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Regional Networks for the development of a Sustainable Market for
Bioenergy in Europe



WP 2, Deliverable 2.4 Report

“Best Practice visits” including results from the questionnaires and
from the conclusions reached by each target region delegation

Project co-funded through



Acknowledgements

This report has been produced as part of the project BioRegions. The logos of the partners cooperating in this project are shown below and more information about them and the project is available on www.bioregions.eu

The logo for WIP, consisting of the letters 'WIP' in a bold, black, sans-serif font.The logo for ENVIROS, featuring the word 'ENVIROS' in white, bold, sans-serif font on a black rectangular background.The logo for VTT, featuring a stylized blue waveform above the letters 'VTT' in a bold, blue, sans-serif font.The logo for LTC, featuring the letters 'LTC' in a bold, blue, sans-serif font inside a blue oval shape.The logo for RIGA EKODOMA, featuring the word 'RIGA' in a blue box, 'EKODOMA' in a red box, and 'sia' in a smaller font to the right.The logo for the Energy Agency of Slovakia, featuring a colorful globe icon and the text 'ENERGY AGENCY OF SLOVAKIA'.The logo for SAT Le Trièves, featuring a stylized graphic of a mountain and sun above the letters 'S A T' and the text 'Le Trièves' below.The logo for ENERGETICKÁ AGENTURA ZELÉNÉHO KRAJE, s.r.o., featuring a stylized 'e' and 'a' icon and the text 'ENERGETICKÁ AGENTURA ZELÉNÉHO KRAJE, s.r.o.'.The logo for CAPITALCONNECT, featuring a stylized red and blue graphic above the text 'CAPITALCONNECT' and 'Capital Connect Consultants' below.

The work for this report has been performed by **LTC AB**, Sweden.

Disclaimer

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Executive summary

The overall objective of this task was to organise a “best practice” visit for target region stakeholders to the Jönköping region in Sweden in order to stimulate and motivate participating delegates through the power of example whilst at the same time attempting to change the “can’t be done at all” to “can be done, perhaps this way instead”. The programme was designed to provide a contextual hands-on insight into projects and applications, get direct contact with those with experience and know-how and encourage those that are already have ideas and are considering the feasibility of these in their own regions.

A total of 17 stakeholders along with 3 project managers from the five target regions participated in the programme that was organised by LTC. The post-event questionnaire had a response frequency of 90 %.

The overall results of the questionnaire seem to suggest that the visit was well planned and matched delegate expectations of what they wanted and expected to see and bring home to their respective regions in order to further their own development.

Table of Contents

Executive Summary.....	3
1 Introduction to BioRegions.....	5
2 Brief Description of the Visit Programme.....	7
3 Evaluation of the Study Visit.....	11
Annex 1 Background to the Visit and Pre-visit Questionnaire.....	16
Annex 2 Topic Suggestion Feedback Questionnaire.....	32
Annex 3 Tentative Programme.....	35
Annex 4 List of Participants.....	37
Annex 5 Final Programme.....	38
Annex 6 Post-visit Questionnaire.....	40
Annex 7 Presentations.....	43

1 Introduction to BioRegions

The project “Regional Networks for the development of a Sustainable Market for Bioenergy in Europe”, hereafter in this report referred to as “*BioRegions*”, has the overall purpose to help and support the creation of “bioenergy regions” in a number of rural areas in Europe. In the context of the project a “bioenergy region” is understood to be a region that derives at least one third of its energy (heat and/or power) using biomass produced and/or sourced from regional and sustainable sources. For instance using biomass sourced from forestry, wood processing horticulture or agriculture activities.

BioRegions aims to support the creation of five such bioenergy regions (referred to as target regions in the project) in representative rural locations in Europe by tapping into the experiences of other regions already well advanced in the use of bioenergy (referred to as “best practice” regions) and direct use of the knowledge compiled in the project.

This support and knowledge comes from five main actions in the *BioRegions* work programme:

- Identify success factors from best practice regions
- Networking activities in the target regions
- Define Action Plans for establishing five new bioenergy regions
- Support the implementation of the Action Plans in the target regions
- Encourage and support other regions to replicate the project activities

These activities serve to bring together the necessary technical and non-technical knowledge clusters for the establishment of a bioenergy region based on a discerning evaluation of ongoing best practice activities complimented by insight into funding strategies and networking structures.

This specific report covers the work done by LTC in task 2.4 “Best Practice visits” including results from the questionnaires and from the conclusions reached by each target region delegation.

1.1 Objective of the task

By organizing a full two-day visit programme to a “best practice” region the overall objective of this task was to try to stimulate and motivate participating delegations through the power of example whilst at the same time attempting to change the “can’t be done at all” to “can be done, perhaps this way instead”. The programme was designed to provide a contextual hands-on insight into projects and applications, get direct contact with those with experience and know-how and encourage those that are already have ideas and are considering the feasibility of these in their own regions.

1.2 Method and limitations

There were two study tours to two regions organised within the work package; to Achental, Germany at the end of March respective Jönköping, Sweden in mid-September. Both regions display very different preconditions, characteristics, scale and applications. Therefore it was suggested when organising the first study tour to Achental (and subsequently decided at the project meeting in May) that it was prudent to allow enough time between the two visits in order to learn from the experiences gained from the first visit while making it feasible for any delegate who wanted to visit both regions.

Moreover the visit to Jönköping could also be timed together with the Nordic District Heating and the Elmia Fastighet, a real estate and facilities management tradeshow that was to take place 20 - 22 September. Both of these tradeshows were taking place at the Elmia fairgrounds and conference venue, were thematic relevance to the planned visit and could be incorporated as additional options for the visit. Additionally from a logistical point of view it proved to be very practical as most of the programme presenters and companies to be visited were going to be available in the vicinity either as visitors or exhibitors.

It also meant cost savings could be achieved. The conference room, and entrance to the tradeshows day two in the programme was kindly supplied by the event organisers Elmia AB who also hosted the closing mingle reception. Externally engaged speakers such as the Swedish Bioenergy Association provided their services pro-bono as they were attending the tradeshows and regarded their engagement as part of this attendance.

Two pre-visit questionnaires were sent in late May (annex 1 & 2) the first of which attempted to gather information about delegate expectations and knowledge base. The second provided suggestions about what could be available in terms of site-visits, meetings etc and respondents were asked to rate their interest. Also included was a description of the region (as previously submitted for the project application) providing some contextual insight and background to the proposed study visit.

Based on the feedback, a tentative programme (annex 3) was drafted by LTC and sent to partners in mid-July. A total of 22 people incl. representatives from project partners attended (annex 4). As can be expected when organizing site visits to commercial operations some late changes had to be made and the final programme (annex 5) differed slightly from the original. Furthermore an additional optional “bonus” visit to Tolefors farm, a farmer who had manufacturing of bio-oil from rape seed and used cooking oil (UCO) was arranged on the 19/9 en route for those delegates who had their own transfer transport. It was not included in the official programme as it was organised ad-hoc.

The post-event questionnaire (annex 6) used was designed to follow-up the pre-visit questionnaire in an effort to rate the matching of expressed expectations with outcome. This was sent to the project partners who had participating delegations in October. It should be mentioned that although the response rate was high (90 %) the overall survey population is low (total of 20). Thus the percentages quoted in the figures or texts are rounded up to the nearest whole number and are relative to the specific result. Since the survey population is only 20 each person represents 5 % which can be misleading. To minimise confusion, the actual number of responses in each case is given.

2 Brief Description of the Visit Programme

As noted the Jönköping region is one of the larger regions in the project (annex 1) and being a forest covered rural region it also implied that travel over relatively long distances would be necessary. Regardless what way the programme was put together, it would be two long and intensive days. Delegates arrived to Jönköping during the 19th September and made their way to the Sjöåkra gård accommodation facilities located in Bankeryd, a suburb just outside Jönköping. An informal dinner at the local pizzeria was organised for those who had arrived to Sjöåkra but had not eaten. All photos, Alan Sherrard, LTC.

Day one, 20th September

Using public transport, the most convenient and cost effective transport option, delegates were taken to Regional Development Council offices in central Jönköping for the first part of the programme.

Here presentations and discussions about the region, local, regional and national policy, the role of public authorities etc were held (annex 7). The purpose was to give a background and context to the site visits later in the programme.

On the right (photo 1) Dr Eva Gustafsson, Energy Centre South East, explaining the impact of a proactive public procurement policy on stimulating renewable energy usage such as bioenergy in a region

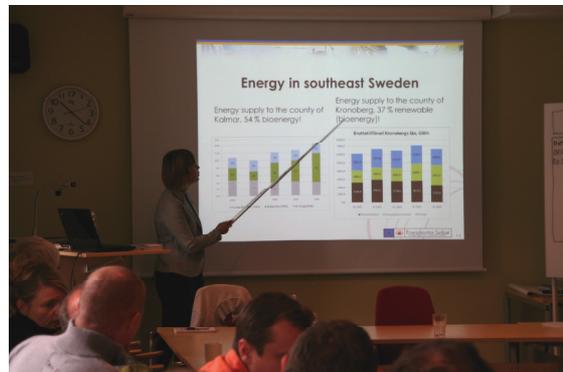


Photo 1

The next part of the programme included site visits to quite different installations. The first stop was to the very large wood and biomass railway terminal, Stockaryds Terminalen.



Photo 2



Photo 3

Photos 2 and 3, a large scale trailer mounted mobile chipping unit contracted by the terminal here chipping birch pulpwood as a value added service for a client.



Photo 4



Photo 5

Photo 4 (left) shows stumps for grinding, logs loaded on railway wagons (centre) as well as stockpiled logs (right). Photo 5 shows ground stumps (left) and chips (centre and right) which proved an interesting topic of discussion.

The next stop was the wood pelleting and animal bedding plant owned and run by one of the largest private sawmill and wood products companies in Sweden, VIDA Group.



Photo 6



Photo 7

Mr Lars-Göran Harrysson, CEO of VIDA Energy, (centre left photo 6) personally guided the BioRegions group around the plant in Hok that produces animal bedding and wood pellets from shavings and sawdust, a residue sourced from the VIDA Group own sawmills and wood processing plants. Photo 7 shows the pelleting presses.

The final two visits for the day were to a project originally initiated by the Federation of Swedish Farmers, LRF, an independent member financed organisation with the objective to promote the development of the land based industries. The first visit was the church in the village of Rydaholm, a 12th century listed building that had converted from oil to locally sourced grain for heating.

The second stop was to a local dairy farmer Lars Holmebo, Holmebo Farm who was also involved in the church conversion project as a supplier of grain. He grew other agro-energy crops such as hemp and had a briquetting press to produce own briquettes using hemp and wood shavings sourced from a nearby joinery. Here Lars Holmebo (far right photo 8) discussing his experiences with delegates.



Photo 8

Day two, 21st September

While day one focused more on the sourcing and production or pre-processing of different types of biomass fuels (chips, pellets, briquettes, grain etc) the second day focused more on the usage with specific projects. The group was joined by Mr Lars-Erik Larsson from the Swedish Bioenergy Association (Svebio) and by Mr Nils Thunström from NT Energi who was the total contractor for two of the visited projects. The first project visited was the IRIS Rehab centre, a residential substance abuse rehabilitation centre scenically located on an old farm complex outside the town of Mullsjö.

Consisting of a series of listed buildings the project involved a complete overall of the outdated, inefficient and expensive heating systems. The result was an entirely automatic combined solar and wood chip fired central boiler system with remote monitoring. Photo 9 shows the back of the boiler house with self contained chip silo (background) and automatic ash removal and storage (foreground).



