



Action plan for Swedish bio energy companies - Austria -

Version 1.0

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Summary market prioritization bio energy

- There is a growing global demand for renewable energies
- There are many opportunities and in order to succeed the bio energy companies have to focus and have a long term commitment on the most promising markets
- In order to shorten lead times to business for Swedish bio energy companies the Swedish Trade Council analyzed 25 selected markets
- Nine markets were identified as the most promising; Austria, Canada, Czech Republic, Ireland, Poland, Romania, Spain, United Kingdom and USA
- In the next step a deeper market analysis and an action plan for each prioritized market was conducted
- This is the action plan for the Austrian market



Why prioritize?

- focus and long term commitment are essential to success

Entering a new market requires a substantial commitment in terms of time and money especially in relation to a small company's resources

Before entering a new market the following factors need to be evaluated:

- Customer demand and buying criteria
- Laws & regulations
- Business climate & culture
- Local and international competition
- Access to financing

When entering a new market the following need to be created:

- Sales & distribution network
- Local references
- Customer contacts
- Brand recognition
- Local networks (Swedish companies, sub-suppliers, consultants, politicians, etc)

Substantial scale and learning curve effects exist per country



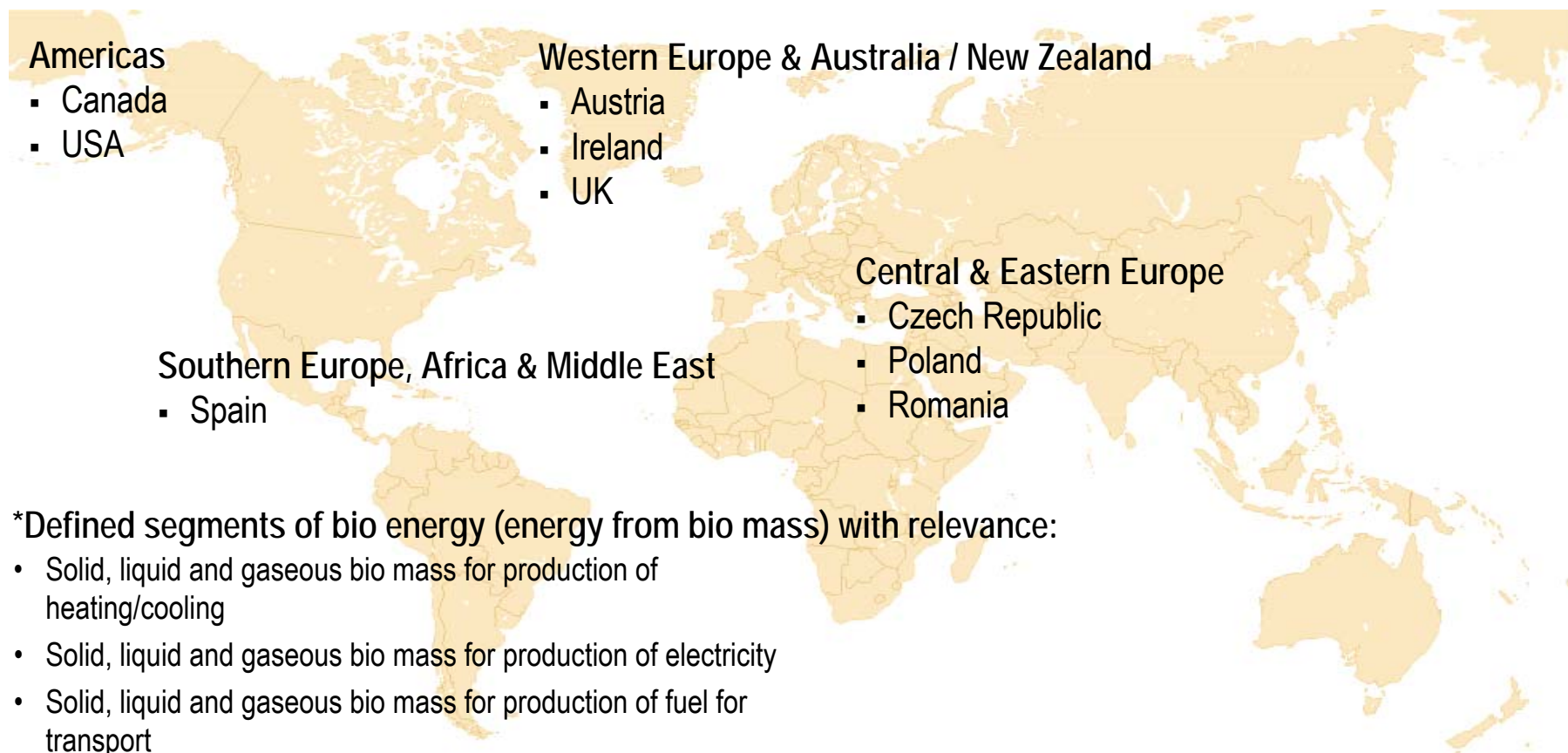
The 25 countries are found in five regions*

