



PraTLA – Contributions of students of four European countries to boost energy efficiency in communities



Impressions

"A long waiting period for the missing data"

Student, Municipality Oleśnica (Lower Silesia)

"In my experience, it proved quite difficult to obtain a work placement abroad and especially difficult to get used to the local enterprise culture and customs. The more important aspect is local support."

Steffi Hänig, student from University of Applied Sciences Zittau/Görlitz (Saxony) and intern Energy Agency for Southeast Sweden (Småland)

"I believe that more than anything, my four-month work term has provided me with a much greater perspective on the overall workings of regional/local actors in the area of energy."

Josh Spencer, student McGill University in Montreal (Canada) and intern Energy Agency for Southeast Sweden

"Due to the lack of an expert in the Office, all specialist work is outsourced. Such commissioning procedures absorb large sums of money."

Student, municipality Oleśnica (Lower Silesia)

"This study has given us a new perspective on the municipal environment. It will establish working methods to save energy savings ..."

Mayor of Passy (Haute-Savoie)

"I became familiar with projects implemented in the community and with work carried out on an ongoing basis." Student (Lower Silesia)

"Hosting students in the office is time consuming, but it pays back immediately by stimulating discussions, new contacts and new visions. It develops both the professional and the student."

Roger Gunnarsson, project manager Energy Agency for South east Sweden (Småland)

"It is with great interest that the city of Evian has participated in the EnercitEE project ... Intervention of students of the Institute of Training, in particular their fresh look at our energy policy, have been welcome. Due to a methodical evaluation, they were able to provide key reflections to improve it ..."

Member of Parliament & Mayor of Evian (Haute-Savoie)

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Picture 2: PraTLA-project meeting in Haute-Savoie; Christian Borchard

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Picture 1: Project in a Swedish kindergarten, carried out by Armin Verch and Steffi Hänig; Steffi Hänig

Picture 2: PraTLA project partner; Dieter Kallenberg

Background: The EU-project EnercitEE

EnercitEE

European networks, experience and recommendations helping cities and citizens to become Energy Efficient

The EU Climate and Energy Package is considered the political framework for improved energy efficiency and reduced CO₂ emissions in Europe: The three overall objectives have become generally known as the EU's 20-20-20-targets: a 20% cut in emission of greenhouse gases by 2020, compared with 1990 levels; a 20% increase in the share of renewables and a 20% increase in energy efficiency.

EnercitEE seeks to implement the EU targets on energy efficiency practically. The project builds upon experiences and existing networks from the forerunner project energy' regio.

EnercitEE is an EU project with six partners from five European regions. It is carried out under the EU programme INTERREG IVC and funded as a mini programme.

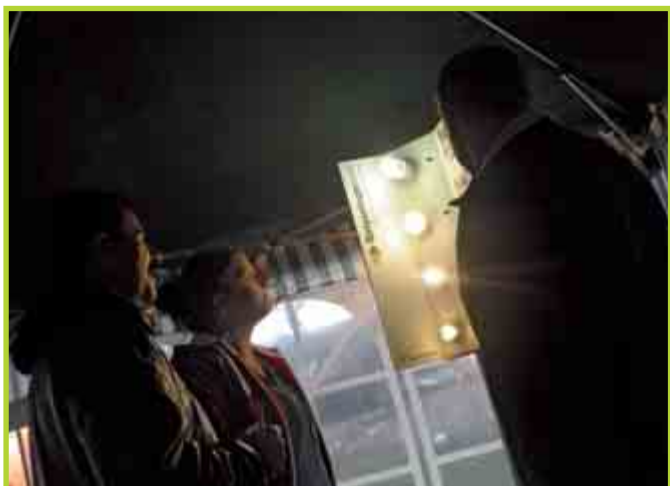
EnercitEE will contribute to the improvement of local and regional policies and provide assistance in the transfer of knowledge on energy efficiency and sustainable transport.

EnercitEE will identify and analyse good practices, foster the exchange of experience and carry out pilot implementations. The tools and political recommendations developed in the project will provide valuable assistance for European regions aiming to improve their energy performance and policies, as well as to protect the climate.

The exchange of experience will be an essential part of the project: The partners will compile policies instruments, good practices, case studies, publish brochures and organise training sessions, field trips to disseminate the know-how to other European regions.

EnercitEE consists of eleven sub-projects such as PraTLA. The sub-projects will contribute to improve local and regional policies in boosting energy efficiency on an individual and community level by exchanging experience and activities on a regional and international level. The international partners in the Sub-projects prepare joint solutions and look out for good practices in various areas of energy efficiency.

Source: EnercitEE: Good Practice Guide Energy Efficiency Excellence from EnercitEE regions; 2011
EnercitEE: 2. regional flyer from Saxony; 2011



1. Introduction

Energy transition in Europe is not only of concern for a small number of activists – it is a challenge we all are faced with. New and better solutions are required to substitute nuclear energy, mainly with sustainable energy sources. Apart from energy-efficient power generation and distribution, new ways of thinking and acting are necessary, concerning energy consumers in private as well as in industry and in the public.

In the future energy needs not only to be regenerated, but also distributed with as little loss as possible and used in every-day devices at home and in cars in an efficient and energy-saving way. We will not reinvent the wheel: there are energy-efficient technologies for vehicles, machines and in buildings, which are, however, not sufficiently well known or not effectively promoted to be considered in planning and investing.

The rapid development in this area offers a new range of subjects and applications for young scientists and students. As energy efficiency and sustainable energy sources are involved in several fields of application, new concepts have to be developed, which integrate a broad variety of subjects. Many universities have been adapting their curricula. The project PraTLA (Practical Training in Local Authorities) provides students best opportunities for their career: communities wishing to probe and develop programs for energy efficiency can meet students providing the theoretical knowledge. Students support communities in developing solutions and get to know decision-making structures in local administration during their work placement.

This cooperation is a classic win-win situation: students understand local structures and communities profit



from students' knowledge and know how. This approach has been introduced with success in Saxony and partner regions in Lower Silesia (Poland), Haute-Savoie (France) and Småland (Kalmar and Kronoberg)/ Blekinge (Sweden).

The following students' reports give an impression of their commitment and experience gathered during work placements. Hope remains that this type of transferring know how between students and communities will gain general recognition to promote energy transition and international cooperation in future.



2. PraTLA: Practical Trainings in Local Authorities

Improving local energy policy– practical training in local authorities

Project period: November 2010 - Oktober 2012

Project coordination: Hochschule Zittau/Görlitz

PraTLA seeks to improve local energy policies in cities, towns and villages by exchanging experience across regions between universities and education facilities and by work placements of students in the field of economics and energy in local authorities. The work placements are to provide students with an understanding of structures and decision-making processes in local authorities as well as communities with support in preparing, developing and implementing programs and measures to protect the environment and use energy efficiently.

The theoretical background of students can be used to analyse and evaluate user data, to prepare and carry out (economic) feasibility studies such as selecting appropriate local sources of renewable energy, calculating cost-benefit ratios when increasing efficiency, among others.

Zittau/Görlitz University of Applied Sciences acts as lead partner and contacts for the overall subproject. The consultants of B.&S.U. mbH support the project in preparing EnercitEE findings of all participants and ensure the implementation.

Partners for work placements

PraTLA consists of one University in Saxony (Germany), one regional energy agency from Småland (Sweden), one urban, architectural and environmental association from Haute-Savoie (France) and one regional economic development agency from Lower Silesia (Poland). Each partner has close links to local authorities and to education institutes/universities. Energy efficiency has been a topic in curricula, training programmes, local energy assessment or regional economic life cycle analyses. In this situation the partners are capable of addressing both local authorities and students/lecturers as stakeholders and to match each other by moderating and preparing a practical training process.



1 Saxony (Germany) Zittau/Görlitz University of Applied Sciences

In Saxony, PraTLA helped to implement Saxony's 'Action Plan on Climate and Energy', especially in the sectors 'cities and counties', 'Role model of a public authority' and 'energy efficiency'. As Zittau/Görlitz University of Applied Sciences has had long experience in engineering, students were mainly involved in improving technical efficiency in communities such as preparing a design to improve heating systems or determining efficiency potentials for public buildings in need of repair.