Photo 9

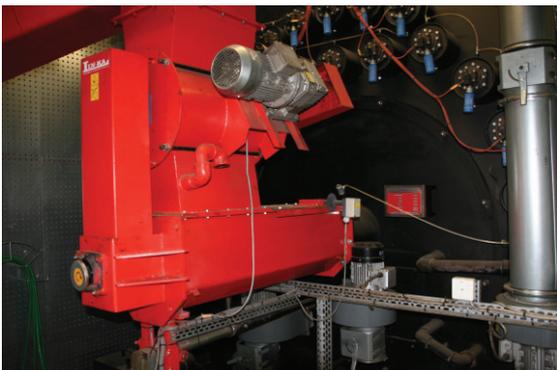


Photo 10



Photo 11

The next stop was to Mullsjö Energi district heating plant in Mullsjö, a series of three parallel self-contained units two of which used wood pellets whereas the third used wood chips. Here the group was met and guided around by Mr Hans Gille CEO for Mullsjö Energi & Miljö AB, the municipality owned waste management and utility company. Photo 10 is inside the wood chip boiler unit.

The final on site boiler unit visited was the modular “plug and play” pellet boiler and storage unit at the Sandhem primary school which replaced an oil-fired system (Photo 11). The instalment which was completed by the guide Mr Thunström took one working day to complete as the foundation and heat pipe connecting was already in place. Service and maintenance incl. ash removal and ensuring pellet deliveries is carried out by Mr Thunstöm.

Lunch was had at Swedish furniture retail ikon, IKEA located at the A6 centre, Sweden’s largest shopping centre before going to the combined visit/lecture at the A6 Energicentrum, an energy information dissemination centre located at the A6 centre. Jointly owned and run by several municipalities, the purpose of the A6 energy centre is to provide the general public with information and impartial advice on renewable energy, home heating and energy saving issues. A 500 sq.m permanent expo displaying solutions and information from different companies, installers and agencies is also located at the centre.



Photo 12



Photo 13

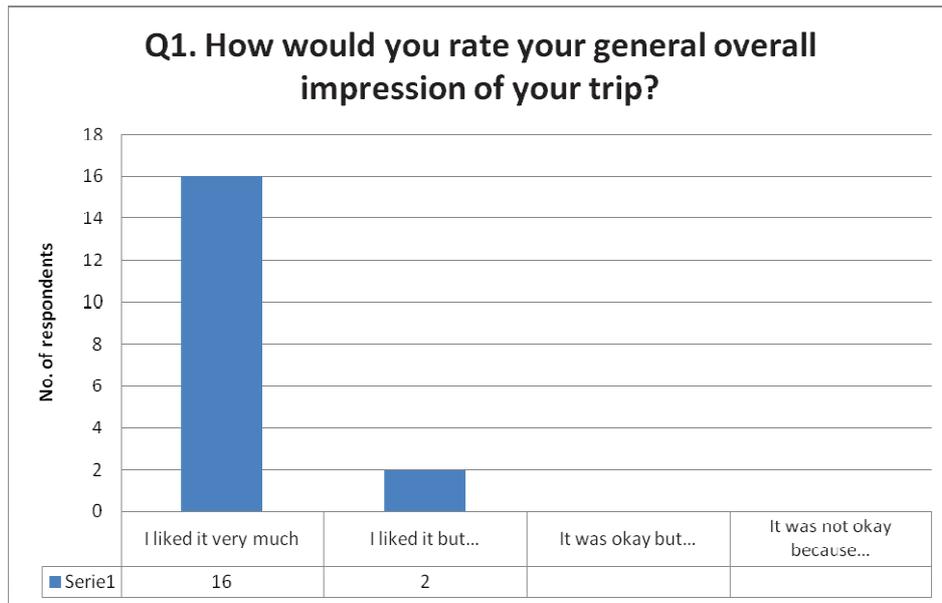
Delegates were then taken to the Elmia conference venue. Here there was two hours allocated for own visit to the Nordic District Heating tradeshow before meeting up for the final two presentations, wrap-up and mingle in a conference room at the venue. Photo 12 shows Lars-Erik Larsson, Swedish Bioenergy Association, Svebio, who gave an overview of the Swedish energy mix and discussed policies that have enabled bioenergy growth. The host, Jacob Hirsmark, Elmia (photo 13) gave a briefing of the Nordic District Heating tradeshow and trends in the sector as well as hosting a much appreciated mingle.

LTC would also like to acknowledge and thank the host companies and presenters for their time, hospitality and for sharing their experiences.

3 Evaluation of the Study Visit

Of the 20 participants, including 3 project partners but excluding LTC, 18 responded to the post-visit questionnaire giving a response rate of 90 %. If the 3 project partners are excluded from the questionnaire then 17 out of the 17 participants responded giving a 100 % response rate. The following figures show how the respondents rated their participation.

Figure 1 Overall impression



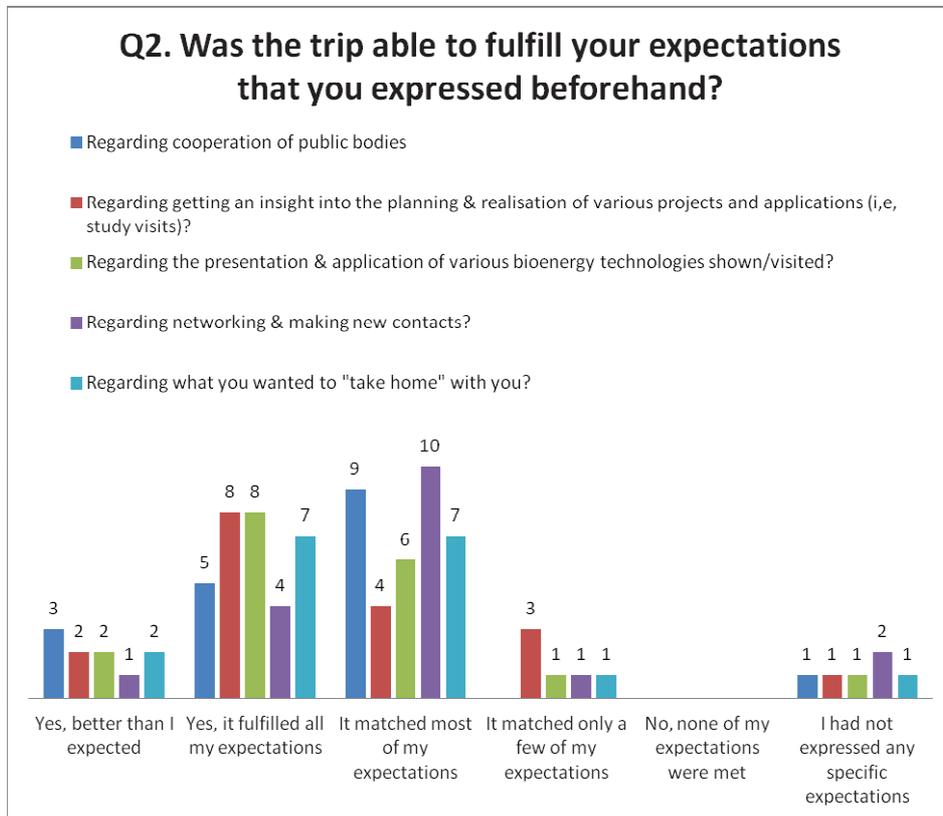
From figure 1 above it seems that the majority of participants had a good overall impression of their “best practice” visit to the Jönköping region, despite a very intense and long two days with a lot of travel. Naturally the response on its own does not say much and so the purpose of question two was to probe deeper into how respondents felt about different aspects of the visit in relation to their expectations as expressed in the pre-visit questionnaires (annex 1 & 2). In other words, how well did the actual programme match what they were expecting.

Four different areas were explored all of which have their origin in the network survey and subsequent recommendations for stakeholder motivation as reported in D2.2 earlier in this work package. The areas were cooperation of public bodies, an insight into the planning and realisation of various projects and applications, a presentation and application of various bioenergy technologies and finally, networking and making new contacts.

The fifth aspect on what participants wanted to “take home” was specifically asked in both the pre-visit questionnaire and again in the evaluation survey. The aim was to ensure that both project partners and participants had a clear sense of purpose when deciding on whether or not to come to Sweden or whom to send. This way they had ample advance notice to reflect on what they might want or need to take home to be able to move the project processes in their own regions forward and keep these issues in mind during the visit itself.

The question is if and to what degree these expressed expectations have been met or not. From figure 2 it would seem that majority of delegates indicated that all or most of their expectations were met in the five different areas.

Figure 2 Fulfilment of expressed expectations



However figure 2 also highlights what can be interpreted as an expression of disappointment, the second aspect (maroon bar) “regarding an insight into the planning and realisation of various projects” had three delegates who indicated that the visit “matched only a few” of their expectations. No particular reason was given for this. However it is more than likely due to language difficulties which in some cases were compounded by noise at the site. Two groups had interpretation within the group and one host needed assistance from Swedish to English. That the visits themselves looking at the technology and/or applications (which requires little spoken language to understand) scored higher (green bar) seem to support this assumption.

Question three sought to look into the programme itself with delegates asked to rate the relevancy of each part of the programme to their own specific situation. The social part of the programme i.e. dinner and mingle were not rated but asked about as an open commentary later in the questionnaire. The operative word in question three is “relevant” since a programme or part thereof can be highly interesting but not relevant. Figure 3.1 shows the results from day one whereas figure 3.2 shows the results from day two.

Although every effort was made to accommodate the beforehand expressed requests and interests, variance is to be expected as the different parts of the programme have different degrees of relevance to the individual delegates.

Thus it would be unreasonable to expect that the entire programme would score as “highly relevant” to all delegates. That being said having consistently high scores in the bottom end of the scale would also indicate a failure of the programme in terms of relevancy. As it happens only one programme item throughout the entire programme scored a “totally irrelevant” point, the visit to Rydaholm church on day one.

