions have on the environment and ultimately decouple waste generation from economic growth.

What will be your next step in this field? The most immediate next steps in this field is to begin working with SME:s. We believe that small and medium sized enterprises have great potential for energy recovery and energy production from waste. So far has this potential not been fully realized, we believe that we have to improve our policies and tools so that we can make it more probable that SME:s will incorporate renewable energy production within their core business areas.

What is the lesson learned by participating in the W2E project? Even though we have come a long way with our waste management there is always new things to be learned. The different study visits organized by the project have been very giving. One of the main lessons learned at the study is that cooperation between countries sharing technology, knowledge and experiences are absolutely necessary when working with environmental issues.

What was the added value in participating in W2E project? Understanding the problem issues of others as well as their solutions is of immense importance for solving your own problems. People often find it convenient to claim that solutions to problems are not interchangeable between different regions in different countries in the EU but I believe that if our intentions are the same then we can always learn something from each other and that is ultimately the added value of participating in this project.

What could be the message to transmit convey to EU institutions? Using waste as a resource for energy production will always play a part in our quest for finding alternatives to fossil fuels and it is very cost effective and rational way of using resources, therefore we must strive to make this possible in more regions in the EU.

How W2E project could sustain the cause of EU vision 20 20 20? The W2E objectives are clearly in line with the Europe 20 20 20 strategy and the project has been very helpful in uncovering the obstacles the lie ahead of us on the way of realizing the vision. This has been one of the first steps in this direction. This will have to be followed by other necessary steps, such as putting in place the laws and regulations in each EU country that will drive the development further and also the cooperation between EU countries and regions will have to continue and be even stronger in order to be able to realize the EU 20 20 20 vision.



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«PRESENT AND FUTURE VISION OF EUROPEAN SUSTAINABLE DEVELOPMENT»

How is the current management of waste in your region and which are the main aspects of the policy about them? The regional law on waste management deals with integrated management of municipal waste.

The key objectives are: ensure the highest standards of environmental protection and health pursue cost containment cycle management of waste, promote interventions aimed at the realization of an integrated system, promote the recovery of recyclable materials from the waste, and ensure the progressive reduction of landfill disposal as ordinary system. The municipal waste management is integrated and includes: municipal waste, special waste similar to urban public, wastes from urban wastewater treatment, non-hazardous waste produced by activities of recovery and disposal of MSW. The integrated solid waste management is organized on a territorial basis but coordination is demanded to Abruzzo Region. Based on the evaluation of the dynamics of change in the production of waste, recorded over the years, forecasts have been developed of production trends in relation to influencing factors: characterization of the socio-economic context and its possible evolution and, implementation of measures aimed at the prevention and reduction.

How the project helped the partner in having a new vision about waste and its potential resource, energy?

The main objectives of Abruzzo Region started from the idea of understanding how manage waste for having an energy valorization; instead of dispose them in landfills. Abruzzo Region has the 36% of protected territory, with 3 national parks and 38 protected areas, which make Abruzzo at the first places in Italy and in Europe for protected areas. In 2010 also a marine protected area has been established, the only one in the region of about 37 sqkm. All this means that a wide attention is paid from all people for preserving environment. Through the participation at the study visits, it has been possible to see how some partners manage valorization plans, which are i.e. referring parameters for the pollution and the impact on the territory. Now in Abruzzo there are three working landfills but the objectives, also according to the EU Directives, is to replace them with a more sustainable methodology.

What was the impact on the public opinion about the use waste as energy in general, and in particular about the objectives of W2E project? The impact on the public is of "high level of attention". In Abruzzo Region, as well as in other Regions, incineration plants and waste treatment facilities in general are not seen as "healthy and safety". In particular in Abruzzo there are many active environmental associations that are very disagree with incineration plants due to the pollution it could create, destroying the natural environment for protected flora and fauna. Thanks to W2E project, Abruzzo Region had the possibility to organize four interregional events (one in each province of the Region) where researchers at national level professionalism scientifically illustrated the functioning and operation of W2E plants (but not only). In addition, key actors from Sweden and UK, as privileged witnesses, brought their experience with energy recovery from waste. In any case, many and stronger awareness campaigns are needed for changing the perception of energy recovery from waste and for informing public.