2 Småland (Kalmar and Kronoberg)/Blekinge (Sweden)
Energy Agency for Southeast Sweden

In Småland (Kalmar and Kronoberg)/ Blekinge, PraTLA strongly supported various action strategies set up by the counties of Kalmar, Kronoberg and Blekinge that have similar positions. „Kronoberg county’s 2005“ action strategy for more efficient use of energy for buildings and transport” serves as a model and has to be further developed. The Energy Agency for Southeast Sweden has broad experience in energy efficiency campaigns, training of professional staff on all level and in energy audits and is responsible for the network of local climate and energy advisers in the region. In addition, the Energy Agency for Southeast Sweden runs the local climate and energy advice service on local levels in some municipalities.

3 Lower Silesia (Poland)
Karkonoska Agency for Regional Development

Karkonoska Agency for Regional Development has successfully carried out numerous seminars, conferences and initiatives of regional, cross-border and international range. This will fill the gap in documenting the strategy for local authorities’ energy policy and will respond to contemporary challenges of energy- and climate-oriented issues on a regional scale. The results are changed attitudes towards activities planned by regional and local authorities, improved energy policies in the region and sustainable development in Lower Silesia.

4 Haute-Savoie (France)
Council for Architecture, Urbanism and Environment

The Council for Architecture, Urbanism and Environment provides a meeting and communication platform between elected representatives, administrations, project owners and professionals. It also coaches teachers within their educational project. This project will allow the Council for Architecture, Urbanism and Environment to develop and strengthen its mission to establish energy efficiency as part of local policies and to support communities and professionals with trainings. All in all, the project will be an essential step to implement Haute-Savoie’s energy and climate plan.



3. Challenges and findings in four regions

Within the project, approximately 70 students in 4 countries had the chance to acquire practical knowledge alongside their studies. With the partnership of four European partners, it was possible to generate an interregional transfer of knowledge, for example between Saxony and Småland. Two students from Zittau/Görlitz University of Applied Sciences, one student from another Saxon University, as well as a Canadian student had the opportunity to do their practical training at the Energy Agency for Southeast Sweden. They gained insights into the wide range of services offered by Sweden's largest energy agency, studied selected local strategies to improve energy efficiency and Swedish methods of CO₂ balancing and compared incentive systems for renewable energies used in Germany and Sweden.

During the entire project, results of student projects were presented and discussed on various levels so that the regions involved obtained knowledge on energy efficiency. All student projects were presented at a regional project meeting in Lower Silesia as well as on an interregional project meeting so that results were

exchanged on both the regional and international level. In addition, experience on didactic approaches in educational and training institutes, on specific needs of local authorities in energy efficiency matters, as well as on the practical implementation and impact of training in four European regions were exchanged in the interregional meetings.

The communities and local administrations participating were very interested in the project and students were in high demand to support the implementation of plans to improve energy efficiency. That is the reason why we may conclude that the approach of targeting communities was the best one.

This brochure presents selected study projects from four countries realised during 2010 and 2012. Furthermore, it shows the different initial situations, challenges, approaches and impressions in the countries. The brochure also summarizes the opinions of participating communities, showing that they urgently need support when setting up and implementing energy policies.



3.1 Saxony – University of Applied sciences Zittau/Görlitz

3.1.1 Background and approach

In 1997 Germany committed itself to reducing greenhouse gases by signing the Kyoto Protocol. As a result, a series of programs to protect the climate and foster renewable energies were initiated and promoted. Energy saving and efficiency has gained in significance in Germany with the transition to renewable resources and their economical application. Zittau/Görlitz University of Applied Sciences has been investigating energy and environment for more than 50 years since the foundation of College for Energy. This college not only focuses on teaching, but also on sustainable research and development and is partner with universities from 38 countries and many national and international industrial partners. Additionally, work placements are an essential and compulsory part of all courses of studies at Zittau/Görlitz University of Applied Sciences.

As early as in the 1980s, Prof. Dr. oec. Joachim Zielbauer and others promoted Zittau as a centre for energy research. Prof. Zielbauer taught energy in engineering studies and has coordinated a large number of national and international projects in energy management and technology, and has been closely involved in PraTLA.



Hochschule
Zittau/Görlitz
UNIVERSITY OF APPLIED SCIENCES

The regional Energieagentur Neiße (Neisse energy agency) introduced the sub-project to local authorities. Many of the administrators were very interested, offered support and gathered initial subjects of interest. More local authorities were attracted by press releases and public presentations.

Business studies, engineering, energy and environmental technology as well as natural sciences have work placements integrated into their schedule of studies. The project was introduced to students and the project head contacted students personally to introduce the project. In general, interest in PraTLA was considerable.

After many talks and an orientation phase, students could choose their subject from a broad range of topics. Some students came up with their own proposals. After signing the contract, students were matched with an appropriate community and supervised over the course of the work placement. Colloquia accompanied the work placements. Each study project was presented to the public, documented and closed. Students received monthly compensation for their work.



3.1.2 Study projects – Results and Impressions

Steffi Hänig:

Course of study and semester:

Business engineering,
specialising in energy management/technology
8th semester

Place of study: Zittau/Görlitz

University of Applied Sciences

Period of work placement: April to September 2011

Local placement authority: Energikontor Sydost AB

different starting points, aiding the process on a local level. During my research, I contacted a variety of specialists from Sweden and Germany so that I focused on these two countries.

”What were your approaches and results?”

I examined three CO₂ balancing methods:

- Energy Agency for Southeast Sweden: developed an Excel-tool on the basis of statistical data for 14 communities in the Kalmar Province
- The town of Växjö: Excel tool based on statistical data to evaluate their own energy efficiency
- Sächsische Energieagentur (Saxon Energy Agency): ”ECORegion“ balancing tool for Saxon communities to prepare their balances on an individual and independent basis.

Focus of my analyses was the methodical function, data collection and data quality. Furthermore, my thesis highlighted the different starting points in Germany and Sweden for data gathering as well as the individual goals for local balances. It was my aim to find out whether the methods used could be compared and transferred to other regions. In the second part of the thesis, the German Renewable Energy Act and the Swedish System of electricity certification were analysed in detail. These three types of CO₂ balancing are completely different due to different methods for evaluation and the data basis used. All methods, however, give valuable insight into important areas such as annual energy consumption broken down into transportation and home use, the proportion of renewable energies and the resulting local CO₂ emissions. In the end, each community has to develop a method which is most appropriate for its aims and capabilities. This method should serve as a tool to develop strategies to improve energy efficiency and to control the implementation.

After finishing my thesis, many Saxon communities were interested in the findings provided. I was asked to send them the thesis so that the different approaches were available to determine CO₂ emissions. This is the reason I was able to reach the goal of the thesis to share knowledge with others.

”Hey Steffi, How was your road to the work placement?”

Even before my studies I wanted to do a work placement abroad, preferably in Scandinavia. After two years of planning and detailed research, my dream came true. In early 2011 Prof. Zielbauer asked about my plans for a work placement and introduced me to PraTLA: ”Why don’t you go to Sweden? Zittau University is cooperating with a Swedish company.“ I was supported by Christian Borchard from the Berlin B.&S.U. mbH consultancy, who talked to the Swedish partner and initiated the placement. With the help of all concerned I was soon accepted as an intern.

”Could you please briefly describe your topic of practical training? Why did you choose this topic?”

The subject of my diploma thesis is ”Methods of CO₂ balancing and incentive systems of renewable energies – comparing selected European countries“.

In Europe, many countries have been working on making their regions and communities more energy efficient. This process is a continuous one, with further regions to join. A first step in developing strategies for effective energy use is to establish a CO₂ balance, a challenge for many communities, mainly in the area of data collection. In this framework, renewable energies provide an essential input to regional and local energy strategies. The aim of my diploma thesis was to support communities in this area, offering them different methods for

”What else did you do during your practical training?

During my six-month work placement I was given remarkable insight in the Swedish way of working and the broad range of services offered by the energy agency. I was able to take part in field trips and meetings, in energy consultations and I carried out an own project in a Swedish kindergarten together with another student. The kindergarten children learnt about energy in experiments, with pictures and the help of kindergarten teachers who interpreted from Swedish into English.

”Finally, is there anything else you want to add?

The PraTLA project not only gave me the chance to let my dream come true, but also to acquire valuable experiences abroad. I could improve my knowledge of the English language and deepened my knowledge of energy considerably.

Any time I could ask co-workers for any kind of help. During my placement I felt part of the company. When

writing my diploma thesis, EnercitEE members provided excellent input.

Thanks to the friendly, helpful and uncomplicated Swedish mentality, I will never forget my stay in Sweden. All my efforts paid off and I reached my personal goal.