Figure 3.1 Programme relevancy day one

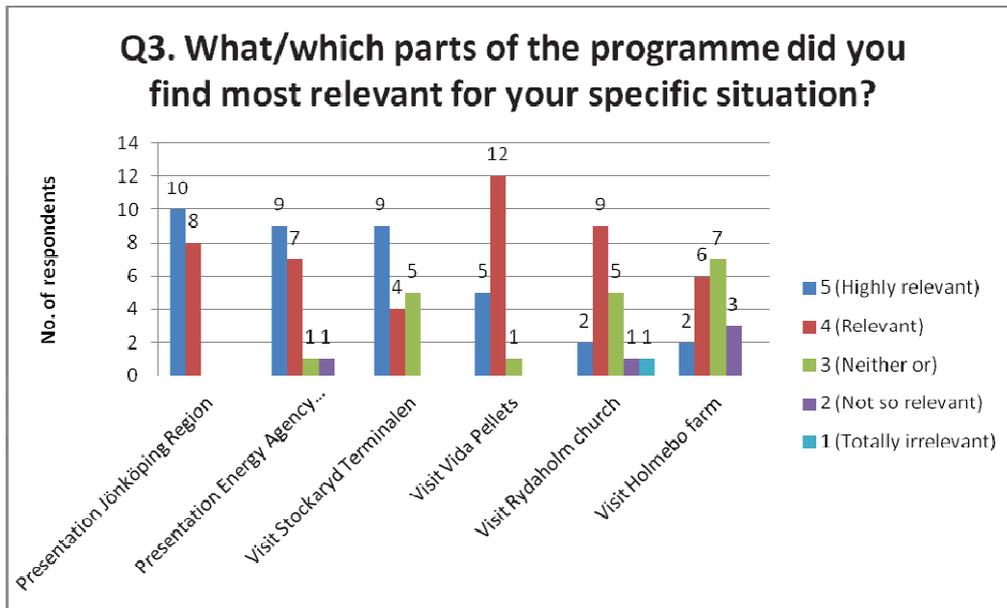
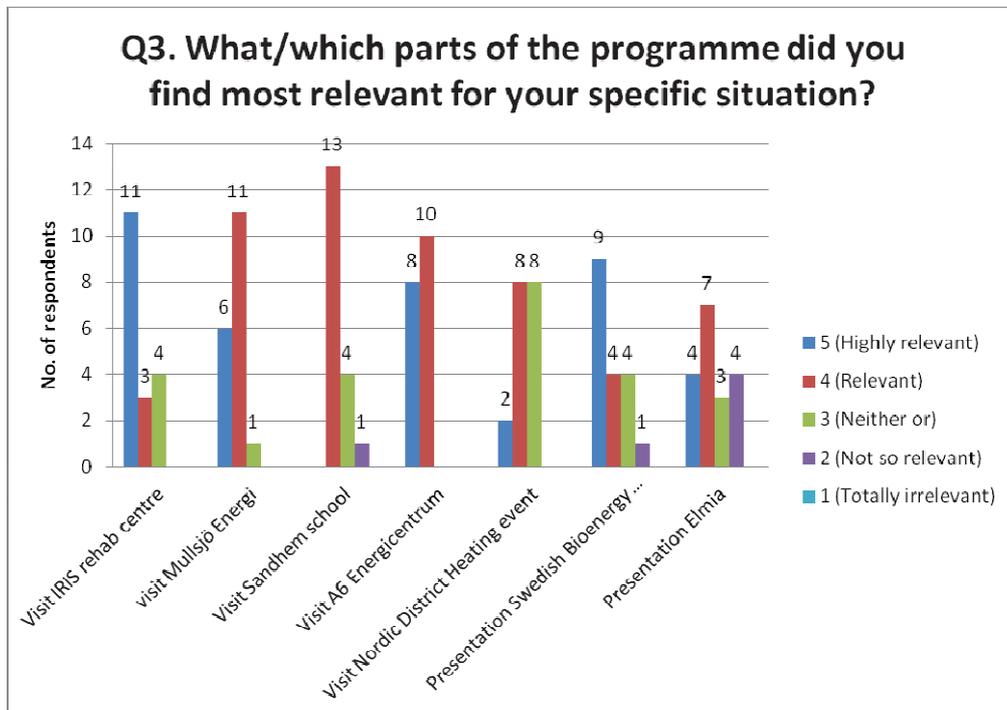


Figure 3.2 Programme relevancy day two



From the results in figures 3.1 and 3.2 it seems that the programme as a whole has been a success in terms of relevancy to the individual delegates.

The remaining three questions (no. 4-6 in annex 6) were open commentary and the replies are included below. Annex 7 includes some photos from the two days.

Question four asked: ***“What if any of the shown/visited projects and activities could be implemented or adapted for implementation in your own target region? Please specify!”***

“Of course everything should be seen according to the economic, geographic situation and the available energy in each country. We would be useful for chips and pellets container installation for our municipal buildings”

“Yes, Vida Pellets; IRIS rehab centre; Sandhem school”

“Unlike the other participants, transfer from oil to biomass is not the field of interest of our region. Our field of interest is how to make the process of using biomass more efficiently”

“Rydaholms church, IRIS rehab centre, Sandhem school”

“It was very interesting for us to see the farmer producing its own pellets, all the district heating networks even the very small one at school. Also the high quality pellet fabrication of VIDA showed us that we might be on the right way. We brought these ideas back with us because it’s always important to have a model in mind or an ideal, which shows you the way to go”

“Terminal Stockayds – it could be applied for salvage cutting (bark beetle, storms) → it wouldn’t be necessary to sold out woody biomass at any price + possibility to keep biomass in the region a sold it continuously to local saw mills = saving energy for transport and support of local employment. Energy Centre information campaigns for broad public and experts and networking of companies across bioenergy field”

“Municipality networking like in Jönköping region, Pellets factory and producing of bedding for horses”

“For example, the concept of A6 Energicentrum is suitable for the region”

“The project model of IRIS rehab centre and Mullsjo Energi /smaller version/ could be implemented in our region”

“The energy agency in South Sweden with offices and staff should be duplicated in our region”

Question five dealt with practicalities and asked: ***“What was your impression about the practical arrangements (transport/accommodation, food etc)?”***

“The event was a very nice thought. The program was very rich and diversified. Narrowly missed the time to visit the exhibition, great exhibition, very quickly went through it, but it was worth spending more time”

“Everything was very good organized. Transport, accommodation and food were good”

“Excellent!”

“Accommodation and food were OK. Transport was all right, but the distances were to long (maybe due to the breadth of visited country)”

“Excellent!”

“Everything was OK”

“Everything was perfectly organized!”

“Excellent throughout”

The final question was for the benefit of the project and organizers and asked: ***“What could/should we do differently the next time make your trip an even more interesting and pleasant experience?”***

“The program was very good, if everything ok, we get a lot of information but it would be very nice if we had the excursion tour and look at the town by walk”

“Day programs were organized very well. It was interesting and pleasant experience, but next time could be interesting to meet all participants also in evening event and have discussions more close and in open atmosphere.”

“I would prefer to get more information about other aspects of energy saving, more complex solutions and how to make the heating technology more costs efficient in public sector & end user”

“The scope of the agenda was too broad probably due to the wide spectrum of visitors”

“It would be interesting for us to see some activities on the field /forest/ connected to woody or other biomass collection and transportation”

“The only note here is to focus more on biodigestion and renewable from agriculture which is more suitable for our region.”

In summary the best practice visit to Jönköping was successful, the programme matched well the delegate expectations and it would seem that the objective of the task itself, motivating and inspiring the delegates, has been fulfilled.

Annex 1 Background to the Visit and Pre-visit Questionnaire



Regional Networks for the development of a Sustainable Market for
Bioenergy in Europe



STUDY VISIT JÖNKÖPING, SWEDEN

Brief background information and a pre-visit questionnaire

20-21 September

2011





Dear Partners and Stakeholders,

It is with pleasure that I invite you to the County of Jönköping and Sweden for the next Target Region and Stakeholder Study Visit, 20-21 September 2011. As you are aware this is part of an EU Intelligent Energy Project called "Bioregions".

In order to facilitate the substantial program planned for your visit, we have attached two questionnaires – the first one on general questions for your visit; and the second one on potential focus areas for your respective study visits while here, tailored to your respective needs.

The above mentioned possible study visits are examples and there are other options too should you have additional/other areas of interest to you. I can't promise that we can cater for absolutely every request but we will certainly do our best to assist as far as time, resources and availability is concerned.

Below you will also find a description of the County so as to allow you to get a first "snapshot" of where you are going to visit.

We would ask you return the two questionnaires as soon as possible to our Bioregion Partners from the Target regions in order to facilitate both a speedy and coordinated response. The sooner you return your responses the better. To be able to work on these matters during June before the holidays we ask you to respond no **later than 06 June 2011**. Please respond to both myself on Joakim@lfc.se and Alan@acuityflux.se .

We will then together with the Lead Partner work out a program during the next couple of months based on the agreed to framework at the Riga project meeting. During July and August we will communicate both the program and administrative matters to you all.

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However, when you are planning your trip the best places to travel to are either Gothenburg airport where express buses will take you to Jönköping in 1,5hrs; or to either Copenhagen or Stockholm and then trains from there. It is possible to fly directly to Jönköping via for example Stockholm with Skyways. Please also have a look at their schedules. Low cost airlines such as Ryanair, German Wings and WizzAir also fly to southern Sweden.

The meeting will start in the morning of 20 September and end evening 21 September 2011. Travel days are therefore 19 and 22 September 2011 respectively. These two travel days could also be used for bilateral study visits if you let us know in advance.

Furthermore, on 20-22 September there are two Fairs at Elmia – Distant Heating Fair; and Real-estate Fair ongoing. Therefore, the 22 September could be used also for visiting those Fairs as well as for matchmaking with Swedish companies dealing with Bioenergy and present at the Fairs.

We are looking forward to seeing you here in September and your responses as per these two questionnaires.

Please don't hesitate to contact either me or Alan directly should you have any questions.

Meanwhile, have a great summer and see you soon,

Kind regards,

Joakim Robertsson
Project Manager Bioregions
LTC AB (County of Jönköping)

Questionnaire:

1. Name of the stakeholder and organisation, position/title within the organisation?

2. What about your previous knowledge regarding bio-energy / renewable energies (technical expert, general knowledge, layman)?

3. Have you taken part in a previous event of the project „BioRegions“?

4. Are you aware about the aim of the project "BioRegions", especially for your target region?

5. The regions of the project „BioRegions“ are very individual. Nature, political pre-conditions, bio-energy potentials etc are all very different – why does it make sense for you to visit a „good-practice-project“?

6. What do you expect to "bring home" from visiting the County of Jönköping?
 - a) Information about the structures of co-operation? (Public- Private Partnership) and co-operation between municipalities?

b) Information about precise management of single projects? (Project development, technologies, funding)?

c) Information about the following flagship projects in the region?

d) Information about the County of Jönköping itself (funding, public relations, partner network)?

7. Which additional information do you expect as well?

BioRegions - Regional Networks for the development of a Sustainable Market for Bioenergy in Europe

Description of the regions as part of the contract negotiation process

1. Regional starting point

1.1 Background

Please provide a map and describe the geographical boundaries of the region that will be our target at the project – include basic facts about the population and administrative structures

Administratively Sweden is comprised of 21 counties (*län*), which are in turn divided into 290 local administrative districts or municipalities (*kommun*). Located in the south central part of Sweden, the County of Jönköping (*Jönköpings län*) is subdivided into 13 local municipalities with a combined population of just over 333 000¹ making it the fifth largest county in terms of population. About 30 % of the population lives in rural areas outside of urban centers. With a total area of 10 475 km², the county has a population density of about 32 inhabitants/km² which is higher than the national average of 22/km². Below is a geographical illustrationⁱⁱ.



The county capital is Jönköping, the ninth largest city in Sweden (population roughly 118 000) and also the seat of important administrative organizations; the County Administrative Board (Länstryrelsen i Jönköpings Län), the County Council (Landstinget i Jönköpings Län) and the Regional Development Council of Jönköping County (Regionförbundet Jönköpings Län).

The County Administrative Boardⁱⁱ is a multifaceted government authority that has a unique position in the Swedish democratic system providing a link between the people and the municipal authorities on the one hand and the government, parliament and central authorities on the other. Led by the County Governor, the County Administrative Board works with issues that extend across the whole of society and is charged with a range of tasks, including:

- implementing national objectives
- co-coordinating the different interests of the county
- promoting the development of the county
- establishing regional objectives
- safeguarding the rule of law in every instance

The County Council^{iv} is a democratic organisation run by politicians elected from the most recent council elections that are held once every four years in conjunction with the general elections. One of the largest employers in the county, the primary responsibility of the County Council is to provide health care, medical treatment and dental service for the residents of the county as well as playing an active role in regional development.

The Regional Development Council of Jönköping County^v (RDC) is a relatively newly constituted organisation commissioned to work for sustainable developments and new growth in the region. All 13 municipalities and the County Council are represented in the RDC, which unlike other RDC's, has no operative activities but is concentrated on the issues of growth and development, from analyses and planning through to decision-making and coordination of implementation and activities in connection with development and growth in six strategic areas:

- Living environment and attractiveness
- Communications
- Trade and industry
- Labour market and competence
- International cooperation

- Local plans and programmes

One of the reasons for forming the RDC was to strengthen municipal and regional influence on growth and development issues in the areas for which the RDC is responsible. Consequently, resolutions that formerly would have been made by the County Administrative Board, or in fact the State, are now more closely linked to regional democracy, since they are made by representatives elected to an open, legally competent assembly: the regional board. A regional development programme to 2020 was presented and formerly adopted in 2008^{vi}.