**Interview with
Antonio Sorgi, Director
of ARAEN Abruzzo
Region – Italy**



WASTE to ENERGY

What is the sensitivity of the people in this field (public opinion)? Graphics and data variously interpreted, together with negative prejudice are the main obstacles. Public opinion disagrees with incineration plants and incinerating, in general. During the interregional events, few people participated. This means that the topic is still far from a wide comprehension of people. In addition, this is a result and measures the impact on the public sensitivity about the theme.

What is the hope for the future in the field of waste and in the field of using renewable energy with respect to the present situation in your region? About the energetic valorization of urban waste, the incineration of RDF (Refuse Derived Fuel) is admitted in plants not dedicated to replace fossil fuels and is aimed at improving the environmental performance of the plant concerned. The Regional Council shall issue appropriate directives to define the operational and effective checks on the interested subject. The incineration facilities dedicated to the towns included among municipal waste, the treated ones, sewage sludge and non-hazardous waste derived from processing activities of urban waste is eligible for the achievement of the regional average of 40% of sorted collection. The potential for thermal treatment of MSW incineration plants dedicated, cannot exceed 25% of total flows involved (approximately 170,000 t/a).

What will be your next step in this field? The next step will be referred to criteria and the procedures for revising and updating the regional planning through the correct disposal of waste, by promoting the regional self sufficiency for disposal and/or recovery of urban solid waste and similar through an "integrated and network" of plants. Moreover, by establishing conditions and technical criteria on which plants for waste management, excluded landfills, can be localized in productive sites. Promote also for hazardous and special waste the realization of an adequate network of plants favouring the proximity of disposal, persecute the progressive reduction of landfills as ordinary disposal system and, at the end, identify innovative and optimal solutions for the management of particular wastes and of "priority flaws".

What is the lesson learned by participating in W2E project?

The lesson learned was referred on:

- how an incineration plant can be well integrated in a city centre as, in Linköping, was showed
- how it is well developed, deep and internalized the mission of all of recycling and recovery, this without additional costs for citizens
- how to be independent in producing energy

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What was the added value in participating in W2E project? The benefit is given by the possibility to see how the daily use of sustainable approaches brings advantages or disutility. The most important thing was the possibility to share information having a complete view of a technical "unused technology", and how capitalize the best practice seen in the proper area according to the environmental and legislative framework, without forgetting the general impact on the people and territory itself.

What could be the message to transmit to EU institution? The message to transmit to the EU institution is to give more emphasis to renewable energies also in the next programming period because is never enough the attention on these themes, and the role that them will play in the next coming future.

How W2E project could sustain the cause of EU vision 20 20 20? Abruzzo Region is engaged in realizing a modern environmental policy strictly connected with the territory, recognizing as main objective the preservation, the protection and the safeguard of the environment for the present and next generations. On May 10th, 2010 Abruzzo Region signed in Bruxelles the participation in the Covenant of Mayors, as supporting body. All 305 municipalities in the Abruzzo Region have joined the Covenant of Mayors and the four Provincial Administrations too, together with the Regional body have confirmed their support action. For this shared energy policy, "Covenant of Mayors" in Abruzzo Region is visible at European level and has been defined, by the European Commission, as good practice to disseminate and replicate. European Commission realized some videos for showing some good practices in the application of Covenant of Mayors, Abruzzo Region is among them. The link of the video is available on <http://www.youtube.com/user/eumayors>.



WASTE to ENERGY

«PRESENT AND FUTURE VISION OF EUROPEAN SUSTAINABLE DEVELOPMENT»



Dan Nifescu, Former W2E Project Manager and former ISPA Waste Management System in Dambovită County, former chief-architect of the Dambovită County

How is the current management of waste in your region and which are the main aspects of the policy about them? Based on a European financed project (within the Structural Instruments for Pre-Accession), Dambovită County Council successfully implemented an integrated system of waste collection, transportation, treatment and disposal at county level. Thus, the Dambovită County became the first administrative region in Romania that accomplished such a goal.