Thank you very much Steffi!



www.enercitee.eu/blog/:

”Let’s make a trip to the world of energy – energy day in a Swedish kindergarten”

Yvonne Geldner und Alexander Rewerk:

Course of study and semester:

Business engineering,
specialising in energy management/technology
8th semester

Place of study: Zittau/Görlitz

University of Applied Sciences

Period of work placement:

March to August 2012

Local placement authority:

TRIXI-Park Zittauer Gebirge GmbH

station using the principle of combining heat and power. The operator would like to use the heat not required to be transmitted to the nearby TRIXI indoor pool run by TRIXI-Park Zittauer Gebirge GmbH. We already dealt with this subject in our seventh semester when we participated in a project study across subjects. This study covered the design of long-distance transmission of heat from the biogas plant to the indoor swimming pool. This design is part of a required overall project and forms the basis for further studies.

Prof. Zielbauer, the head of the project study, told us about the PraTLA sub-project. As we liked this idea a lot, we decided to do our work placement in this project during our diploma semester so that we had the chance to complete the remaining studies for TRIXI indoor pool and the overall project.

”Hey Yvonne and Alexander, how was your road to the work placement and how did you find out about PraTLA?

In Saalendorf near the German town of Großschönau a biogas plant was built which operates as a block heating

» *Could you please briefly describe your topic of practical training? What were your approaches and results?*

Our work placement consisted of the following parts necessary to develop a conception for supplying the indoor swimming pool with energy:

Part 1: TRIXI indoor pool Großschönau is at present supplied with energy by a block heating plant which will be substituted by a new one in the near future. By the year 2013 the operator's contract between TRIXI-Park Zittauer Gebirge GmbH and ENSO Energie Sachsen Ost AG will expire. That is the reason why an alternative is examined to operate TRIXI Park in an isolated mode. The existing form of operating or the follow-up contract needs to be compared to the alternative concerning economic parameters. The use of renewable sources of energy will be included into this comparison and the most efficient solution will be implemented for TRIXI indoor pool.

Part 2: The operating district heating system of Wohnbau und Wärmeversorgung Großschönau GmbH (WWG GmbH) is located at a distance of 800 m to the heating station of TRIXI indoor pool. WWG also operates a block heating plant to supply their building with heat and

energy. This study examines whether both organisations can use a connected grid and if such a connected operation has positive impact on an economic and climate scale for the area of supply. Alternatives are examined for the power input by power-heat co-generation with the end user to be included.

Results and findings are expected for October 2012 when the project is finished. One alternative provides for a local energy management between TRIXI-Park Zittauer Gebirge GmbH and WWG. This integration is to substitute existing plants and transport units sometimes incurring energy loss. Tenants of local-authority buildings would also benefit from such integration.

Up-to-date results were presented at a meeting at Wrocław Technical University organised by the project partner in Lower Silesia. Our overall project was presented as well. Our approach met with overwhelming approval of the participating students. In addition, the project was presented at the 22nd Zittau Seminar on energy management in Central and Eastern Europe hosted by the Zittau/Görlitz University of Applied Sciences.

Thank you very much Yvonne and Alexander. All the best for your future career.



3.1.3 Municipality Kodersdorf – Statements and impressions

Gemeindeverwaltung Kodersdorf
Straße der Freundschaft
102923 Kodersdorf
Germany
Telephone: +49 (0) 35825 5252
<http://www.kodersdorf.de/>
info@gemeinde-kodersdorf.de



The community of Kodersdorf is part of the German administrative district of Weißer Schöps/Neiße. Together with Särichen Wiesa and Kodersdorf Bahnhof, the community has 2,559 inhabitants on an area of 4,229.21 ha. Situated ca. 11 km to the south of Niesky, Kodersdorf lies between the scenic Königshain hills and the Upper Lusatian pond region. The community can be directly accessed by A4 German motorway, B 115 federal road and by train, line Görlitz-Berlin.

The community has been considering projects on saving energy over a longer period of time. When renewing street lighting, only energy-efficient lamps have been used. When refurbishing the school site, the building was insulated and geothermal energy is used to heat the rooms. These steps, however, were just considered the starting points and that is the reason why a letter from the district council on 21st June 2011 met with our approval. This letter offered the project „Support in energy questions by students for local authorities, EnercitEE-PraTLA“ in cooperation with Neiße Energy Agency. We had just to make a phone call and were part of the project. It was our aim to have guidelines on energy developed for step-by-step implementation

within the next years. We started with a focus on the existing condition of heating systems in buildings owned by the community as energy costs had been rising and the heating systems was outdated. Anton Zimmermann, a student of Zittau/Görlitz University of Applied Sciences and Frank Scholze, a design engineer from Kodersdorf, developed a concept to increase energy efficiency for heating community-owned buildings.

The current situation was comprehensively described in detail and the recommendations derived were to the point so that the local administration was able to plan and implement the findings of the study. First recommendations, which did not involve a high amount of costs, were even put to practice and have shown first effects.

We would like to thank all parties participating in the project for their cooperation and are highly interested in further cooperation in areas such as small wind mills, solar heat plants, block heating systems, etc.

Mayor Schöne

3.1.4. Summary

Contacting students proved to be easy, while canvassing local project partners was a challenge as previous contacts have mainly been established with companies. Thanks to the well-established cooperation Energieagentur Neißer during the entire course of the project, Zittau/Görlitz University of Applied Science managed to create a network of local community partners and to make the project known on a regional level. PraTLA has helped the university to establish a new network with communities focusing on energy efficiency.

Right from the start, acceptance was quite high among communities. All communities involved were very satisfied and appreciated the results. Students proved to be of great help, as well as a valuable support as most small communities do not have sufficient time, knowledge and funds to manage energy-efficiency projects themselves or to commission engineering service providers to do so. Some of the findings were quite astonishing for all concerned as the potential for savings proved to be enormous. Many local authorities used the project as an impetus to start further projects to improve energy efficiency.

Smaller Saxon communities, who were not in a position to prepare concepts for climate protection or strategies to improve energy efficiency, were supported by students during their work placement. The comprehensive energy concept for the TRIXI Vacation Park in the Zittau Mountains is one example among others.

Our experience shows that a well-planned selection of students and local authorities is as decisive a factor as the mutual setting of goals. Effective communication among all concerned is as important as mentoring the students during the project. The project coordinators observed that direct contact between professor and students brings better results than informing students at larger meetings as professors are better able to fine-tune the matching process between students' know how and the requirements of local administrations. Students need their own place to work and regular working hours

to be best tied into administrative tasks and involved in administrative structures.

PraTLA projects provided students of Zittau/Görlitz University of Applied Sciences with excellent chances to transfer their knowledge into practical use, to gain insight into local administrative structures and to gain experience.

The knowledge generated was not only communicated within the university, but also passed on to partners in other regions. The Saxon study projects were introduced at the Intermediate Conference of the Saxon State Office for Environment, Agriculture and Geology in Dresden; at the PraTLA Regional Conference of the Polish partner organisation and further events. Two students' projects are a prime example for transferring knowledge between Småland and Saxony.

Study projects by Zittau/Görlitz University of Applied Sciences have already made a remarkable contribution to improve energy efficiency on a local level. Many communities have so far not had any experience in working with students as they did not have the chance to do so and typical administrative structures do not provide the room for employing interns.

On request, Zittau/Görlitz University of Applied Sciences will go on supporting the German Free State of Saxony by matching interested students and local authorities. Furthermore the internal exchange and transfer of experience will be intensified to disseminate best-practice approaches from Saxony and to learn from the know-how and experience made in other countries.

More information about student projects from Saxony:
www.energitee.eu/Sub-Projects/PraTLA
Download: PraTLA brochure (German)

3.2 Småland (Kalmar and Kronoberg)/Blekinge – Energy Agency for Southeast Sweden Ltd.

3.2.1 Background and approach

The regional Energy Agency for Southeast Sweden Ltd. was established as a SAVE-project in 1999 under the framework of the Association of Local Authorities and County Council (the predecessor of Regional Council of Southern Småland) to support the development in the region.

The Energy Agency's approximately 30 employees work in all three counties in offices in Oskarshamn, Kalmar, Karlskrona and the headquarters in Växjö. The company is jointly owned by an association where regional councils, counties and municipalities in Blekinge, Kalmar and Kronoberg are members. The Energy Agency's mission is to provide timely, objective and impartial information and knowledge about energy and transport issues. The Energy Agency's objective is to initiate, coordinate and implement projects aimed at improving the energy efficiency and increased supply of renewable energy in all sectors of society. The agency works strategically and systematically to link the projects at the local and regional level with the projects of the European and international market.