There are a number of other organisations worth highlighting as they are significant to the region and to the project. Two government agencies, the **Swedish Forest Agency**^{vii} and the **Swedish Board of Agriculture**^{viii} are both situated in Jönköping with the latter having recently formed a bioenergy section within the Farm Enterprise and Rural Development Division.

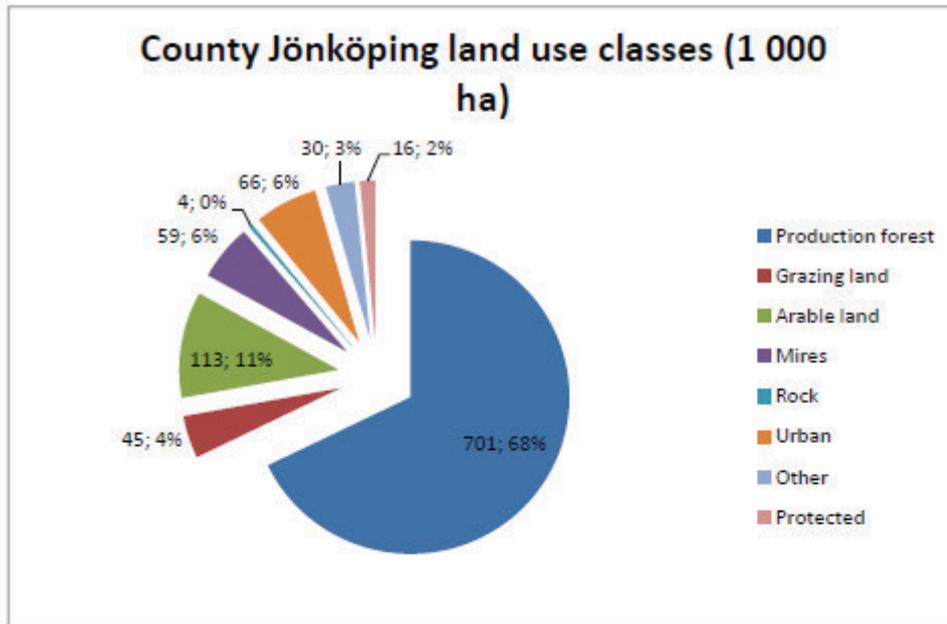
Sweden's largest regional association of sawmills, **Såg i Syd**^x, is also located in the city. The association has about 70 member companies/groups of companies with a combined annual production of some 4.4 million m³ of sawn products (almost 25 % of Sweden's total annual production of sawn products). 17 of the companies are located in the region of which two have own wood pellet production. The **Swedish Federation of Wood and Furniture Industry**^x also has a regional office in Jönköping and the region has also an independent **Chamber of Commerce**^{xi}.

Finally one of Scandinavia's leading trade event organisers, **Elmia AB**^{xii}, is located in Jönköping. This is significant as Elmia organises four different international trade events (within agriculture, forestry, district heating/facility management and bioenergy) of direct relevance to the project.

1.2 Land use

Please provide data about the land use situation (forest coverage, agricultural land, etc)

Of a total surface area of 1 047 500 hectares (ha) about 13 500 ha is water. From the remaining 1 034 000 ha^{xiii} of land about 76 % is forested (production forest and protected) which is significantly higher than the national average of about 56 %.

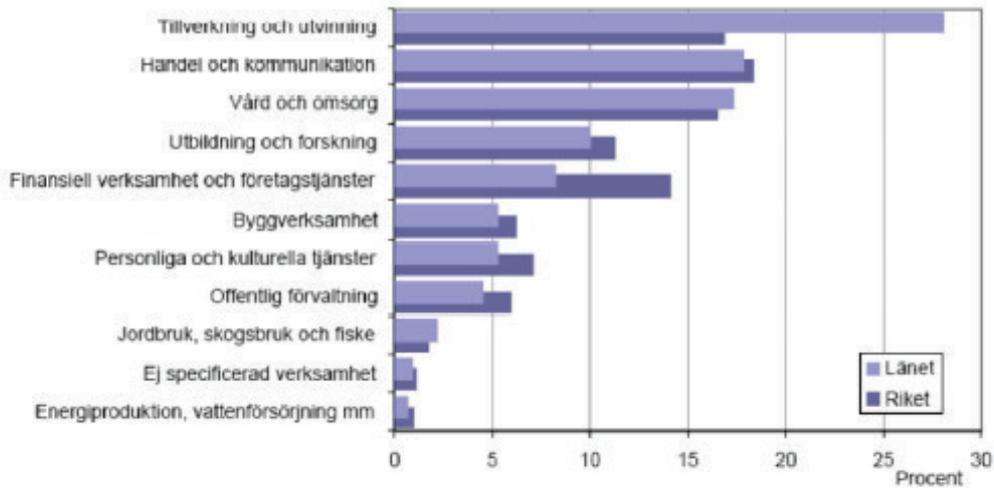


Agricultural land (grazing pastures and arable land) account for about 15 %, again higher than the national average of just over 8 %. Mires (both protected and commercial) on the other hand account for 6 % which is less than the national average of 11 %.

1.3 Economic framework conditions

Please give information about the local economy in the selected regions – describe the main economic activities, provide recent data and compare to the national average

Jönköping County has a geographical position that gives it a uniquely strategic location. Almost equidistant between the three large population centres of Stockholm, Göteborg and Malmö it is where the transport infrastructure intersects making it a dynamic hub for the transportation of goods and people and a logistics growth area. 65 of the 80 urban centres in the region have a railway connection.



Sysselsättningens fördelning (nattbefolkning 20-64 år) 2006⁹

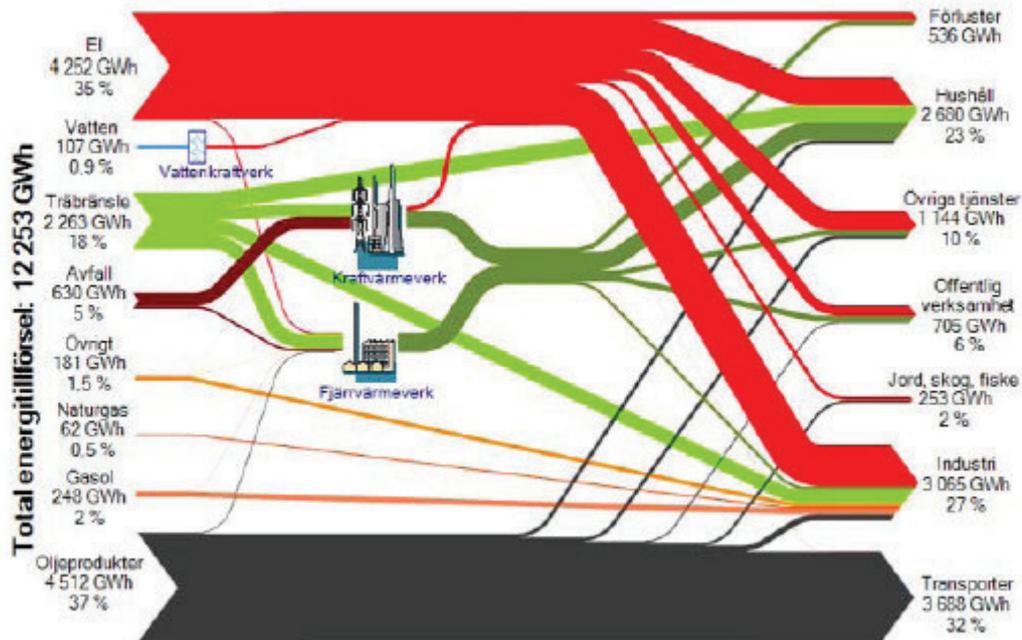
The region has a relatively varied industry sector structure with many SME’s and known for its entrepreneurship. It is one of the most industrialised regions in the country with a vibrant manufacturing industry that employs nearly 1/3 of the region’s labour force, almost double the national average^{xiv}. Wood processing including biomass, furniture manufacturing, light engineering, metalworking, plastics and rubber are all key manufacturing/processing sectors in the region.

1.4 Current energy mix

What energy is used currently for electricity and heating. Are there power plants within the region, or independent power producers (like solar and wind energy installations?). Provide recent data if possible.

The total energy input and usage of just over 12.2 TWh (2007) for the county is illustrated in the Sankey-diagram below^{xv}. This represents about 2.4 % of Sweden’s total energy input. However it is important to note a number of issues:

The regions own production of electricity (supplied to the grid) is very low, currently about 1 % of the electricity used in the region. This electricity comes from different renewable sources including small-scale hydro (60 installations 2008) and wind (9 installations 2008) as well as biomass and municipal waste fired combined heat and power (CHP) plants found in the region.



However the actual production of electricity is higher as a number of industries in the region especially within the pulp, paper and wood processing industries generate and utilise their own electricity using by-products from their own production.

Furthermore at 37 % oil products still account for the largest energy input which is chiefly attributed to the transport sector (32 %) with the reminder used in industry, agriculture and as reserve/start-up fuel for heating. Usage of biofuels such as E85, low blend, biodiesel and biogas in the transport sector is not shown but on a national basis made up about 5 %.

Of particular noteworthiness in the context of the project is the fact that the use of fossil fuels (coal, heating oil, lignite, coke, natural gas) has almost entirely been phased out for space heating (commercial, industrial and domestic) being replaced mainly by biomass as shown in the examples of biomass projects. Currently only 2 of the 13 municipalities do not have district heating (DH) networks. Biomass is the dominant fuel for DH plants in the other municipalities ranging from 82 % to 100 % share whereas two, Eksjö and Jönköping, use also municipal solid waste as fuel.

1.5 Example of existing projects

Highlight biomass projects, existing or under development

There is a whole range of biomass and biomass related projects such as logistics, upgrading, processing, distribution, conversions recently completed or in progress throughout the region. For instance there are three larger wood pelleting plants operating in the region.

To illustrate with some examples of larger projects typically commissioned to accommodate expansion of existing district heating (DH) networks.

Project	Type	Municipality	Organisation	Year
Biomass/municipal solid waste	CHP (DH) plant	Jönköping	Public	2006
Wood pellets	Mobile DH plant	Jönköping	Public	2006
Biomass/municipal waste	CHP (DH) plant	Eksjö	Public	2008
Biomass	DH plant	Nässjö	Private	2008
Biomass	CHP/gasification demonstration plant	Värnamo	Public	2004
Biomass	Railway terminal	Sävsjö	Private	2008
Biomass and wood pellets	DH plant (fuel conversion)	Mullsjö	Public	2009

Additionally it is of importance to note that solid biomass is not only produced, processed and used for the heat and/or power in the region, landfill and biogas is also used. Biogas is produced mainly from waste water treatment plants and upgraded for use as vehicle fuel. For example the city of Jönköping has an upgrading facility and recently installed two more refuelling points in the city as demand increases. Additional biogas projects in Sävsjö and Gislaved are looking at using agricultural feedstock.

1.6 Political commitment

Please provide any indication available that the local or regional authorities support the biomass use for energetic purposes

As previously mentioned in 1.1 the **Regional Development Council (RDC)** have been commissioned by the Government to write a regional development programme. The programme serves as a basis for the Government's planning and initiatives, but also for the region's own decision-makers. It specifies what the county must do over the next few decades to improve growth, competitiveness, attractiveness and employment as well as stimulate cross-border cooperation in various forms.

The regional development programme is divided into five programme areas: Living environment and attractiveness, Communications, Trade and industry, Labour market and competence, and International cooperation. Each area has its specific development potential and required action.

Regional efforts will revolve around such action over the coming years up to 2020.