The main features of the system are based on the following elements:

- the logistics of the system was provided (trucks, tractors, construction of pre-collection points, waste containers, bins, etc.) to develop the selective waste collection from the people who produce waste – both the people who live in the rural areas, and the people who live in the urban areas, for all types of housing (individual households or block-of-flats), as well as public institutions. All these assets were leased to a qualified operator, which was selected following an international tender; the payment of services is being made on a habitat fee base, which was established and is paid by all the beneficiaries of the service;
- 2 ecological landfills were built. They have been equipped by observing the European standards. The landfills are located in strategic points of the Dambovită County, so that no transfer stations are needed. The Waste Management Centre near the capital of the county is additionally equipped with a sorting plant and a composting plant. The operation of the landfills is done by a specialized operator;
- all the urban and rural old uncontrolled landfills / dumpsites were closed;
- from institutional point of view, a county sanitation department has been established, and it provides the monitoring of both the operation services, payments and royalty collection.
- modern equipment for streets and public spaces sanitation has been purchased and it has been assigned to the local public administrations of the cities and towns in the Dambovită County.

WASTE to ENERGY

How the project helped the partner in having a new vision about waste and its potential resource, energy?

The main positive element of support acquired from the W2Energy Project is to provide the local authorities a fundamental document on the evaluation of the opportunities to produce additional electricity in a decentralized approach, based on projects of energy recovery from municipal and industrial waste, through effective procedures, which are applicable to the Dambovită County, and also by observing the sustainability principles. The study is the starting point – both the reference for the further development of the energy recovery from waste and the basis for setting up short and medium term objectives through local policies, within an Action Plan in the field. Given this primary objective, the following approach was developed with a view to structuring the study: presentation of the legal framework on energy recovery from waste, assessment of the energy potential of the wastes produced in the residential and industrial areas, identifying the priority areas in the residential and industrial areas, selecting the appropriate technologies for the priority areas, Develop an Action Plan to achieve targets in the field of energy recovery from waste. The study on energy recovery from waste is correlated and is complementary to other national or county documents: the National Waste Management Plan, the Regional Waste Management Plan, the County Waste Management Plan (2008), the Strategy for Sustainable Development of Dâmbovița County and the National Action Plan for Renewable Energy.

What was the impact on the public opinion about the use waste as energy in general, and in particular about the objectives of W2E project?

The information materials produced within the W2E Project and the ISPA Waste Management Project were disseminated particularly to young people, who easier adapt themselves to new situations. To date, in Romania, efficient energy production facilities from municipal waste did not work. The National Waste Management Plan makes provisions that the municipal waste incineration in Romania will become feasible economically and socially only after year 2016, following the increased calorific values and reduced values of moisture and organic matter in wastes. However, projects have recently come to light and they are currently in the study phase. Our action plan, as it will be known and assimilated, can contribute to their multiplication and implementation.

What is the sensitivity of the people in this field (public opinion)?

The fear of change, particularly in relation to waste incineration is the sensitive aspect, which can be an obstacle to the achievement of one of the components of the Action Plan. With the dissemination of all information and especially of the good practices and positive results related to the use of waste in energy production, we trust there will be a positive development of the current state of affairs.

What is the hope for the future in the field of waste and in the field of using renewable energy with respect to the present situation in your region?

The Action Plan provides more technological paths, depending on their performance, and defined, in each case, by the local conditions related to the resource obtaining and in accordance with the local energy needs. In the Dambovită County, there are two main options: incineration of municipal solid waste and production of electricity and/or heat and production of biogas from solid and/or liquid wastes and then production of electricity and/or heat.



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What will be your next step in this field? The next step will aim at the integration of the Action Plan, developed within the W2Energy Project, in the Dambovită County Waste Management Plan and at achieving pre-feasibility studies, concerning specific objective, that provide an insight into the economic and opportunity aspects of the proposed measures.

What is the lesson learned by participating in W2E project? The essential element acquired from our participation in the W2Energy Project is mainly related to the direct contact and knowing of the good practice examples from the countries of the Project partners, the dissemination of the information gathered, and the exchange of views and ideas that was made within the direct meetings. A second important element is the understanding of the legislative frameworks in the partner countries and the possibility of harmonizing our legislation with them. And, last but not least, we have experienced work in an international team and we have won new friends.

What was the added value in participating in W2E project? We believe that the main asset gained from our participation in the W2Energy Project is the achievement of the study on the energy potential of waste in the Dambovită County and the related Action Plan, and that we now have information dissemination means, based on which we shall lobby to the authorities in order to continue the next phases that we have planned.