The municipalities in Southeast Sweden are all involved in the national program for energy efficiency within their own organisation. This is pushing them to develop and implement policies and action plans for energy efficiency and to reduce the impact of greenhouse gases by establishing a sustainable energy system and a sustainable organisation. In Sweden all municipalities have energy and climate advisers as contacts for citizens. There are also energy and climate strategists in some cases. Many of the municipalities in the region were involved in the national initiative „sustainable municipality”. The municipalities of Kalmar county were included as a pilot county with „no oil” as name of the organisation. All three counties of Kalmar, Kronoberg and Blekinge have climate commissions either up and running or as previous initiatives.

Therefore there are a lot of different energy efficiency projects and initiatives running. Nevertheless – there is still much to do.

There are two universities/colleges in the region: Linnaeus University and Blekinge Institute of Technology. Furthermore there are other education options for adults, for instance Allbo Lärcentrum in Alvesta and TUC Higher Vocational Education in Nässjö. Depending on different levels of studies there are different demands for practical experience for the students. Either will they write their thesis at the end of their studies or they do job shadowing in some cases and some of the students have to do practical training in order to graduate. Students from different levels of study were involved in PraTLA .

The Energy Agency for Southeast Sweden has permanent connections within the municipalities, since they actually own the regional energy agency and are members in many of the networks ran by the agency. The difficult task was to find students, but matchmaking meetings and contacts with the university, to whom the Energy Agency for Southeast Sweden has long-running relations, helped a lot. Mouth-to-mouth methods and informal contacts in ongoing networks were the key to success. In some cases the students found us. If that was a result of the matchmaking is difficult to say.

The trainings were mainly organized in connection with the established network for energy and climate advisers in the municipalities. They operate in the field of energy efficiency and climate protection on a local level and for the Energy Agency for Southeast Sweden they function as a door opener into the heart of the municipalities.



3.2.2 Presentation of selected student projects – Results and impressions

Armin Verch:

Course of study and semester:

Business engineering,
specialising in energy management/technology
6th semester

Place of study:

Zittau/Görlitz
University of Applied Sciences

Period of work placement:

April to August 2011

Local placement authority: Energikontor Sydost AB

new local jobs for qualified workers are created over a longer period of time for improving buildings, adapting infrastructure and renewing city centres.

Both large and small communities can exert considerable influence on energy consumption within the local organisation and even beyond. People and enterprises can be influenced by strategic planning and consistent implementation. Small communities can use strategies such as political commitment, a broad base of cooperation and well-organised financial aid to seize opportunities to plan and implement measures to improve energy efficiency.

High potentials for efficiencies can be tapped by changed behaviour and organisational structures, so only little investment is required for such measures. High investments, however, are needed for technical changes to improve efficiency such as the application of more efficient devices or control mechanisms, whose payback period can be calculated with the help of „Life-Cycle-Calculations (LCC)“.

What else did you do during your practical training?

The project provided me with the chance to see the topic of energy efficiency from a different perspective. I got to know every-day working life in an energy agency, took part in field trips, kick-off meetings, meetings with partners and consultations so I acquired insight in the organisation, structure and financing of public energy agencies, their advantages and disadvantages in comparison with private structures found in the German network of energy agencies. A pro is that enterprises as well as citizens can use the services of energy consultants without any charge so that entrepreneurs no longer feel insecure whether the consultation is worth its money – a qualification often heard from German entrepreneurs. Citizens can use the services to get extensive information on energy. An additional benefit was for me to get to know Swedish nature and the hospitality and incredible mentality of Swedish people over the period of nearly six months.

Thank you very much for taking your time, Armin! All the best for your future career.

Hey Armin, how did you find out about PraTLA?

It was my professor who drew my attention to this type of placement. After I told him about my wish to have a work placement abroad, he offered me to contact the chance to B.&S.U. mbH consultancy and the Swedish partners. After a short period of waiting, I received my acceptance and could start the work placement with „Energikontor Sydost“, the public regional energy agency for South East Sweden.

Could you please briefly describe your topic of practical training? Why did you choose this topic, what were your approaches and results?

During my five-month stay I dealt with strategies of Swedish communities to improve energy efficiency. It was my aim to offer a base for improving energy efficiency to other committed communities, disseminate best-practice cases to inspire local administration and provide ways of orientation.

An analysis of energy and climate strategies of two Swedish communities showed that the public sector can be used as a role model for investing, maintenance and expenditure of energy using devices as well as for other measures to improve energy efficiency. People and/or businesses can learn about these measures with the focus on saving costs by providing information, exchanging experience and best-practice cases. The benefits of energy efficiency go beyond saving energy for communities:

Anders Svensson:

University:

Linneaus University in Växjö

Study course and year: Bachelor of engineering, energy and environment, with a focus on bioenergy, 1st year

Duration of practical training: 10 weeks during spring 2012

it possible to compare the impact of different sizes of wind power plants and see how different sizes will affect how the price of produced kWh decreases when the height and the power of the wind power plant increases.

How can a local or regional authority use your findings?

The report will give the regional or local authority a better understanding and base for future decisions when planning new investments. There will be a better base for evaluation before actually making the investment.

Hej Anders! Some questions regarding your time here at Energy Agency for Southeast Sweden. Tell us something about your study.

I study at the Linneaus University in Växjö in order to graduate as a bachelor of engineering, energy and environment, with a focus on bioenergy. I started to study in June 2012 and the duration of my studies is 6 semester or 3 years.

Could you please briefly describe your topic of practical training? Why did you choose this topic, what were your approaches and results?

The main target was to develop a method to calculate the life cycle costs for wind power, in order to compare two running wind power plants and compare the costs. Together with Martin Sjölander, I was searching on the topic.

We are both very interested in renewable energy and we wanted to do something within that topic. The Energy Agency for Southeast Sweden could give us this challenge and we accepted it.

Well, I live in Värnamo and Martin in Växjö so we did a lot of the work online, by Skype and Google docs. We met in Växjö once a week together with the supervisors and by using these methods we saved a lot of CO₂ by reducing the number of travel. It worked even better than expected.

We are mostly pleased that the method did work and gave reasonable expected results. For instance we could show the costs per produced kWh wind power. This makes

How long did you have time to write your thesis?

Ten weeks full time, since we were two students cooperating, the final work actually included 20 weeks fulltime work.

Finally, is there anything else you want to add?

The support we got from the university was very valuable, we are very grateful to Anna Glarner and Björn Zethraeus. I am also very grateful that the Energy Agency for Southeast Sweden gave us this opportunity.

Thanks a lot Anders! Good luck!



3.2.3 Municipality Älmhult – Statement and impression

Tina Larsen, energy and climate adviser in Älmhult. Two PraTLA trainees gave her new inspirations in her daily work:

The energy and climate adviser Tina Larsen in the municipality of Älmhult, along with students from the Allbo Learning Centre, were asked to conduct an analysis on the transportation of personal care assistants. The Energy Agency for Southeast Sweden matched the students with the municipality under the umbrella of PraTLA.

Tina says: “That particular period was stressful for me. I was not in the mood for having trainees with me at that moment in time. There’s quite a lot to inform and show when one is taking care of an intern and I was asked to take care of TWO trainees. But I thought that I must give these girls a chance to see what reality is because they are going to be our future representatives in the energy and transport sector. So I said – All right! The students proved to be very friendly and interested in the work that goes on in the municipality and in the energy efficiency strategy with regards to transports.”

Älmhult is a municipality in southern Småland, a province itself located in southern Sweden. The municipality, covering 983 square kilometers of forests, lakes and agricultural land, counts 15,400 inhabitants 8,500 of which reside in the main „town“.

The students were deeply engaged in obtaining material for their pre-study of how personal care assistants transported themselves between each location.

“They inspired me? What’s this? It was quite unexpected to me.” Tina says, surprised.

It was difficult and time consuming to find the basic information the students needed and the students proposed a new solution to keeping track of shipments in the administration. In addition, the students did field trips and conducted an electrical cycle day for home care staff. The students gathered their experiences into a report that will form the basis for reducing transport in Älmhult municipality which will be a part of Älmhult’s energy efficiency strategy.

“I think they gave a ‘tired’ energy adviser back her energy, ideas and inspiration to continue her work in the area of transport, which is so complicated.” says Tina Larsen.

“I would urge anyone who has a chance to take on apprentices in the various fields of energy and climate to take the chance. I’m glad I did it!”