Jönköping County's development programme is broad and expansive, it emphasises the human aspect and the importance of the social environment for regional development. And it's a programme that requires participation and commitment at all levels and within all sectors, from both individual local residents and various private and public players.

The **County Administrative Board** very recently drafted a document entitled "Climate – and Energy Strategy with New Climate Objectives for the County of Jönköping" based on the new national 2020 climate and energy objectives. This draft document is currently on public review and contains ambitious short, medium and long-term objectives for the county in terms of becoming net "exporters" of renewable energy while reducing the carbon footprint. This is to be achieved through increased energy efficiency and replacing fossil fuels in all sectors of society with renewable energy sources. Biomass from forestry and agriculture are two areas identified which can be further developed along with other renewables such as wind and solar.

2. Project relevance

2.1 Relevant local initiatives

Please mention any initiatives in the region (e.g energy plans, land use plans, networks etc) that might be relevant to our project

Each of the 13 municipalities has own local climate, environment and energy policies and strategies based on their particular circumstances in place. Additionally three cities in the region, Jönköping, Eksjö and Gislaved, have signed the "Covenant of Mayors"^{xvi}. By doing so they have formally committed themselves to go beyond the CO₂ reduction target as set out in the in the EU Climate Action and Renewable Energy Package, through the implementation of their Sustainable Energy Action Plan.

It should also be mentioned that apart from solid biomass for large scale heat and/or power production biomass such as firewood or pellets is widely used for heating in single family houses especially in the rural areas. Local campaigns targeting consumers in their choice of heating system take place on an ongoing basis and some have permanent exhibits such as the Energicentrum^{xvii} at the A6 shopping centre in Jönköping.

2.2 Connection of the project to the local initiatives

Show how the project activities will be integrated to the existing initiatives and explain what the added value will be

The project ties well into the overall regional and local climate and energy ambitions and targets as set out by the municipalities and regional authorities. Participating as a best practice region vividly accentuates the importance and validity of this work to the citizens of the region. Furthermore it also opens the possibility of new business opportunities as a downstream result of being such a best practice region. In short the project helps the region to realise the overall aims of the regional development plan; to stimulate growth, competitiveness, attractiveness, employment and cross border cooperation. The environmental, social and economic sustainable use of biomass for energy from the region is one key to achieving these ambitions.

ⁱ As of 31 December 2007 adapted from SCB Statistics Sweden, www.scb.se

ⁱⁱ Taken from the RUP English summary "A Future of Opportunities – Regional development programme up to 2020, Jönköping County", <http://www.regionjonkoping.se/Templates/Article1.aspx?PageID=ea0299d7-2b05-49a4-9953-94c82172ec1b>

ⁱⁱⁱ <http://www.lansstyrelsen.se/jonkoping>

^{iv} <http://www.lj.se/>

^v <http://www.regionjonkoping.se/>

^{vi} Regionalt utvecklings program (RUP) see above

^{vii} <http://www.skogsstyrelsen.se/>

^{viii} <http://www.jordbruksverket.se/>

^{ix} <http://www.sagisyd.se/>

^x <http://www.tmf.se/>

^{xi} <http://www.jonkoping.cci.se/>

^{xii} <http://www.elmia.se/>

^{xiii} Figures adapted from the Swedish Forest Agency statistical yearbook 2009, <http://www.skogsstyrelsen.se/episerver4/templates/SNormalPage.aspx?id=16713>

^{xiv} Taken from draft document "Klimat- och eneregistrategi lägesrapport 31 okt2008"
http://www.lansstyrelsen.se/jonkoping/amnen/Miljo/Vaxthuseffekten_ger_klimatforandringar/klimat_energistrategi.htm

^{xv} Taken from draft document "Klimat- och eneregistrategi med nya klimatmål för Jönköpings län"
http://www.lansstyrelsen.se/jonkoping/amnen/Miljo/Vaxthuseffekten_ger_klimatforandringar/klimat_energistrategi.htm

^{xvi} http://www.eumayors.eu/covenant_cities/list_en.htm?cc=se

^{xvii} <http://www.energicentrum.se/>

Annex 2 Topic Suggestion Feedback Questionnaire



Organisation	Brief description	Interested? Yes/No	Your organisation/ Comments and why you wish to visit this place/purpose? (if a long answer write on a separate note.
<p>1) Swedish Forest Agency</p> <p>www.skogsstyrelsen.se/</p>	<p>National agency under the Ministry of Rural Affairs in charge of forest-related issues. Swedish forest policy places equal emphasis on two core objectives: production goals and environmental goals. It is the administrative body in charge of implementing the forest policy as well as providing advice and information, routine controls to monitor the compliance of statutory requirements and administering national and EU grants to forest owners. The SFA cooperates with representatives from the forest industries and environmental sector towards the goals of economically and ecologically sustainable forestry. Sweden's forests are a national asset and resource and the general public is strongly engaged in issues related to forests and forestry.</p>		<p>1: Org/Company?</p> <p>2. Comments and Reason</p>



<p>2) Board of Agriculture</p> <p>www.jordbruksverket.se/</p>	<p>Government agency in the agro-food sector, responsible for all matters related to agriculture and horticulture which includes monitoring and analysis of developments within the sector, implementing national and EU policies, crisis management as well as administrating rural development support programmes.</p>		<p>1: Org/Company?</p> <p>2. Comments and Reason</p>
<p>Jönköping Energi AB</p> <p>www.jonkopingenergi.se/</p>	<p>Wholly owned municipal energy utility supplying heat, power, cooling and vehicle grade biogas to the city of Jönköping. Several production units of different sizes and fuels (wood pellets, waste, biomass etc).</p>		<p>1: Org/Company?</p> <p>2. Comments and Reason</p>
<p>Energicentrum A6</p> <p>www.energicentrum.se/</p>	<p>An energy information dissemination centre located at one of Sweden's largest shopping centres, A6. A joint project by several municipalities the purpose is to provide the general public with information and impartial advice on renewable energy, home heating and energy saving issues. A 500 sq-m permanent expo displaying solutions and information is also located there.</p>		<p>1: Org/Company?</p> <p>2. Comments and Reason</p>
<p>LRF Jkpg/Lantbrukarna i Rydaholm</p> <p>www.lrf.se/</p>	<p>LRF, Federation of Swedish Farmers, is an independent membership financed organisation with the objective to promote the development of the green industry and its farmers of agricultural and forest land, growers</p>		<p>1: Org/Company?</p> <p>2. Comments and Reason</p>



	and entrepreneurs so that they can fulfil their vision of growth, profitability and power of attraction. LRF in Jönköping have several projects of interest to BioRegions. Farmers in Rydaholm have developed cooperation to grow energy crops such as hemp and canary reed grass, set up small scale pelleting operations, set up energy supply contracts (grain) for the local church etc.		
Finnvedensbostäder www.oxtorget.se/	Passive housing estate in Värnamo		1: Org/Company? 2. Comments and Reason
County Administrative Board www.lansstyrelsen.se/jonkoping/	Led by the County Governor, the County Administrative Board works with issues that extend across the whole of society providing a link between the people and the municipal authorities on the one hand and the government, parliament and central authorities on the other. It is charged with a range of tasks, including implementing national objectives (incl. climate and energy), co-coordinating the different interests of the county, promoting the development of the county, establishing regional objectives and safeguarding the rule of law in every instance.		1: Org/Company? 2. Comments and Reason
Regional Development Council	Regional Development Council of Jönköping County (RDC) is a relatively newly constituted organisation commissioned to work for sustainable		1: Org/Company? 2. Comments and Reason



www.regionjonkoping.se/	developments and new growth in the region. All 13 municipalities and the County Council are represented in the RDC, which unlike other RDC's, has no operative activities but is concentrated on the issues of growth and development, from analyses and planning through to decision-making and coordination of implementation and activities in connection with development and growth in six strategic areas, living environment and attractiveness, communications, trade and industry, labour market and competence, international cooperation, local plans and programmes. The RDC has developed a Regional Development Plan which is currently being upgraded to a Regional Development Strategy.		
Jönköping County Council www.lj.se/Infopage.isf?nodeId=35237 http://www.lj.se/index.jsf?nodeId=36081&nodeType=13	One of the largest employers in the county, the primary responsibility of the County Council is to provide health care, medical treatment and dental service for the residents of the county as well as playing an active role in regional development. Two colleges Tenhult Agricultural college and Stora Segerstad Agriculture and Forestry College are under the County Council. The Tenhult college uses wood pellets for heating.		1: Org/Company? 2. Comments and Reason
Municipality of Jönköping www.jonkoping.se/	Biogas from waste water treatments plants for combined heat and power production (Huskvarna) and vehicle grade biogas (Simsholmen) with organic food waste separation at the Torsvik waste-to-energy plant.		1: Org/Company? 2. Comments and Reason



www.jonkopingenergi.se/web/Matavfall_bilir_biogas.aspx			
<p>Nordic District Heating Fair</p> <p>www.elmia.se/en/District-Heating-Fair/</p>	<p>Four parallel trade events; Nordic District Heating Fair, Elmia Fastighet (property & facilities management), Elmia Waste & Recycling and Elmia Park & Golf. Together they are form a major meeting-place for anyone from the property management, energy systems and waste management sectors.</p>		<p>1: Org/Company?</p> <p>2. Comments and Reason</p>

Annex 3 Tentative Programme

Tentative programme for BioRegions best practice visit to Jönköping, Sweden 20-22 September 2011, vers.3, 21 July 2011

	Monday 19 th September	Tuesday 20 th September	Wednesday 21 st September	Thursday 22 nd September
07.45	 	Transfer to Jönköping	Transfer to Mullsjö	
08.00		Who is who – a quick 30 second round the table introduction by participants		
08.15		Welcome address	Visit 5	
08.30		“Putting Sweden and Jönköping into context – or why does it look the way it does?” - background to the Swedish governing system, from national policy creation to regional and municipal implementation, civil service roles and responsibilities.	Mullsjö Energi, Mullsjö	
08.45		A word on municipality owned companies contra private Q&A <i>Regional Development Council et al</i>	A small scale biomass & peat fired district heating network Q&A	
09.00		Short history and background to Swedish energy mix and policy The Jönköping region in energy terms, current resources, usage and production <i>County Administrative Board et al</i>	Transfer in Mullsjö Visit 6 IRIS Development Centre, Mullsjö A rehab centre that recently converted from oil fired heating to biomass and solar Q&A	Sum-up Reflections from the visits, any outstanding issues/queries and programme wrap-up
10.00		Coffee break	Coffee break	Coffee break
		The future - from Brussels via Stockholm to Jönköping, transferring EU202020 and national goals into a regional climate and energy strategy.	Transfer to Jönköping	Reflections from the visits, any outstanding issues/queries and

Tentative programme for BioRegions best practice visit to Jönköping, Sweden 20-22 September 2011, vers.3, 21 July 2011

		Q&A <i>County Administrative Board et al</i>		programme wrap-up Closing address
11.00		Transfer to Torsvik	Visit 7 Jönköping Biogas, Jönköping	Check-out
		Visit 1 Jönköping Energi, Torsvik A waste to energy CHP using MSW, C&D and biomass to supply heat and power. Separation of food waste for biogas production.	A municipal waste water treatment plant that produces upgraded biogas for vehicles. Recently rebuilt to include a parallel AD unit for food and other organic waste for biogas and organic fertiliser Q&A	Optional programme Elmia District Heating Fair Bilateral programmes Meeting specific companies
12.00			Transfer in Jönköping	
		Q&A and lunch	Visit 8 Energicentrum A6, Jönköping This public energy awareness and information dissemination centre which hosts a permanent expo is ideally located adjacent to one of the country's largest shopping centres	
13.00		Transfer to Vaggeryd	Q&A and lunch	
		Visit 2 Neova, Vaggeryd Biomass procurement, wood pellet production and distribution Q&A	Transfer to Tenhult	
14.00	Possible to organise/suggest separate bilateral programme for those who arrive early		Tenhults Agricultural College, Tenhult A secondary and post-secondary land based industries	