What could be the message to transmit to EU institution? We believe that the W2E Project was successful. It would be good to continue the implementation of the measures included in the proposed Action Plan and, to this end, to obtain the necessary financial support.

How W2E project could sustain the cause of EU vision 20 20 20? The new EU policies on energy and environment, agreed by the European Council in March 2007, that established the initiative "20-20-20" as the perspective to achieve the basic objectives of sustainability, competitiveness and security of energy supply, fits into the objectives of the Action Plan that was developed within the W2E Project, which are complementary measures to achieve the three main objectives of the new energy policy, namely sustainability, competitiveness and especially energy security. Out of the provisions of the above-mentioned document, which can be also found in our Project, we can mention: a better use of local energy resources; development of renewable energies (wind, solar, hydro, biomass and energy from waste), which must be regarded as high potential energy sources; promotion of cogeneration, which is an important priority; a review of the building energy performance criteria in order to extend its scope, simplify the implementation and transformation of energy performance certificates of buildings into a real instrument of urban policies; development of mechanisms for benchmarking and creating the framework for the dissemination of best practices.



WASTE to ENERGY

How does management of waste currently operate in your region and which are the main aspects of your waste management policy? The essential feature is partnership working. The County Council has the statutory role as the waste disposal authority and works closely with the six constituent district councils who are the waste collection authorities. The policy is based on having households separating the recyclable components of their waste for kerb-side collection and providing a network of household waste recycling centres where the public can take other items. The county council has entered into a long-term contract for two Mechanical and Biological Treatment plants which will increase the recycling/re-use rate and produce a solid recovered fuel. One of these plants is operational and the other will be early in 2013. No household waste will then be sent directly to landfill. A limited amount of commercial and industrial waste is collected and disposed of by the local authorities. The majority of it is managed by the private sector. The Council's policies for all waste streams are set out in the Cumbria minerals and Waste Development Framework which is the statutory spatial planning policy document.

How has the project helped the partner in having a new vision about waste and its potential resource, energy? The project started at the time when the county council was in the later stages of concluding its long-term waste management contract. It has been particularly useful in showing how EU countries fit waste to energy into a wider sustainable waste management strategy and in identifying the wide range of options and initiatives that have been taken up. It has focussed attention on how to secure best use of this low carbon resource in the interests of the people of Cumbria.

What was the impact on public opinion about the use waste as energy in general, and in particular about the objectives of W2E project? In this country, whilst some other technologies are supported, there is unfortunately still prejudice against waste to energy where it involves incineration. As a sample of general public views in Cumbria, we involved children at Cockermouth School in the w2e project as part of the study visit to their Eco Centre and which became an example of good practice. The Children took part in an interactive seminar about waste to energy alongside the EU partner delegates and heard about the waste hierarchy and the w2e project. They were very proactive about actions they take at home and in the school and were keen to hear about the w2e project so they could learn more.

What is the level of awareness of the general public in this field (public opinion)? Cumbria's experience in producing our wider waste management strategy, as part of the Cumbria Minerals and Waste Development Framework, is that attitudes are beginning to change as examples of 21st century technologies and environmental standards are able to be demonstrated.

What is the hope for the future in the field of waste and in the field of using renewable energy with respect to the present situation in your region? With the economic situation, efforts need to be concentrated even more on reducing the amount of waste that arises in order to reduce the costs of waste management. There is considerable scope for taking best advantage of waste as a fuel in order to reduce Cumbria's carbon footprint and to provide a buffer for important local industries against increasing energy costs.

Interview with
**Tim Knowles, Cumbria
 County Council
 Cabinet Portfolio-
 holder, Transport and
 Environment**



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What will be your next step in this field? We will be looking with our contract partners at the potential for using the solid recovered fuel from our MBT plants in the best interests of the people of Cumbria. We are in the early stages of producing significant quantities of this fuel. Initiatives could involve working towards an energy policy for the county council's own estate.

What are the lessons learned by participating in the W2E project? The main lesson is that there is no "one size fits all solution". The characteristics and circumstances of each partner region determine what is best for it but we have learned significantly from the project. Another point that several public and private sector organisations have made is the need for confidence that essential factors such as finance and regulation will remain stable over the long-term period that is often involved for investment in waste management facilities.