3.2.4 Summary

All together 9 student projects have been completed. Among others, the students have been working with different input to support the municipalities or the region in their climate work. Josh Spencer, a student from a Canadian University, for instance provided support for a number of projects within the agency and those of surrounding municipalities. The Energy Agency also hosted a third German student, Jacob Weber, who was involved in renewable energy projects.

The municipalities and regions express gratitude to have had certain minor areas carefully investigated by students. Oskarshamn and Kalmar asked the student to investigate different approaches and methods for climate neutralising for the CO2 emissions that are not eliminated. Borgholm was assisted in researching suitable and effective indicators that can be used to assess the effectiveness and successfulness of sustainable community projects. The collected information will aid the consideration and selection of indicators used in an upcoming international project.

One shining example is the collaboration with Älmhult, where a civil servant at the municipality was hesitating if she really wanted to host and supervise students, but in the end found that she got valuable help from them and inspiration as well as energy to continue the work.

The Energy Agency for Southeast Sweden is very positive of the experiences gained in the project PraTLA. It improved our methods to work closely with the universities and gave us new channels to help students to find practical training connected to the climate work in municipalities. The testimonies from the municipality staff shows that it is a great help for the municipalities when the Energy Agency hosts the student and collects ideas and tasks from the municipalities. That reduces the work load for the municipality staff and at the same time they gain input and ideas from students.

The challenge for the Energy Agency for Southeast Sweden was to match the students in person and

timing with the different options and possibilities, which the municipalities and other local and regional authorities could offer, or needed. The timing for practical training varied in different forms of education so either we actually had students but no tasks at the municipalities or very suitable cases for students – but no available students. Another challenge was also to find cases and tasks which were possible to hand over to students, with well-defined outcomes and also possible solutions for a student with limited time and limited experience. When hosting students with another mother tongue than Swedish the possible tasks are very limited due to the language barrier.

The work load of the staff municipalities is a barrier to tackle. Having students with no skills in the Swedish language limits the results, since everything is written in Swedish. Nevertheless, by using available translation tools online, the foreign students can tackle this barrier surprisingly well. Mostly it is a matter of timing and to start the contacts with the university very early.

For the future we learned to start even earlier with the matchmaking with the university. By being very specific of what kind of tasks the student can expect, it will be easier for the students to decide to do their practical training at Energy Agency for Southeast Sweden or a municipality.

Overall, we are very happy to have been able to host three German students during springtime and summer in Sweden and to give them an introduction to and insights into Sweden. The different contributions delivered by all the students have been very useful for the local authorities and have been integrated in their climate work. For instance, the investigation of transports for taking care of elderly people in Älmhult has been an important contribution to the energy strategy of the community, and of course an inspiration and energy kick for the contact person.

The Polish partner's method to keep track of the students and their work on a regular basis inspired us to ask „our” students to write at least once a month a

one-page report about what they experienced both at the office and in their spare time. Even when we have the students in the office and talk with them on a daily basis, this method allowed us to spot issues and helped us to see ourselves with the students' eyes. Also we could more easily share the experiences between the staff members and make improvements and develop the hosting of the students.

More information about student projects from Småland:

www.energitee.eu/blog/

„PraTLA trainee at Energy Agency of Southeast Sweden provided support for a number of projects”

„Interview with Jakob Weber – PraTLA student at Energy Agency for Southeast Sweden”



3.3 Lower Silesia – Karkonoska Agency for Regional Development

3.3.1 Background and approach

In comparison to other European countries, the public's level of knowledge about energy efficiency is relatively low in Poland. Therefore, there is an urgent need to disseminate knowledge, to exchange experience and to present best practices, especially among local government employees. Very few Polish towns have been implementing their own energy policy. Each year in Poland it is possible to notice an increase in interest in and the awareness of regional and local authorities as to the possibility of utilizing European Funds in the implementation of projects involving the identification of actions aimed at increasing energy efficiency and meeting the energy-related needs of residents.

Karkonoska Agency for Regional Development S.A. (Joint Stock Company) represents one of the major institutions active in supporting the region and its social-economic potential. It implements successful projects financed by the European Union and focuses on education, on counteracting unemployment, promoting entrepreneurship and regional development of regional, cross-border and international range. Karkonoska Agency established reliable partnership with many entities active in local economic life, as well as its effective and creative participation in significant projects. Its facilitate obtaining broad knowledge and experiences from the activities carried out and have also become an important component of regional promotion. Karkonoska Agency did not participate in projects in the field of environmental development and protection, including issues related to power engineering before. PraTLA is the first project based on intensive cooperation with four European partners.

Initially the Karkonoska Agency was searching for an expert in energy efficiency, who has also contacts to possible students. Therefore, they got in touch with an academic teacher from the Wrocław University of Technology. The person had a wide range of experience, and contributed greater confidence in achieving the goal of the main project.



The close cooperation with the student board and research clubs of the university helped the agency to disseminate not only information on the meetings organised but also distribute the prepared information and promotional materials (leaflets and posters). The PraTLA project was also introduced on the university's homepage. With these actions, Karkonoska Agency was searching for students who were interested in doing practical trainings in municipalities. Direct meetings in Wałbrzych and Wrocław enjoyed considerable interest. After an article was published in a regional newspaper, an increased number of phone calls regarding the issue were recorded. The local authorities, in turn, received official written correspondence, in which the view was expressed that both the subject matter and the objective of the project gave sufficient incentive to participate in it. Further contacts were made by telephone and email.

If students are interested in completing a voluntary practical training within their course of studies, the only time to do it is in the 3-month summer break. Therefore, students and experts were available only in summer. That is why it was necessary to select all the participants during the academic year. Due to the intensive cooperation and following talks, the students started their practical training in the selected offices taking into consideration their interests, the interests of the programme and of the institutions included in the project.

During the practical training Karkonoska Agency supported the students regularly by phone calls and emails. Both target groups had to fill in a form where some questions had to be answered. The Agency wanted to know if they had any major problems, about the state of work, impressions of the practical training and others. During the practice weeks, students had an opportunity to confront their theoretical knowledge and skills acquired during their studies with methods applied in real life.

3.3.2 Presentation of selected student projects – Results and impressions

” *Could you please briefly describe what you did in your practical training?*

Radomir Gębal:

University:

Wrocław University of Technology

Study course and year: Renewable Energy Sources, 4th year

Duration of practical training: June to August 2011

In summer break, I decided to do a practical training organised by PraTLA. It took place in the Municipal Office in Kłodzko, in the department of infrastructure; a small town placed in a valley in the Sudetes Mountains, but the largest town of the Land of Kłodzko – one of the most beautiful corners in the south-west of Poland.

In my practical training, I developed a local strategy for green heat energy and electrical energy supply for municipal facilities in Kłodzko, covering the current state and future directions of the town’s development. I chose this subject because I am concerned about the future of my home town. My work was based on information obtained from offices, weather stations and local public institutions. As a result I managed to estimate the potential of renewable energy in the region as a basis to plan the modernization of public buildings and street lights and future directions of development. In my opinion, solar, water and geothermal energy should be developed, modernized and installed. Thermal modernization of all public buildings should be improved.

Thank you very much Radomir and we wish you the best for the future.

” *Hey Radomir, how did you find out about PraTLA?*

I heard about PraTLA Project from a friend at Wrocław University of Technology and also from the leaflets which I saw at the university. Then I participated in a meeting in Wrocław where Mrs. Natalia presented information about the PraTLA project.

During my courses at university, I studied water, solar and wind energy and also bio-gas production.

Wojtek Karwacki:

University:

Wrocław University of Technology

Study course and year: Power engineering, specialization in energy from renewable sources, 5th year

Duration of practical training: June to August 2011

” *What did you study?*

I am studying power engineering with the specialization in energy from renewable sources in the 5th year. My knowledge covers energy conversion, geothermal and solar installations, wind turbines, boilers, straw, wood waste, solar collectors, heat pumps, as well as hydro and thermal power stations based on non-conventional energy sources.

” *Hey Wojtek, how did you found out about PraTLA?*

I heard about the project from my colleague, who represents the student government at Wrocław University of Technology.

” *Could you please briefly describe what you did in your practical training?*

I had my internship in the Municipal Office in Bielawa. Bielawa is a town with a small population in the region of Lower Silesia, in the south west of Poland. Bielawa’s

main asset is its location at the foot of the oldest mountain range in Europe – the Sowie Mountains. Within my practical training, I developed a strategy for the improvement in energy efficiency of public utility buildings in the area of the town of Bielawa, with the example of two buildings of a primary school including a kindergarten. The strategy refers to the energy certification, the possibility of reducing energy consumption and providing power to buildings from renewable energy sources.