Tentative programme for BioRegions best practice visit to Jönköping, Sweden 20-22 September 2011, vers.3, 21 July 2011

		Transfer to Värnamo	(agriculture, animal husbandry, equestrian studies) school run by Jönköping County Council. The heating system has been converted to use wood pellets and they are currently looking into own biogas production. Q&A
15.00	Check in open		Transfer to Elmia
		Visit 3 Finnveden Bostäder, Värnamo Passive housing programme in the town centre Q&A	Leveraging bioenergy - the case for establishing "BioRegion networks"
16.00		Transfer to Rydaholm	Panel presentation of thoughts, experiences and expert insights from invited representatives from the Swedish Bioenergy Association, Swedish District Heating Association, Energy Agency SouthEast, Swedish Farmers Association Q&A
		Visit 4 Farmer heat supply cooperative Farmers that cooperate to grow, harvest and process energy crops in order to set up energy supply contracts with local buyers such as churches in the locality Q&A	Elmia - providing bioenergy with business platforms Networking mingle with refreshments
17.00			
18.00		Transfer to the hotel	Free-time

Tentative programme for BioRegions best practice visit to Jönköping, Sweden 20-22 September 2011, vers.3, 21 July 2011

19.00			
		Free-time	
20.00 - late		Sum up and grub up – an informal and weather permitting hands-on dinner	Optional get-together in Jönköping

Annex 4: List of Participants

Number	Nationality	Name	Background
1	Bulgaria	Vladimir Valkov	Director RES, Energy Agency of Plovdiv
2	Bulgaria	Tsenko Tsenov	Head of Dep. State Forest Agency
3	Bulgaria	Stoyan Chorbadjiski	Dep. Mayor, Municipality of Brezovo
4	Bulgaria	Valentin Chambov	Head Expert, State Forest Agency
5	Czech Republic	Tomas Perutka	Energy Agency Zlin Region
6	Czech Republic	Petr Stranak	Deputy Executive Head Kloboucka Lesni Ltd
7	Czech Republic	Oldrich Kozacek	Director BTH Slavcin Ltd
8	Czech Republic	Jaroslav Sery	Director Brumov-Bylnice Services
9	France	Bettina Maeck Chabourlin	SAT, BMC, Trieves
10	France	Jean Bernard Bellier	Mayor, Municipality of St. Michel-les-Portes, Director Wood Trading Centre
11	France	Robert Cuchet	Mayor, Municipality of le Percy
12	Ireland	Patrick Daly	Westmeath Community Development
13	Ireland	Joe Potter	CEO, Westmeath Community Development
14	Ireland	Robert Oglee	Chair Emerging local Forestry/Farmer
15	Ireland	Colim Arthur	Energy Sub Committe/Local Councillor
16	Latvia	Ilze Dzene	Project manager Ekodoma
17	Latvia	Agris Blumers	Executive Director Limbaži Municipality
18	Latvia	Girts Ieleja	Head of Dep. Limbaži Municipality
19	Latvia	Guntis Karklins	Chief Architect, Salacgriva Municipality
20	Latvia	Juris Zalitis	Head of the Salacgriva tourism information centre
21	Sweden	Joakim Robertsson	LTC/Regionförbundet
22	Sweden	Alan Sherrard	LTC/Regionförbundet
23	Germany	Marian Cabanero	Lead Partner

Annex 5: Final Programme

Tentative programme for BioRegions best practice visit to Jönköping, Sweden 20-22 September 2011, vers.4, 15 August 2011

	Monday 19 th September	Tuesday 20 th September	Wednesday 21 st September	Thursday 22 nd September
07.45	 	Transfer to Jönköping	Transfer to Mullsjö	
08.00		Who is who – a quick 30 second round the table introduction by participants		
08.15		Welcome address	Visit 5	
08.30		“Putting Sweden and Jönköping into context – or why does it look the way it does?” - background to the Swedish governing system, from national policy creation to regional and municipal implementation, civil service roles and responsibilities.	Mullsjö Energi, Mullsjö	
08.45		A word on municipality owned companies contra private Q&A <i>Regional Development Council et al</i>	A small scale biomass & peat fired district heating network Q&A	
09.00		Short history and background to Swedish energy mix and policy The Jönköping region in energy terms, current resources, usage and production <i>County Administrative Board et al</i>	Transfer in Mullsjö Visit 6 IRIS Development Centre, Mullsjö A rehab centre that recently converted from oil fired heating to biomass and solar Q&A	Sum-up Reflections from the visits, any outstanding issues/queries and programme wrap-up
10.00		Coffee break The future - from Brussels via Stockholm to Jönköping,	Coffee break & transfer to Sandhem	Coffee break Reflections from the visits,

Tentative programme for BioRegions best practice visit to Jönköping, Sweden 20-22 September 2011, vers.4, 15 August 2011

		transferring EU202020 and national goals into a regional climate and energy strategy. <i>County Administrative Board et al</i>	Visit 7 Biomass boiler, Sandhem Q&A	any outstanding issues/queries and programme wrap-up Closing address
11.00		Crossing administrative boundaries – experiences from neighbouring bioenergy cluster and networks experience ioenergy network <i>Energy Agency SouthEast</i> Q&A	Transfer to Jönköping	Check-out
12.00		Transfer to Hok	Visit 8 Energicentrum A6, Jönköping This public energy awareness and information dissemination centre which hosts a permanent expo is ideally located adjacent to one of the country's largest shopping centres Lunch	Optional programme Elmia District Heating Fair Bilateral programmes Meeting specific companies
13.00		Visit 1 Vida Energi, Hok A wood pelleting and animal bedding plant owned by the private forest products industry VIDA Group. Q&A	Transfer to Elmiat Visit 8	
		Transfer to Stockaryd via Vrigstad, packed lunch during transfer	Nordic District Heating, Elmia	

Tentative programme for BioRegions best practice visit to Jönköping, Sweden 20-22 September 2011, vers.4, 15 August 2011

14.00	Possible to organise/suggest separate bilateral programme for those who arrive early	Visit 2 Stockaryds Terminal, Stockaryd A newly opened railway terminal to facilitate rail transport and logistics for biomass, pulpwood, sawlogs and other bulk materials between continental Europe and Sweden. Clients include forest industries, recycling industries and energy companies. Q&A	
		Transfer to Rydaholm	
15.00	Check in open		
16.00		Visit 3 Rydaholm church, Rydaholm The church is heated using biomass (spoilt grain mainly oats) supplied by local farmers Q&A	Leveraging bioenergy - the case for establishing "BioRegion networks" Panel presentation of thoughts, experiences and expert insights from invited representatives from the Swedish Bioenergy Association, Swedish District Heating Association, Energy Agency SouthEast, Swedish Farmers Association Q&A
		Transfer in Rydaholm	
		Visit 4 Holmebo Farm, Holmebo A farmers who produces briquettes from own grown hemp and canary reed grass. Q&A	
17.00		Transfer to Rudenstam	
			Elmia - providing bioenergy with business platforms

Tentative programme for BioRegions best practice visit to Jönköping, Sweden 20-22 September 2011, vers.4, 15 August 2011

18.00		Networking mingle with refreshments	
		Free-time	
19.00		Free-time	
		Sum up and grub up – an informal and weather permitting hands-on dinner	
20.00 - late			Optional get-together in Jönköping

Annex 6: Post-visit Questionnaire



Visit to the Jönköping region, Sweden 20-21 September 2011

Evaluation questionnaire:

Dear Stakeholder,

It was a great pleasure to have you over to visit, to meet you and learn about your regions, your experiences and challenges. Following your recent and intensive "best practice" visit to the Jönköping region in Sweden, we would like to ask you a few questions about your experiences, impressions and more importantly how the trip is beneficial to your continued work within BioRegions.

1. How would you rate your general overall impression of your trip?

- I liked it very much
- I liked it, but.....
- It was okay, but.....
- It was not okay because.....

2. Was the trip able to fulfil your expectations that you expressed beforehand?

a) Regarding cooperation of public bodies

- Yes, **better** than had I expected
- Yes, it fulfilled **all** my expectations
- It matched **most** of my expectations
- It matched only a **few** of my expectations
- No **none** of my expectations were met
- I had not expressed any specific expectations

b) Regarding getting an insight into the planning and realisation of various projects and applications (i.e. study visits)?

- Yes, **better** than had I expected
- Yes, it fulfilled **all** my expectations
- It matched **most** of my expectations
- It matched only a **few** of my expectations
- No **none** of my expectations were met
- I had not expressed any specific expectations

c) Regarding the presentation and application of various bioenergy technologies shown/visited?

- Yes, **better** than had I expected

1



- Yes, it fulfilled **all** my expectations
- It matched **most** of my expectations
- It matched only a **few** of my expectations
- No **none** of my expectations were met
- I had not expressed any specific expectations

d) Regarding networking and making new contacts?

- Yes, **better** than had I expected
- Yes, it fulfilled **all** my expectations
- It matched **most** of my expectations
- It matched only a **few** of my expectations
- No **none** of my expectations were met
- I had not expressed any specific expectations

e) Regarding what you wanted to "take home" with you?

- Yes, **better** than had I expected
- Yes, it fulfilled **all** my expectations
- It matched **most** of my expectations
- It matched only a **few** of my expectations
- No **none** of my expectations were met
- I had not expressed any specific expectations

3. What/which parts of the programme did you find most relevant for your specific situation? Please rate accordingly where 5 is "highly relevant" and 1 is "not relevant at all". Leave blank if you did not participate.

(Visit Tuvbo farm)	5	4	3	2	1
Day 1					
Presentation Jönköping Region	5	4	3	2	1
Presentation Energy Agency South East	5	4	3	2	1
Visit Stockayds Terminalen	5	4	3	2	1
Visit Vida Pellets	5	4	3	2	1
Visit Rydaholms church	5	4	3	2	1
Visit Holmebo farm	5	4	3	2	1
Day 2					
Visit IRIS rehab centre	5	4	3	2	1
Visit Mullsjö Energi	5	4	3	2	1
Visit Sandhem school	5	4	3	2	1
Visit A6 Energicentrum	5	4	3	2	1
Visit Nordic District Heating event	5	4	3	2	1
Presentation Swedish Bioenergy Association	5	4	3	2	1
Presentation Elmia	5	4	3	2	1



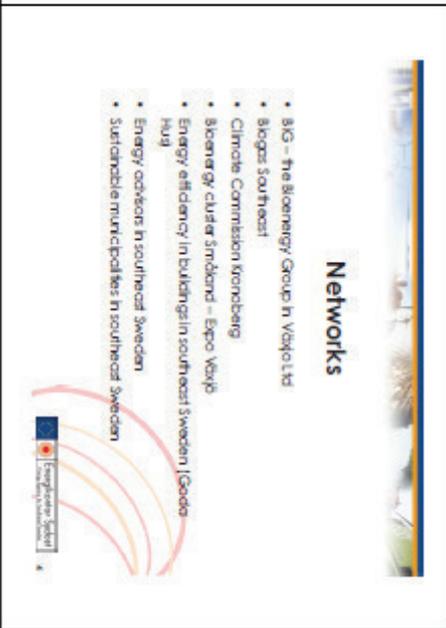
4. What if any of the shown/visited projects and activities could be implemented or adapted for implementation in your own target region? Please specify!