- identified through company preferences, industry experts, Svebio





9 geographical markets were identified for further analysis and development of an action plan in the field of bio energy*



*Defined segments of bio energy (energy from bio mass) with relevance:

- Solid, liquid and gaseous bio mass for production of heating/cooling
- Solid, liquid and gaseous bio mass for production of electricity
- Solid, liquid and gaseous bio mass for production of fuel for transport



Three tracks identified

- different characteristics for each track

"EAST TRACK"

- Czech Republic
- Poland
- Romania

Characteristics:

- New EU-member
- District heating
- Mainly public financing
- Based on opportunities waiting to be explored

"WEST TRACK"

- Canada
- Ireland
- Spain
- UK

Characteristics:

- Bio energy for transport + electricity production
- Domestic heating/cooling
- Public and private financing
- Based on demand from markets

"SPECIAL TRACK"

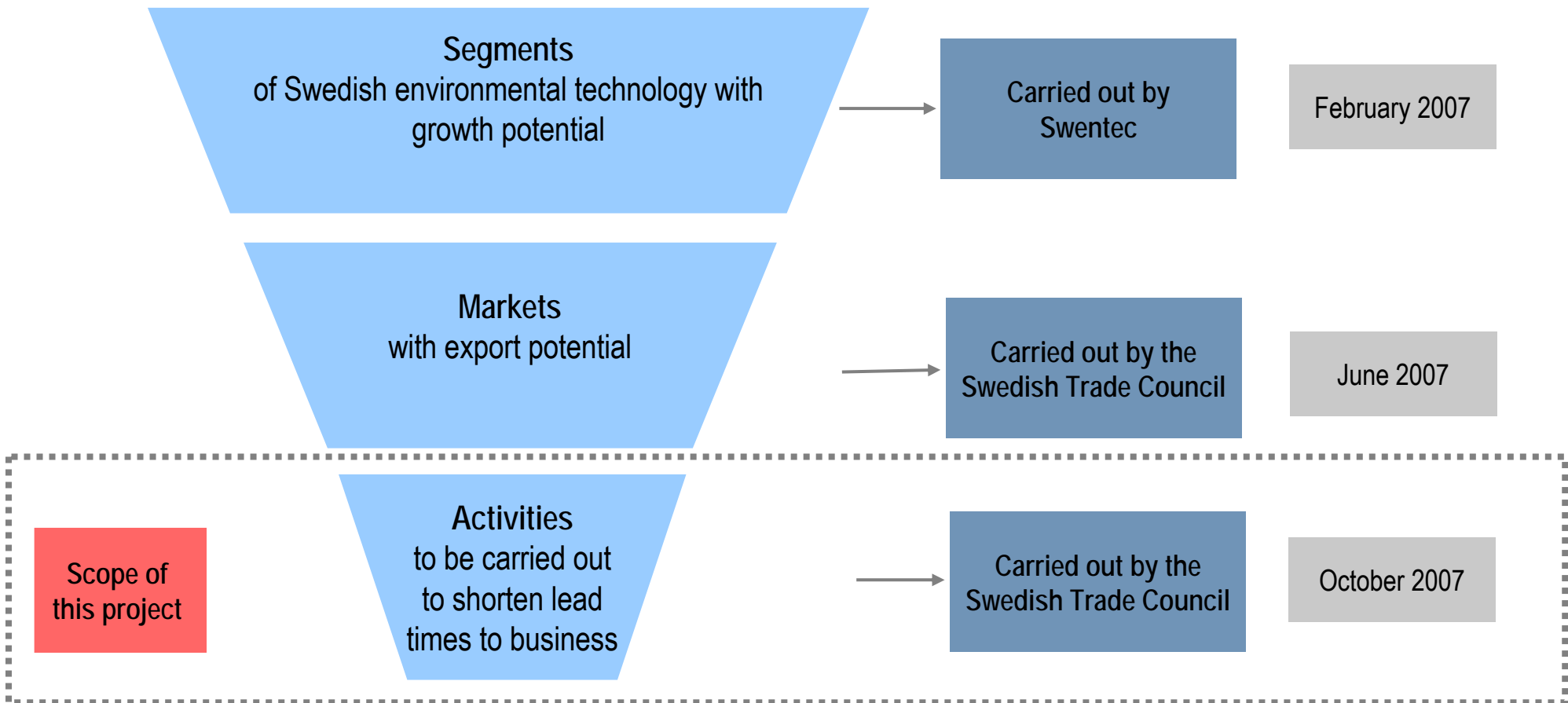
- Austria
- USA

Characteristics:

- Window of opportunity open now
- Very advanced in certain segments, i.e. bio fuels for transport
- Public and private financing
- Based on bench marking opportunities