What was the added value in participating in W2E project? We have a much clearer idea of what is possible. We have developed skills and knowledge of staff involved and have been able to benchmark waste and waste to energy policy amongst the regions taking part and make improvements to sub-regional policy as a result. It has been interesting to see how each EU country has implemented EU regulation so it has enabled us to have greater awareness and understanding of this EU context. It has enabled Cumbria to showcase what it is good at through the good practice case studies and by hosting study visits to meet our partners. We have gained insight about public engagement and perception. We have also learned about governance and cultural factors as well as the more tangible planning and technical issues. We have also been able to influence Cumbria's Economic Strategy and reinforce the economic development role of energy from waste.

What could be the message to transmit to EU institutions? The INTERREG4C project has made it possible to transfer knowledge and make improvements to waste policy in all participating partner regions. Cumbria looks forward to the future EU Co-operation programmes as a means to unlock innovation and improve efficiency and effectiveness. We are keen to consider engaging in future schemes and bilateral relationships of this nature. We would like to stress our thanks to our EU partners in the project and our willingness to keep in contact with them over progress with the Action Plans. In terms of waste specifically, a continuing and common issue is the legal definition of waste and when it ceases to become waste through treatment processes. This is particularly important when current rules severely limit the use that can be made of fuels that have been derived from waste.

How does the W2E project help deliver the EU 2020 Strategy? http://ec.europa.eu/europe2020/index_en.htm

Using fuels derived from waste does not add to the carbon inventory as it reduces the addition of carbon from long-term storage in the form of fossil fuels. This links to the EU2020 Strategy in terms of smart growth, sustainable growth and inclusive growth. Our sub-regional conference explained how what we are doing links to the EU 2020 strategy and fits with the drive to be "innovative" and "resource efficient" along the lines of the strategy flagship projects.



WASTE to ENERGY

Movie

In order to create greater awareness about waste, a movie has been produced.

In addition to familiar methods such as the final conference, the project has produced a **magazine** and a **movie** for ensuring eye-catching and effective dissemination.

These have also been supported by regional-level events for achieving project's findings and policy makers, in favour of optimizing the use of EU-wide dissemination opportunities, such as the yearly Sustainable Energy Days and Open Days.

The W2E movie "Don't waste your waste" is an inspiring movie about sustainable waste management. It shows useful tips about managing waste according to the waste hierarchy principle.

The movie is available on:

- the website of the project www.waste-2-energy.eu
- youtube channel: <http://www.youtube.com/watch?v=Ptp6JGAF3o0>
- youtube channel with Hungarian subtitles

<http://www.youtube.com/watch?v=eK87vTt80Ds>





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WASTE to ENERGY

Closing words by the project manager

The Waste to Energy project tackled environmental sustainability issues with a clear focus: waste and renewable energy.

It addressed key themes in the European Environmental Action Plan, particularly waste management and renewable energy with considerable impact on reducing emissions of greenhouse gases.

The project supported regions in the process of developing more sustainable waste management strategies in combination with long-term sustainable strategies for economic growth and regional competitiveness, by focusing on the growing environmental technologies sector and improving waste management with increased recycling and reuse.

During the course of the project, at study visits and seminars, we have seen solid proofs that if waste is treated as a resource instead of as a problem, modern waste management when applying environmentally safe techniques can be turned into a sustainable growth-friendly business that contributes to counteract climate change.

We have also identified a number of obstacles that lie ahead and have to be solved by the regions in order to achieve a sustainable waste management with all its benefits. Different countries and different regions have varying problems, for some the problem of funding may be the biggest, for others the process of paradigm shifting and of course there is also the challenge to influence the public opinion. This leads us naturally to thinking about tools and preconditions for resolving these problems.

Strengthening democratic processes, involving the people in the decision makings in a more straightforward and direct way and education and informing are key elements for influencing public opinion. Working with children, incorporating sustainability issues in the educational system is another important element.

Often it claimed that there is a lack of resources for making the initial investments that are needed for building sustainable waste management systems and here the tools proposed for resolving this issue is to work broader, making alliances between the public sector the universities and research centers and the private sector, using public procurement for the purpose of finding solutions that have less negative impact on the environment. Everybody must be onboard in order to make this journey.





WASTE to ENERGY