5. What was your impression about the practical arrangements (transport, accommodation, food etc)?

6. What could/should we do differently the next time make your trip an even more interesting and pleasant experience?

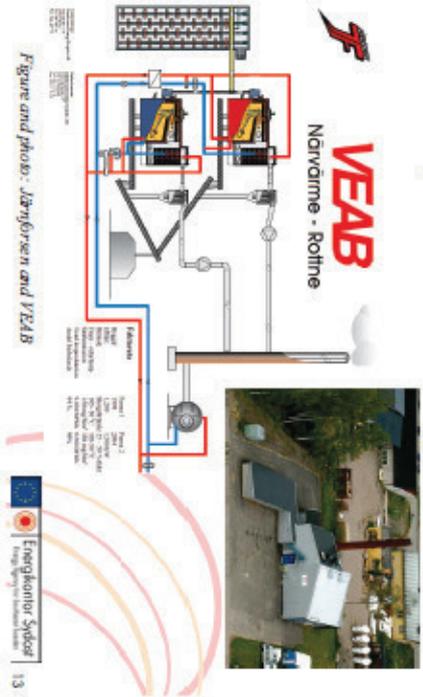
Thank you for your feedback.

Annex 7: Presentations

 <p>Energy Agency for Southeast Sweden (ESS)</p> <p>Eva Gustafsson Jönköping, 2011-09-20</p> 	 <p>About ESS</p> <ul style="list-style-type: none"> • Public non profit company founded in 1999. • Owned by municipalities and regional councils in the counties of Kalmar, Blekinge and Kronoberg. • Mainly financed by projects (>90 %). • Main aim is to increase energy efficiency and supply of renewable energy. • 3 divisions: buildings (including renewable energy), transports and learning and behaviour. 
 <p>Working method</p> <ul style="list-style-type: none"> • EU, national and regional projects • Creating and sustaining networks • Triple helix approach <ul style="list-style-type: none"> – Umeåus University – Public sector – Private sector – Energy Agency for Southeast Sweden is an important actor in the region! 	 <p>Networks</p> <ul style="list-style-type: none"> • BIG – the Bioenergy Group in Växjö Ltd • Biogas Southeast • Climate Commission Kronoberg • Bioenergy cluster Småland – Eppa Växjö Hus • Energy efficiency in buildings in southeast Sweden (Geoda) • Energy co-actors in southeast Sweden • Sustainable municipalities in southeast Sweden 
 <p>BIG – the Bioenergy Group in Växjö Ltd</p> <ul style="list-style-type: none"> • Owned by VEA, E.ON Värme Sverige AB, Hetsch Biomagnetik AB, Jönköpings Energisystem AB and Genentij • AS companies in the energy sector. • Cooperation through a technical committee with Umeåus University, Energy Agency for Southeast Sweden and other public and private companies. • Aim <ul style="list-style-type: none"> – To increase the use of bioenergy to decrease the emission of CO₂ – To be a national link between public sector, private sector and university – To develop the bioenergy sector through R&D and regional work – To support R&D for the supply, logistics and upgrading of biomass 	 <p>Biogas Southeast</p> <ul style="list-style-type: none"> • Biogas Southeast is a regional network with members from the whole biogas chain from producers to end users. • The main aim is to increase the production of biogas in the region, mainly for transport purposes. • A special focus on biogas production from farms. • Working with a regional strategy for biogas. • www.biogas sydost.se 



Nearby district heating in Rotne



Current bioenergy projects in ESS

- BIO-EN-AREA (www.bioenarea.eu)
 - RBBD
 - POLI-BIOMASS
 - BAN
- Forest (www.forestprogramme.com)
- Agriforenergy2 (www.agriforenergy.com)
- Bio-Methane Regions (www.bio-methaneregions.eu)



Contact information



Eva Gustafsson
 Energikontor Sydost AB
 Framtidsvägen 10A
 351 96 Växjö, Sweden
 eva.gustafsson@energikontorsydost.se
 +46-709-21 60 53





Resources

Total land area ca 41 million ha

- 23 million ha forest
- 3½ million ha arable
- 4½ million ha mires

Population just over 9 million

- ~75 % live in the southern 1/3
- low pop. density ~ 22 per km²

Five temperature/climate zones

- continental European to Arctic
- long cold (sub-zero °C) winters, short hot & dry summers

No own fossil resources

- Reliance on oil, coal & natural gas imports



4

Intelligent Energy Europe



Regional Networks for the development of a Sustainable Market for Bioenergy in Europe

Intelligent Energy Europe

The Jönköping Region
– resources
markets, solutions,
supply chains

BioRegions meeting
20th September 2011

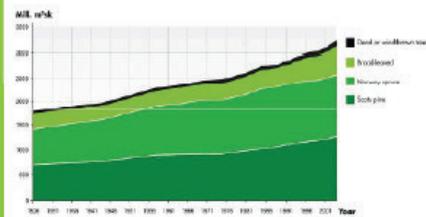
Alan Sherrard, Sweden

www.bioregions.eu



Resources

Trend for total standing volume since 1920, all land-use ¹



¹ BIO: FOR FLOWERS, REDUCED FLOWERS, AREA, WIND AND WATER SURFACES. INTENSIVE FOREST MANAGEMENT WITH HIGHLY EFFICIENT LOGGING TO SOURCE: NATURE BOARD OF ENERGY

5

Intelligent Energy Europe



Disposition

Sweden into context

- Resources
- Energy
- (G)Local bioenergy markets
- Supply & value chains
- Some key drivers
- Regional “case”



2

Intelligent Energy Europe

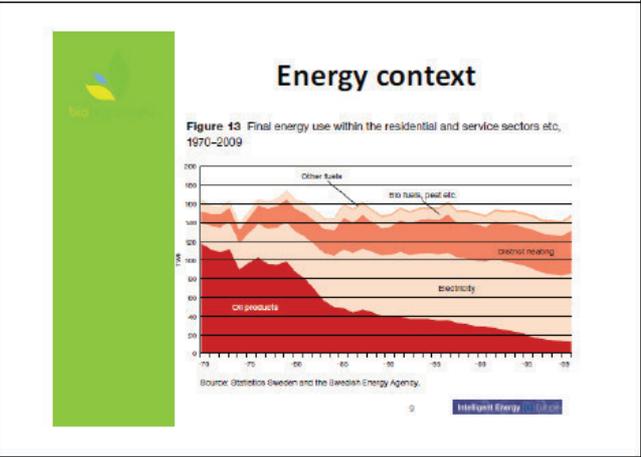
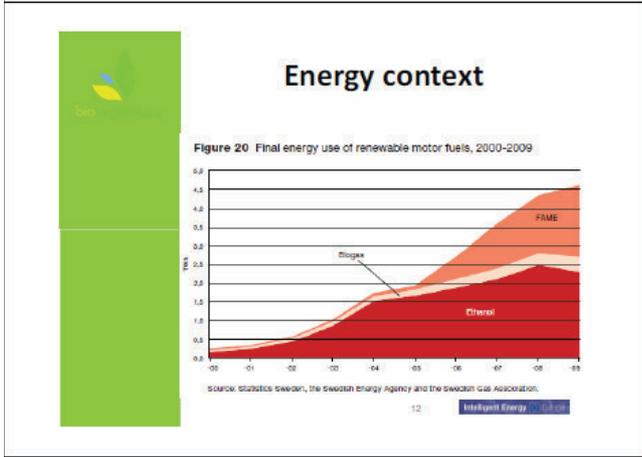
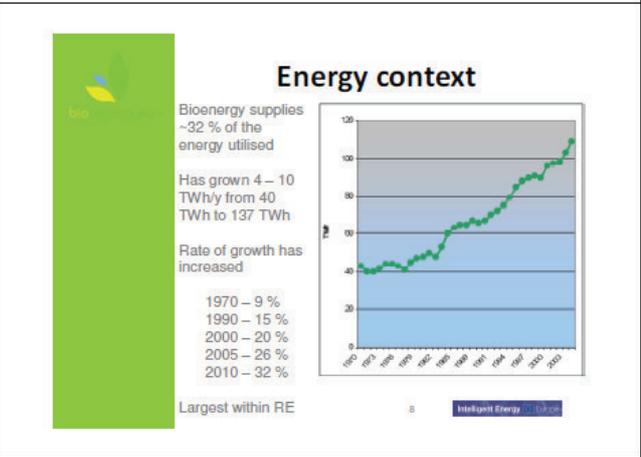
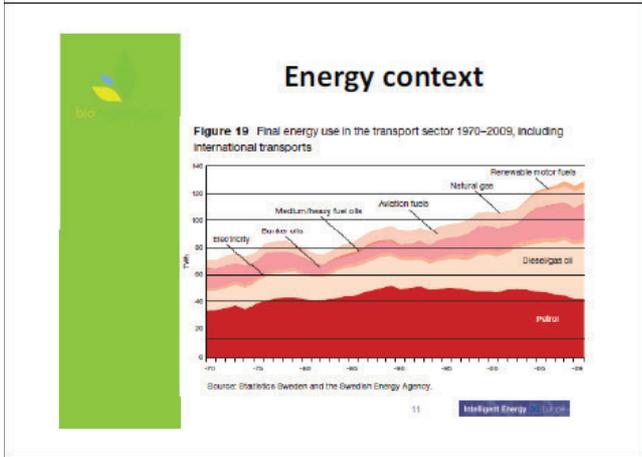
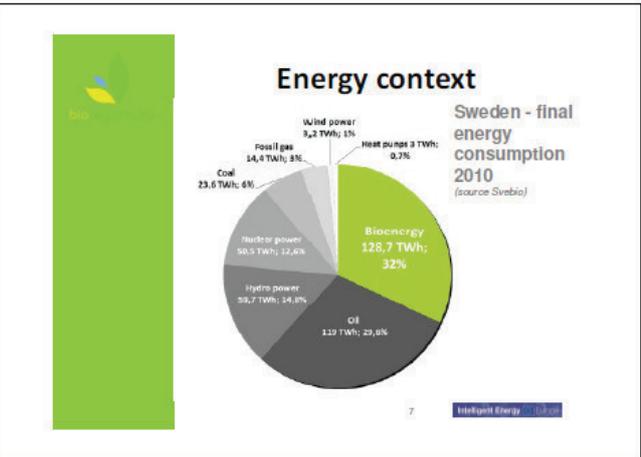
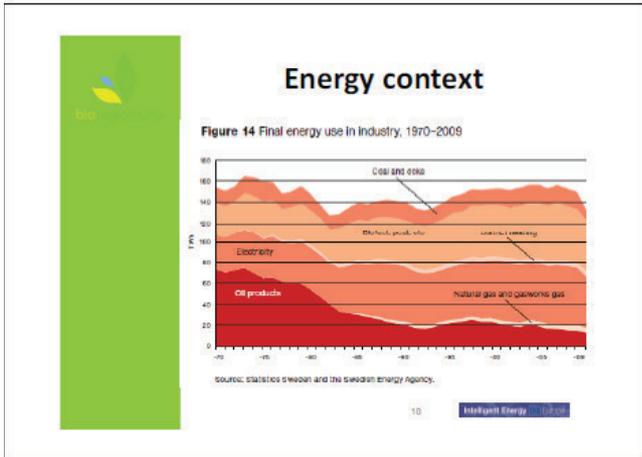


By the way



3

Intelligent Energy Europe





Key drivers

Incentives too...