Why did you choose to do this practical training in Bielawa and how about planned projects in the future?

I chose the practical placement in Bielawa because it is my hometown and because I am interested in the subject of renewable energy sources, mainly wind energy but also water, solar energy and biomass. During my studies I had the opportunity to do calculations related to the certification of buildings (energy performance certificates).

Currently, there are some projects under way in Bielawa, for instance the thermal modernisation of public-utility facilities and residential buildings, establishing a facility

database and using it to identify buildings that need immediate action to improve their efficiency, as well as monitoring energy consumption in buildings and identifying irregularities.

Following prospective projects are planned in Bielawa:

- measures taken with a view to increasing the proportion of renewable energy sources in end-user consumption; the modernisation of street lighting
- encouraging environmentally friendly measures
- the introduction of reasonable energy usage, aimed at children and young people
- the organisation of meetings focussing on energy efficiency for town residents

It is noteworthy that Bielawa can serve as a nationwide role model as an exemplary environmentally friendly town.

Finally, is there anything else you would like to add?

During my practical training, the cooperation with the office staff was very good. The PraTLA-Project enabled me to do a practical training to apply newly acquired knowledge during higher-education studies.

Thanks a lot Wojtek! Good luck!



3.3.3 Statement and impression from municipalities and municipal institutions

The project was a strong stimulus reinforcing the cooperation between students and Local Government units. In a period of economic crisis, when it is increasingly more difficult for students to gain professional experience, and offices are under strong pressure with regard to environmental protection and actions related to energy efficiency contributing to streamlining energy processes, the value-added of this type of cooperation gives the project even more significance as a priority.

The great advantage of the students' work was the independence of action, correct conclusions and expressing their own mature thoughts and opinions in the studies prepared specifically for the selected institution.

The studies included the points developed on the basis of plans for the work placements. The studies consisted of, among other issues, an analysis of the influence of climatic and geographical conditions on the possibility of utilising renewable energy sources in the local area, energy consumption in public-utility buildings on the basis of data on the actual energy consumption, the possibility of savings and using renewable energy sources in selected public-utility buildings, thermal modernisation, street-lighting modernisation, studies on the construction of an agricultural biogas plant, educating the local

community, the modernisation of heat and electricity networks, etc. A comprehensive approach to the issues was used. The students prepared general but very accurate, analyses and guidelines, which can be directly used in the subsequent stages of work connected with creating and improving local energy strategies.

The project turned out to be a huge success, both with regard to the professional experience gained by the young people, and in terms of organisation. The results of the students' work were assessed as exceptionally creative and conscientiously prepared, and will certainly be used as the basis of further work on the improvement of energy efficiency.

During the conference summarising the PraTLA project, many representatives of local authorities were among the invited guests who were presented with the idea of the project for the first time. They showed great interest in the subject matter of the meeting, and willingness to participate in this type of project in the future. They reacted positively to the results and effects of the students' work.

The cooperation between local authorities and students should be treated as an investment for both parties, who, due to the cooperation, gained new experience and skills and at the same time contributed to the improvement in energy efficiency. But eliminating this type of cooperation will make well-educated students unable to find their place in the business environment or to use the knowledge acquired.



3.3.4 Summary

The project was used by seven students of the Wrocław University of Technology studying majors connected with the subject matter of power engineering and environmental protection. The training lasted three months and was successfully completed. The municipalities of Bielawa, Świdnica, Duszniki Zdrój, Oleśnica, Stronie Śląskie, Kłodzko and Jelcz-Laskowice participated in the project.

Participation in the project was a wonderful experience bringing many benefits both to the project partner and its participants, so it was definitely worth joining.

The students of the Wrocław University of Technology declared their willingness to participate in initiatives on energy efficiency and to complete a voluntary practical training in their semester break. Every student submitted their monthly internship report including comments, observations, and conclusions on the tasks they had performed. During the training, students had an opportunity to confront their theoretical knowledge and skills acquired during their studies with methods applied in real life. With participating in the project, the students gained and developed a number of interpersonal and communication skills (including team work, constructive and confident expression of their opinions, the courage to present their ideas, independence, resourcefulness, adaptation skills, etc.). Due to the established cooperation, they will be able to find their way into the business environment and to utilise the knowledge gained. Therefore, most of the students were satisfied with the training. The purpose of the practical training was a kind of trial period in the profession which the students are planning to practice after graduation.

The local authorities participating in the project used an additional source of knowledge which will be a valuable and attractive complementary element in the programme in terms of the identification, preparation and implementation of actions aimed at increasing energy efficiency and meeting the energy requirements of residents.

All works were given positive grades in terms of their structure and content. Some of the assignments will be helpful in composing students' master theses and in expanding their knowledge concerning the issues of widely understood energy efficiency.

At the beginning, when Karkonoska Agency for Regional Development was searching for possible stakeholders, the company had difficulties in establishing communication with the Universities. A lot of unit employees refused to help or to establish cooperation. In numerous local authorities there is a shortage of employees whose scope of duties would include energetic effectiveness in its broad sense: many institutions refused cooperation due to their lack of knowledge and experience in the field of energetic science.

The greatest challenge for Karkonoska Agency has been a lack of experience in the field of energy efficiency. Therefore, it has found a specialist in the field of local policy and strategic planning in the area of energy efficiency in Local-Government units who could help to develop schedules for initial training which would improve the energetic strategies of selected cities/regions. After several meeting and phone calls as well as by written correspondence, the project coordinator of Karkonoska Agency found a specialist, interested municipalities and a professor of the Wrocław University. Summarizing the above, it can be said that it was hard to convince mentioned stakeholders of the PraTLA project and therefore support students in their studies as well as to support the process to increase energy efficiency in their regions, but with finding these persons, everything went well and without any mayor problems.

Due to the PraTLA project, Karkonoska Agency could support both the municipalities and students. In addition the company helped to implement projects for local and regional development. The Company was promoting more in the Lower Silesia region, enjoying considerable public trust and interest as well as becoming a professional and reliable business partner for all the cooperating entities. Furthermore, Karkonoska

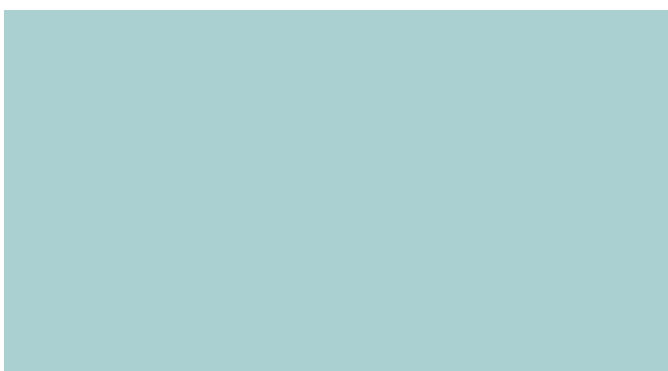
Agency could also establish further business contacts to Universities and other stakeholders as well as establish partnerships and reach an understanding with local government representatives.

All the meetings with project partners were at a high level in terms of merit, providing an opportunity for exchanging views, concepts and experiences. It was particularly beneficial to have a chance to gain information and find out about the opinions of other participants in the project, who are more experienced in the field of implementing projects increasing energy efficiency. Each of the parties presented a detailed description of the action process within the implemented project.

The cooperation with partners was based on sympathy and mutual respect. It was carried out in an atmosphere of mutual understanding, with the primary goal of exchanging specific knowledge, a lot of information, and mutual assistance on difficult matters. Plans and methods for carrying out certain actions were mutu-

ally discussed. The obtained suggestions and comments will certainly contribute to the improvement in the implementation of further projects in the future. The relationship established by the leading partner with other partners motivated them to act and outline the purpose of the project implementation, as it made it possible to recognise the significance of their work on the whole project.

PraTLA was the first, but probably not the last, project planned by Karkonoska Agency. After finishing the project, the Agency will undertake actions to ensure the sustainability of the project's products. Based on the knowledge gained by the PraTLA project, Karkonoska Agency will participate in more energy efficient projects in order to continue the support for the region. Karkonoska Agency is also interested in further cooperation with international partners to further international exchange of experiences in the fields of the identification, analysis and transfer of best practice and the possibility of applying for EU funds for the implementation of more projects in the field of increasing energy efficiency.