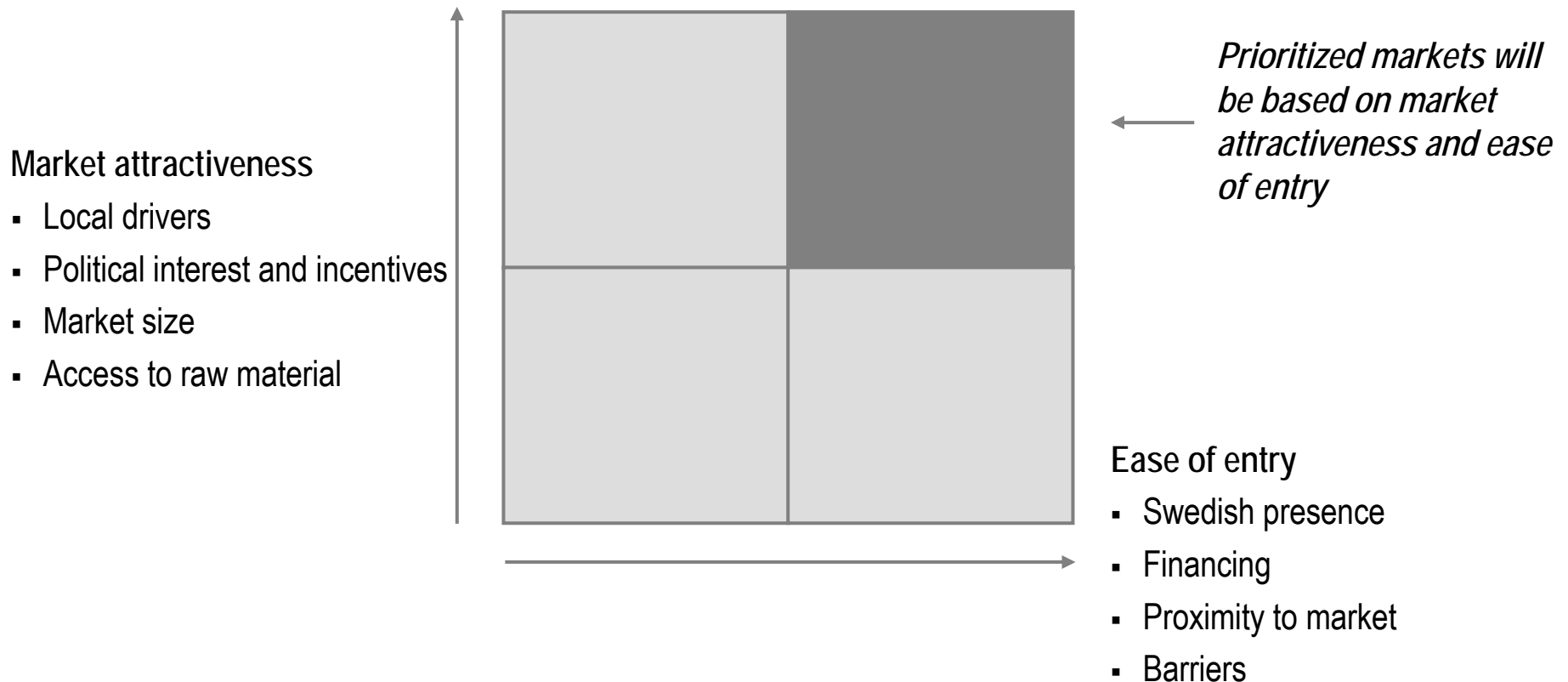


Funnel approach to zoom in on segments, markets and activities with largest potential for export



In the last report markets with most potential (market attractiveness vs. ease of entry) were identified with Svebio

- this project focuses on WHEN and HOW to enter the market



This project entails 3 segments - The company strategy needs to be adapted accordingly



Project plan: Activities

Market analysis

Activities

- Local interviews with bio energy companies, experts and organizations

Deliverables

- Answered key questions
- Local action plans for the 3 sub segments

Aggregated analysis

Activities

- Analysis of local reports and action plans
- Development of action plans for regions and or types of companies

Deliverables

- Action plans for regions and or types of companies
- Action plan for a central Swedish initiative

Seminars

Activities

- Seminars in Stockholm and Gothenburg

Deliverables

- Conducted seminars

This process will assure well founded strategies / action plans



Definitions and abbreviations

Term / abbreviation	Definition
Environmental technology	All technologies whose use is less environmentally harmful than relevant alternatives. Environmental technology are according to ETAP categorized into the following areas; air pollution control, bio energy, district cooling/heating, energy efficiency, environmental consultants, environmental training & information, hydro power, noise protection, soil remediation, solar energy technology, sustainable building, systems/control/monitor engineering, transportation, waste management & recycling, water & wastewater treatment, wave power, wind energy technology
Bio energy	Bio energy is energy from biomass. Includes solid, liquid, gaseous bio fuels for production of heating/cooling, electricity and fuel for transport.
RES	Short word for renewable energy sources, normally wind, solar, bio energy, hydro etc.
Market	In this report a market is defined as a geographical country.