- **Green Electricity certs.** - market-based support system to aid expansion of renewable power production incl. peat
- **Grants** – were available for conversion of residential oil fired or direct electric heating systems to district heating, biomass, geothermal or solar & to filling stations to provide a renewable fuel alternative to motorists that required investment in other refueling technology i.e. biogas
- **Tax exemption** - 5 year vehicle tax for new "Clean vehicles"
- **Subsidy** - currently available for PV installations to stimulate commercial development



Key drivers

Table 3 General energy and environmental taxes from 1st January 2010, excluding VAT

	Energy tax	CO ₂ tax	Sulphur tax	Total tax	Tax break/tonne
Fuels					
Gas oil, SEK/Mt (0.05 % sulphur)	791	9 815	-	9 604	36,2
Heavy fuel oil no. 5, SEK/Mt (0.4 % sulphur)	791	9 815	100	9 912	36,9
Coal, SEK/tonne (0.5 % sulphur)	390	2 632	150	3 172	41,1
LPG, SEK/tonne	188	3 195	-	3 383	36,0
Natural gas, SEK/1000 m ³	299	2 298	-	2 512	32,8
Crude oil oil, SEK/Mt	9 805	-	-	9 804	36,8
Peat, SEK/tonne, 40 % moisture content (0.3 % sulphur)	-	-	50	50	1,8
Domestic waste, SEK/tonne of fossil carbon*	180	9 805	-	9 990	36,1
Motor fuels					
Petrol, unleaded, environmental class 1, SEK/l	3,06	0,44	-	3,50	60,3
Diesel fuel, environmental class 1, SEK/l	1,85	0,21	-	2,06	45,6
Natural gas for trucks, SEK/Mt	-	1,38	-	1,38	12,3
LPG, SEK/Mt	-	1,97	-	1,97	12,1
Electricity use					
Electricity, northern Sweden, SEK/MWh	15,0	-	-	15,0	10,0
Electricity, rest of Sweden, SEK/MWh	35,0	-	-	35,0	24,2
Industry					
Electricity use, industrial processes, SEK/MWh	0,5	-	-	0,5	0,5

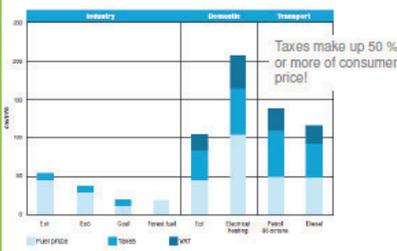
Source: Swedish Tax Board, additional processing by the Swedish Energy Agency.

* The proportion of fossil carbon in domestic waste is assumed to be 10.4 % by weight.



Key drivers

Figure 3 Total energy prices for various customer categories, 2009



Source: SP, Statistics Sweden and Swedish Tax Board.

NOTE: Prices for industry do not include all vehicle discounts.



Key drivers

However...

- Heat & electricity taxed differently, power production exempt from energy & CO₂ tax

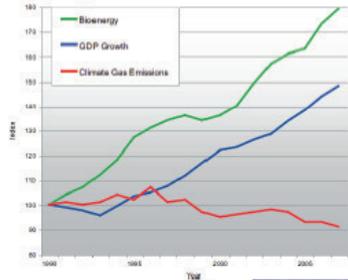
- Refuse (as fuel) - energy & CO₂ tax on fossil component

- Generally biomass fuels & peat used for power production are tax-free, but marketable heat produced in combined heat and power is taxed in the same way as in industry



Key drivers

Decoupling



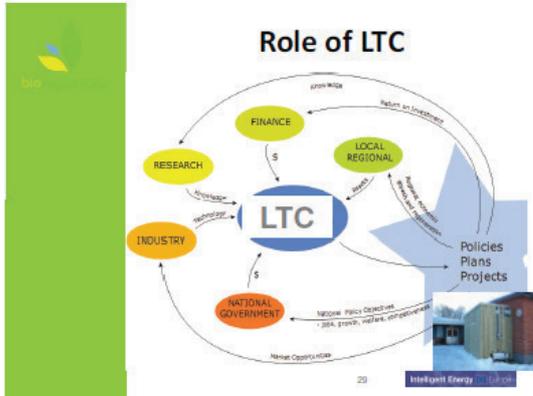
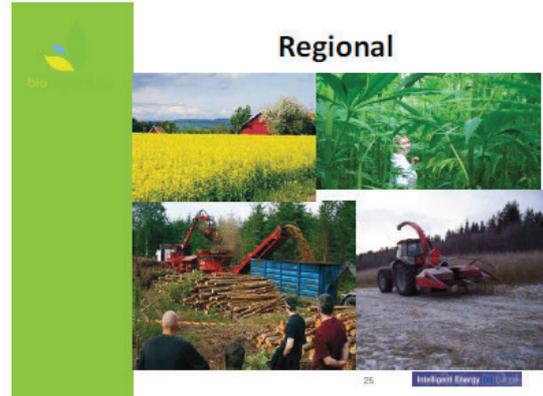
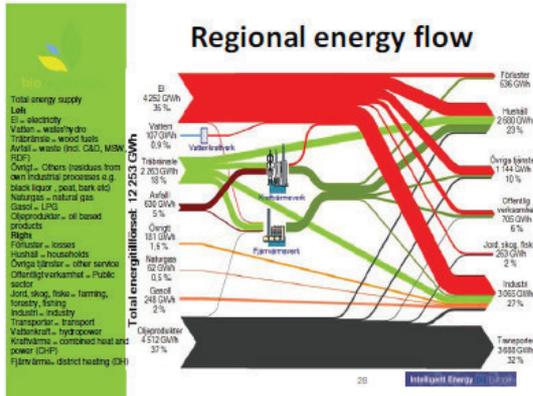
Key drivers

Table 4 Energy and environmental taxes for industry, agriculture, forestry, aquaculture and heat production in CHP plants not in the EU emission trading system, from 1st January 2010

	Energy tax	CO ₂ tax	Sulphur tax	Total tax	Tax break/tonne
Gas oil, SEK/Mt	-	633	-	633	6,4
Heavy fuel oil no. 5, SEK/Mt	-	932	100	1 032	7,0
Coal, SEK/tonne	-	551	160	701	9,3
LPG, SEK/tonne	-	666	-	661	5,2
Natural gas, SEK/1000 m ³	-	474	-	476	4,3
Crude oil oil, SEK/Mt	799	-	-	799	8,1
Peat, SEK/tonne, 40 % moisture content (0.3 % sulphur)	-	-	50	50	1,8
Domestic waste, SEK/tonne of fossil carbon*	-	806	-	806	9,2

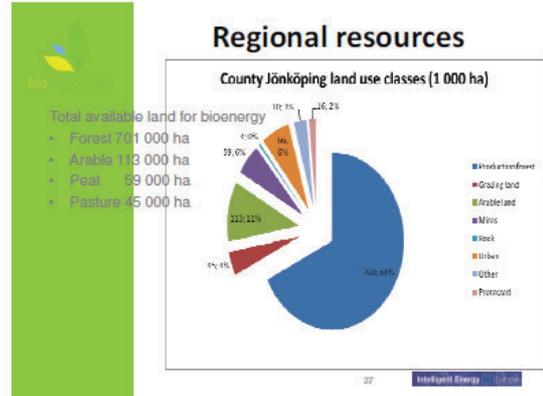
Source: Swedish Tax Board, additional processing by the Swedish Energy Agency.

* Maximum carbon dioxide tax relief (kg) is obtained for an electrical efficiency of 15 %. Exemption from energy tax is obtained for an electrical efficiency of 5 %.



Regional resources

- 13 municipalities
- Combined population ~333 000
- About 30 % rural residents
- County capital Jönköping, (pop. ~120 000)
- Three "Covenant of Mayors" signatories





Questions or comments?

Further information:
Alan Sherrard
E-mail: alan@acuityflux.se
or www.bioregions.eu

Thank you for your attention!

31 



Key drivers

Taxes galore!

Energy taxes – environmental & fiscal based on Polluter Pays Principle (PPP)

- CO₂ – SEK 1.05 /kg on all fuels except biomass & peat
- SO_x – SEK 30/kg coal or peat, SEK 27 per each 0.1 % by weight S per m³ oil (under 0,05 % S by weight exempt)
- NO_x - SEK 50/kg on boilers, gas turbines and stationary combustion plants supplying at least 25 GWh/year.
- General energy tax (fiscal) - levied on most fuels
- Transport - energy & CO₂ except biofuels

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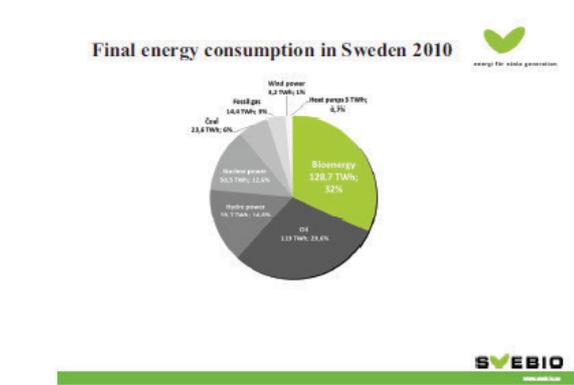
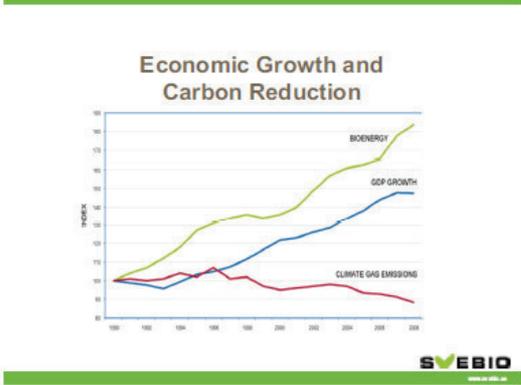


Key drivers

However...

- Heat & electricity taxed differently, power production exempt from energy & CO₂ tax
- Refuse (as fuel) - energy tax SEK 160 /t of fossil carbon, CO₂ tax SEK 3 840/t of fossil carbon
- Generally biomass fuels & peat used for power production are tax-free, but marketable heat produced in combined heat and power is taxed in the same way as in industry

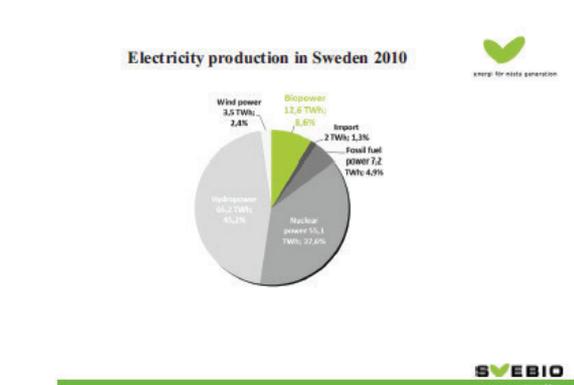
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Bioenergy creates sustainable jobs

- 1 TWh bioenergy => 250 - 300 new jobs
- An increase of 80 TWh bioenergy => + 24 000 new jobs in Sweden
- Equipment manufacturing => another 8000 jobs
- Large export potential => additional jobs
- Society benefits:**
 - Generates income tax and decreases the need for support to unemployed.

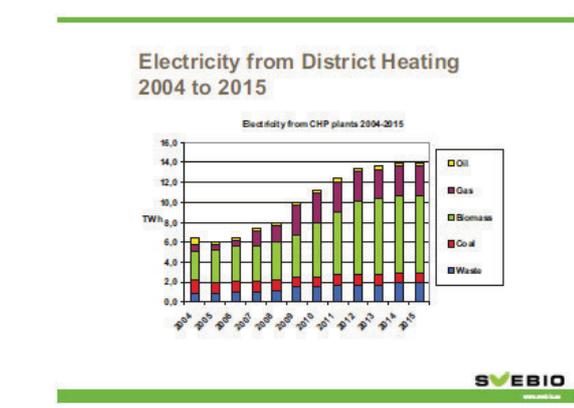
SVEBIO
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The bioenergy market need:

- Political will
- Ambitious targets
- Correct incentives
- Reduced production costs
- Companies willing to lead the change

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Thank you for your attention!

Lars-Erik Larsson
Lars-erik.larsson@svebio.se
Tfn: + 46 8 441 70 88