3.4 Haute-Savoie – The Council for Architecture, Urbanism and Environment

3.4.1 Background and approach

The Council for Architecture, Urbanism and Environment is a departmental body initiated by the General Council of Haute-Savoie, in compliance with the 1977 architecture law. Its purpose is a public utility service under the control of a local representative. The Council's objective is to promote the quality of architecture, urban development and the environment. Every year, more than 200 municipalities or their associations benefit from the Council's services and their multidisciplinary team with 18 persons. Their range of service includes not only advising citizens, for instance in energy efficient construction and renovation, as well as organizing public debates, exhibitions, conferences and visits. The Council also trains and facilitates projects of elected representatives and manages professional networks as well as coaches teachers in its educational project. In addition, they have experience in the work with students.

In recent years, a lot of projects on energy efficiency have been carried out in the region of Haute-Savoie. Among other, the Council supported their region and was able to gain new experience in this field. At the same time, the company is involved in another EnercitEE project. PraTLA offers a professional framework for students. It is based on their innovative propositions to encourage municipalities to participate and to facilitate good practice in the energy field of their local territory. The two introductory years will help local authorities to set up a tool to follow-up and to evaluate the impact of their energy policies, contributing to implement Haute-Savoie's energy and climate plan.

The Council has a longstanding cooperation with the Institute of Training. This institute is an association in partnership with the University of Lyon III, the University of Savoy and the agricultural high school of Poisy. The Council benefits from this partnership and can get in touch with students more easily. The interdisciplinary training integrates all the domains connected to territorial development and the management of resources.

At the end of the three years of studies, students have to write their diploma thesis obtain two diploma degrees. Half of their time, they have to attend some lectures and write their diploma thesis.

At the beginning of the project, the Council launched a call for project to 100 municipalities by sending an invitation to the mayors to participate in PraTLA project, 12 of them responded. Afterwards, all 42 participating students from the institutional study course "Geography – Arrangement" developed a monitoring tool together with town planners. This tool is like a guideline and follow-up for sustainable development actions. The Council also organized one official meeting per municipality on site, with all representatives involved to present the PraTLA project and the methods of work. In this meeting, the students and municipalities got in touch for the first time and found possible topics for students' practical training.

Over a period of 4 months, student groups consisting of 2-3 stu-



dents per municipality were sent to municipalities to analyze topics together. Due to the prescribed lectures, the students only went to the municipalities to collect data or information for their practical training. Most of their time, they evaluated the data while being at the university. Periodically, the Council organized workshops in the university together with experts to exchange students' results and experiences and summed everything up in the tool developed. As planned, the Council also organized a study trip for all participating stakeholders. For one day all participants visited buildings and projects of urban planning. During this study trip, they met the Department of Energy City of Geneva, gave a presentation of their action plan and exchanges experiences. All practical trainings ended with several conferences to disseminate the results of students' work: in General Council and in each municipality. Just at the beginning, it was their plan to perform the same process every year, which was successfully completed.

3.4.2 Presentation of selected Student projects – Results and impressions

Damien Deville, Emanuel Gonthier and Baptiste Merhan:

University:

Institute of training

Study course: Geography – Arrangement, 3rd year

Duration of practical training: September to December 2011

Municipal practical training institution: City of Marignier

Haute-Savoie and one of the 300 French local authorities to engage in this global sustainable development.

In 2011, several innovative actions affirming the wish to improve the living environment of the municipality were implemented. The institute of training and the Council for Architecture, Urbanism and Environment has started the process of evaluation and continuous improvement. Among its many actions, the municipality of Marignier has implemented an original system of busing: „the walking bus“.

How does it work?

Hey Damien, Emanuel, Baptiste, what did you study and where did you do your practical training?

We are studying Geography – Arrangement at the Institute of training in Poisy. We did our practical training all three together in the City of Marignier where a new „walking bus“-line was opened. This was the project we worked with.

That's really interesting! Please tell us more about the „walking bus“?

Agenda 21 is a program whose aim is to progressively implement actions for sustainable development on a territorial scale. It is supported by the community and carried out in consultation with all stakeholders in local life: for instance municipal staff and elected officials, citizens, associations, economic actors, the education sector and public services.

In 2010, the City Council decided to continue its efforts in engaging in the development of a Local Agenda 21 to provide a coherent framework and an overview of these actions. The municipality became the sixth town of

A tour is organized throughout the town to accompany children on their way to school where children are picked up from home and go together to school. In the evening after school the same procedure is used. Supervision is provided by a person employed by the municipality, often someone search employment for a longer period of time. In letters, students informed all parents from relevant schools about the idea and invited them to a meeting where they presented the project and the ideas. A lot of parents participated because a bus line is not available so most parents had to bring their kids to school by car. Therefore it was a special service for them. The aim of this project was to reduce the emissions produced by vehicles and to reduce noise and exhausts in the surrounding area of the school.

Their work allowed elected representatives to position themselves in the development of this action. A satisfaction survey conducted among parents, traffic analysis and requests of the population allowed elected representatives to open a third line of walking bus in the municipality.

Thanks you all! Good luck for the future!



Roméo Donio, Clément Crozet and Nans Moratille:

University:

Institute of training

Study course: Geography – Arrangement, 3rd year

Duration of practical training: September to December 2011

Municipal practical training institution:

City of Scionzier

municipality by working on the field “Building” during our practical training.

“Could you please briefly describe your topic of practical training? What were your approaches and results?”

We were involved in analyzing three separate buildings including a gymnasium built in 1964. These three buildings have not been renovated since its construction. Heating is provided by a gas boiler and lighting by electricity. Many people use the gymnasium such as school children, associations and fire departments.

Based on invoices and meter data, we collected data from 2007-2009 to estimate the energy consumption of the buildings and trends for energy costs. Additionally the estimation of weather conditions was summarized. After this evaluation, four graphs were produced for this indicator. We found out that the consumption of electricity and gas in 2008 was at its highest level and a decline could be recorded in 2009. This can be explained by better management and an awareness campaign in 2008.

At the end of the project, an excel tool was provided for town administration in order to annually review energy consumption. Furthermore, recommendations were given on how and in which fields energy could be saved not only by exchanging equipment for more energy efficient ones, e.g. light bulbs, but also by changes in behavior.

“Hey Roméo, Clément and Nans what did you study?”

We study Geographical-Arrangement at the Institute of training in the 3rd year. From September to December, we did our practical training together in the town of Scionzier.

“Please, tell us something about the background of the practical training completed in the City of Scionzier.”

Scionzier is a small town with approximately 7,000 inhabitants. This town wants to reduce its energy consumption. That is the reason why the municipality created an action plan, separated into five fields of study, set objectives and found other indicators. In the following table (p. 30), you will see the town’s action plan. In different projects, the municipality wants to analyze the different fields in more detail to implement the findings at the end. For this reason, we supported the



Fields	Subjects	Indicators	Units	Actions to achieve	People involved
Mobility	Evaluate the effectiveness of eco-driving training	Consumption (gasoline) and municipal vehicles before and after eco-driving training	Litres per km and month	Tell city officials to note down the mileage of the vehicles at the gas station and keep the receipts	Mr. Gérard Veyrat
	Identify routes for ways to school	Number of students by type of trip: walking, by bike, by car and by bus	% students by type of travel	designing a questionnaire, analysing the data, produce statistics	directors of : <ul style="list-style-type: none"> • „du château” primary school • „Crêtet” primary school • „du Crozet” nursery school • „J.J. Gallay” high school
Green Space	Reduced consumption of pesticides	Changes in consumption of pesticides in the town	Litre/year	Change the specifications, collect and analyse data, produce a graph	Mr. Gérard Veyrat
Waste	Evaluate the number of composters in the town	Number of composters sold in the town	Sales/year	Collect data from the town	Mr. Gérard Veyrat
	Evaluate the impact of the implementation of composting on reducing waste	Volume of waste in the town before and after the introduction of indoor composters	Tonnes/year and kg/inhabitants saved	Collect and analyse data, produce a graph	Mr. Gérard Veyrat
Water	Limit the waste of water, evaluate the financial losses due to non-payment of the fee	Evaluation of water consumption in the town for ten years	m ³ per year per home	Collect and analyse data, produce a graph	Mr. Gérard Veyrat
Buildings	Estimate and reduce annual energy consumption	Evaluation of energy consumption (electricity, gas or oil) of 3 public buildings	KWh/m ² and year	Collect and analyse data, produce graph	Mr. Gérard Veyrat

3.4.3 Institute of training – Statement and impression

This work allows the students to better know and to master the initiation of projects which have to result in their implementation. The subject of the project has to be in coherence with the educational project of the school.