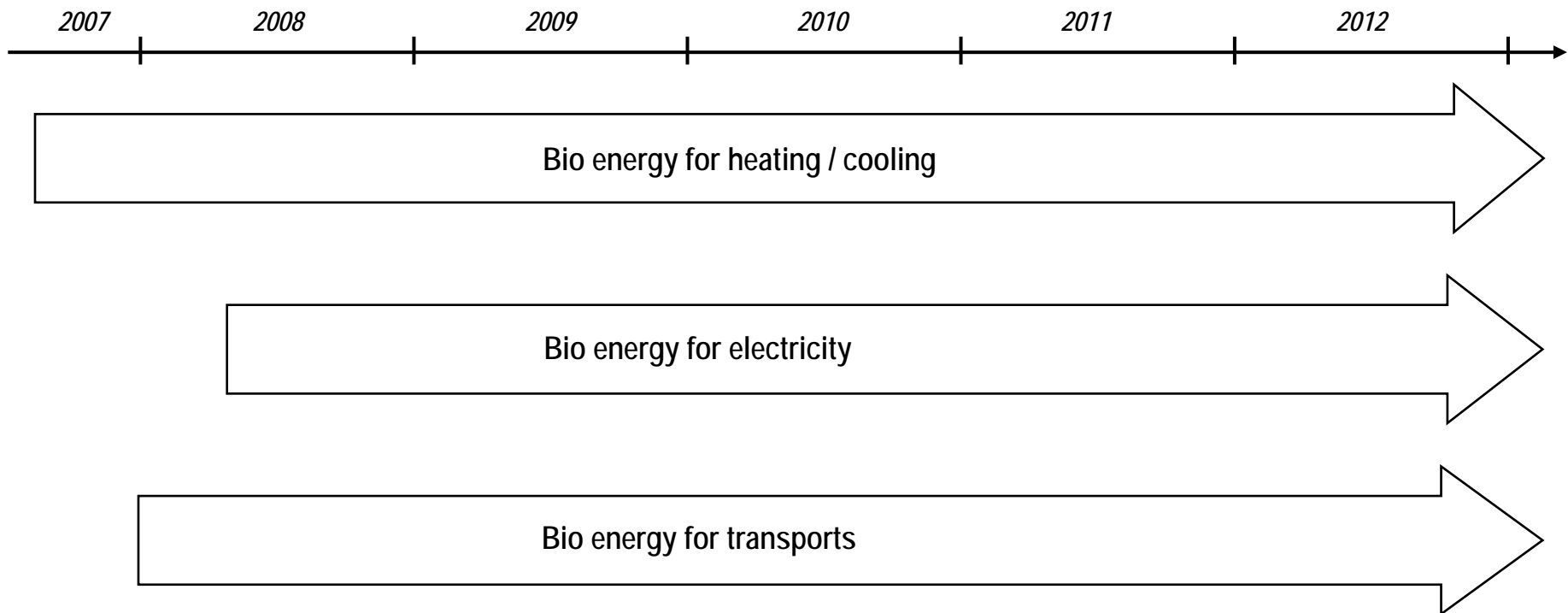


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Bio-energy for heating is a large but yet prosperous market - Bio-energy for transports shows future potential in Austria





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Current opportunities within the segment heating / cooling include combustion systems for households/communities

Timeline according to type of company

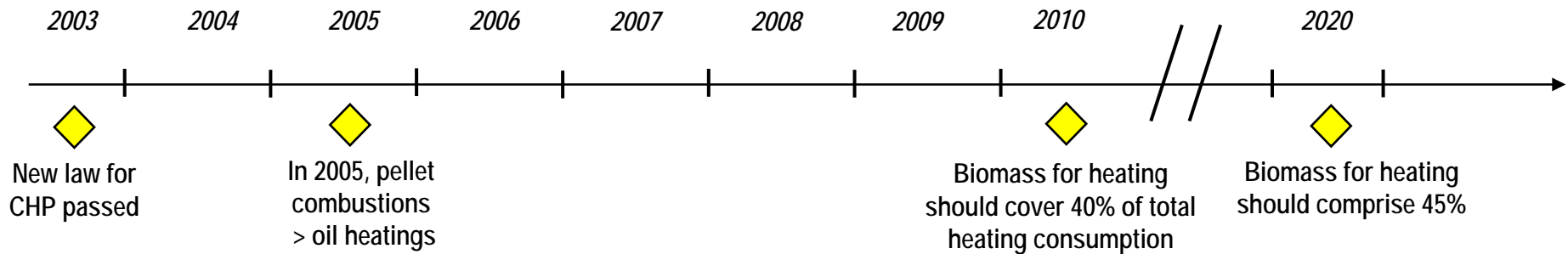
Refined products	Biomass burners / systems with pellets, split wood and wood-chip technology sold to households, companies, utilities	New technology burners and systems
Know how	Consulting and engineering for CHP and biogas plants provided to e.g. municipalities with district heating plants, private companies, communes	Technologies and competence for production of biogas from waste material
Raw material	Wood material and organic waste material sold to households and communes for heating	Straw, Hay, Energy grain
Now	<i>Time</i>	2012

- Yearly increase of wood chip and pellets heating systems
- Biomass heating combustion from pellets, split logs/wood systems show large potential also in the future
- District heating/CHP/biogas for whole communities is on the rise
- Austrian companies have know how within heating but large market size reveals potential also for alternatives
- Austria has raw material which covers the needs today
 - However, not enough to meet future demands

Producers of pellet burners / systems and companies with know how in the field should act now

Austria is a best practice within biomass for heating

- Eager goals have been set up for the future by the local government



Comments

- New law passed for subsidies for CHP in 2003
- Pellet combustions exceeded the oil heatings in 2005
- Biomass should cover 40% of total heating need in 2010 and 45% in 2020 - in accordance with governmental targets
- There are several international competitors present on the Austrian market and competition is fierce due to raised market size