Having 2nd-year students work in the PraTLA project matches the objectives of the school because the European dimension will be approached and energy questions are treated on a local level.

The students potentially concerned acquired in the first year of formation the skills in project management (they all participated in a professional project) and specific knowledge on the energy problems on the municipal level because they attended particular courses on sustainable development, agenda 21, various forms of energies and energy management, eco-construction,

urban planning, the functioning of regions with a measure of autonomy etc.

Students use professional methods of the Council:

- To set targets with elected representatives
- To get an overview of the municipal situation in sustainable development actions
- To create a follow-up tool for municipal actions to evaluate their progress

In this project, energy saving is a part of an overall approach and all students' work is supervised by a town planner.

These professional projects change students and methodology is an important contribution to them. The project has reduced the difference that exists between academia and the professional world. It has demonstrated a real collaboration between the two sectors.

The final report is important for the students' training and their confrontation with the reality on site.



3.4.4 Summary

In the region of Haute-Savoie, 42 students carried out their practical training in 12 municipalities: 6 municipalities (for instance Alby-sur-Chéran, Vallières and Arthaz) with 24 students in the first year and another 6 municipalities (for instance Epagny, Passy and Marignier) with 18 students in the second year. Furthermore, one study trip with involved students, municipal staff, experts and the project coordinator was organized each year.

One of the missions of the Council for Architecture, Urbanism and Environment is to support local authorities' projects in their planning and construction. The Department of Haute-Savoie is composed of many small and medium sized municipalities (500 to 5000 people) which all have some ideas to carry out actions for sustainable development. However, they do not always have the human resources in their service to initiate, carry out and evaluate these actions.

This project allows the Council to develop and to strengthen its mission to establish energy efficiency as part of local policies as well as to support municipalities and professionals with trainings.

On the other hand, theoretical teaching of the university doesn't provide the students with practical training on the actual working of a local authority. This practical aspect is missing in their training.

This is why the PraTLA project gives us a real opportunity to bring municipalities and students together. Working with municipalities, students gain a real understanding of their operations, and a better perception of the challenges of the twenty-first century for urban development. Municipalities gain a new perspective from new and innovative ideas of the students involved.

Students' contributions allow local authorities to plan and implement their actions. It is a real exchange of skills between students and elected officials.

This project has allowed the Council to bring a new method of working with local authorities. We were able to identify and clarify priorities which we had not thought about before, such as encouraging municipalities to organize their data in order to better evaluate the impact of their actions on sustainable development.

This project has also proved that work on behaviour and usage is as important as new technologies (insulation, renewable energies etc.).

After the PraTLA experience, we will continue to work with the Institute of Training and volunteer local authorities using this method. For the new school year we have two projects with two municipalities and four students.

Students' work has really allowed us to initiate evaluation in some municipalities. This project was a trigger for others to start thinking about energy saving. Before municipalities can save energy, the Council has to help them to organize their data on energy consumption.

All project partners pursue the same objectives and issues on an international level, but have not the same challenges at a local level because of the different situations in the countries: As a consequence of this, several approaches are required. The most important part for the Council was to understand this approach. Due to the cooperation with different project partners, they learned to „think globally and act locally“.

In the future, we want to give more students the chance to apply their theoretical knowledge in practice. Therefore, after the practical trainings within PraTLA were finished, the Council started two new projects with two new municipalities this year.

4. Conclusion and outlook

Benefits for students and municipalities – Win-win situation

In some municipalities, there is a lack of know-how and time to implement energy efficiency strategies successfully. Due to their studies at university, students are always kept at the latest scientific knowledge, which they can directly transfer into practice, thus offering best conditions for municipalities. Based on this, the PraTLA project identified municipal requirements and matched them with students' knowledge. Therefore, both target groups benefit from each other.

Approximately 60 municipalities and around 70 students significantly gained from the participation in the project. For some municipalities it was the catalyst for new energy efficiency projects. The students not only got the possibility to work on practical things and got insight into the municipal administrative structure, but also grew with the tasks and trained their soft skills. The demand for students' support is large in communities and will be increasing in future.

Initial situations and approaches

The project partners are from institutions with different areas of responsibility. Most of them had experience in the field of learning/teaching, as well as in the work with students and municipalities. Thus, there existed net-works with students or municipalities even before the PraTLA project started. For all partners, however, it was new to coordinate practical trainings for students with municipal institutions. Against this background different approaches were used.

The project coordinators chose many different ways to acquire the target group: rather usual ways like writing letters, leaflets, information on websites and telephone calls or unusual ways like mouth-to-mouth method. But every one of the project coordinators organized conferences and invited representatives from municipa-

lities, students and university experts to inform about PraTLA, about the project objectives and to find topics for practical trainings. The direct contact and communication to stakeholders was the key to success.

During the practical training, the students were supported by the project coordinator not only when it came to problems. All partners organized seminars, too, where the participants got information about the current results and exchanged their experience.

The duration of practical training varied between 3-6 months or sometimes longer. All project partners came to the conclusion that a longer trainee time frame would be better for both sides: for students to get deeper insights into the administrative work and structures; and for analyzing a more extensive topic.

Challenges and barriers

The biggest challenge in Sweden was the matching of the course of study with the requested tasks in the municipalities. Furthermore the timeframe for the practical trainings of the students was quite limited, which also had an effect on the possible topics to work with.

In Poland, Germany and France the support of students within the participating municipalities was sometimes low. In those cases the project coordinators were eager to push the process rigorously – and only due to that support the students were able to continue the work on their projects.

Our learning effect

The project partners agree that it is most important to motivate the experts from universities as well as the staff of the municipality right from the beginning, as they are the main contact persons and support for the students during the practical training.

Furthermore, successful work placements do not only depend on the quality of university teaching, but also on the motivation of the students involved and the mentoring intensity and quality of the local administrations. Partners in administration should be well aware of the fact that students are in need of support to achieve good results which can be put into practice and this support requires a considerable amount of time. The expenditure of time was well worth the effort for the municipalities in the participating regions.

The project partners exchanged all their experience gained on the regional level within the interregional meetings. These get-togethers offered a great opportunity to learn and profit from each other's knowledge collected in the regional activities of the PraTLA project in Lower Silesia, Småland, Haute-Savoie and Saxony.

This European cooperation also enabled the project coordinators to get first-hand information from representatives from other countries and this experience expanded their personal horizons.

Future prospects

With the knowledge gained by the PraTLA project, all project partners would like to do more energy efficiency projects, work further with students and support municipalities in their projects. All the project partners are interested in continuing the cooperation with international partners in the future.

All in all, the student projects made an important contribution for increasing energy efficiency in municipalities in four European regions.



Impressions

"The largest benefit was to be able to focus on a topic we were really interested in. But at the same time, we had higher ambitions than the time frame permitted. It was a challenge to limit the work so it would be manageable within the timeframe." Anders Svensson, student at Linneaus University in Växjö and intern Energy Agency for Southeast Sweden

"More than bringing solutions, this project has initiated a working method and evaluation of municipality's actions in terms of sustainable development."
Municipality (Haute-Savoie)

"Thanks to the well-founded, practical and highly qualified level of education shown by students, TRIXI Park is interested in a further cooperation with Zittau University of Applied Sciences." Municipal institution TRIXI Park (Saxony)

"It was the aim of the PraTLA project to match students with local authorities to discover room for improvement of energy efficiency. In my opinion, this goal was reached and both target groups benefited from the project. My mentor, Roger Gunnarsson, was excellent in his support. He spent much time with me to make sure that my stay in Sweden was as enjoyable as possible." Armin Verch, student from University of Applied Sciences Zittau/Görlitz and intern Energy Agency for Southeast Sweden

"I urge anyone who has a chance to take on apprentices in the various fields of energy and climate to take the chance. I'm glad I did it!"

Tina Larsen, energy and climate adviser, civil servant
Municipality of Älmhult (Småland)

"The coordination of the project can serve as a role model as we highly benefited from having practical experience as university graduates. We could apply our theoretical knowledge and gain an enormous amount of new knowledge. New contacts were formed to learn more and exchange experience."

Yvonne Geldner und Alexander Rewerk, municipal institution TRIXI Park (Saxony)

"Among future investments within the city, the following are worth mentioning: the completed thermal modernization of all facilities, a project of modernization of the street lighting system, an agricultural biogas plant, a project for the construction of new hydroelectric power plants, and the direct utilisation of solar radiation"

Student, Municipality Kłodzko (Lower Silesia)



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