Actions

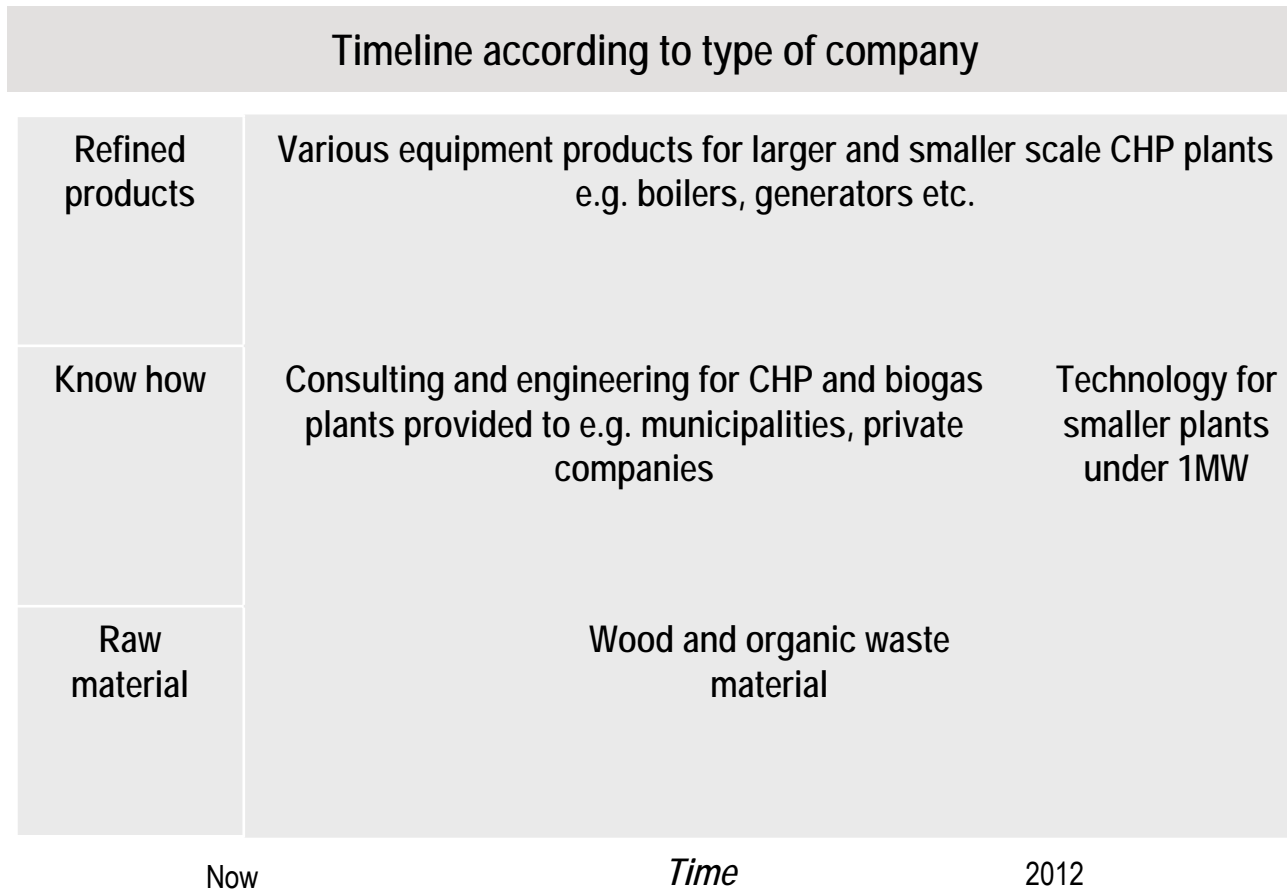
- Prioritize market for heating combustions as this is growing strongly over last year, eager targets have been set up and reveals positive trends for future – act now
- Opportunity for foreign companies to supply technology, know how and raw material like pellets now and in the future
- Monitor competitors actions since biomass for heating is a large and prioritized market
- Monitor price development as prices for raw material have fluctuated widely last years



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Potential for bio-energy within electricity is seen mainly within CHP

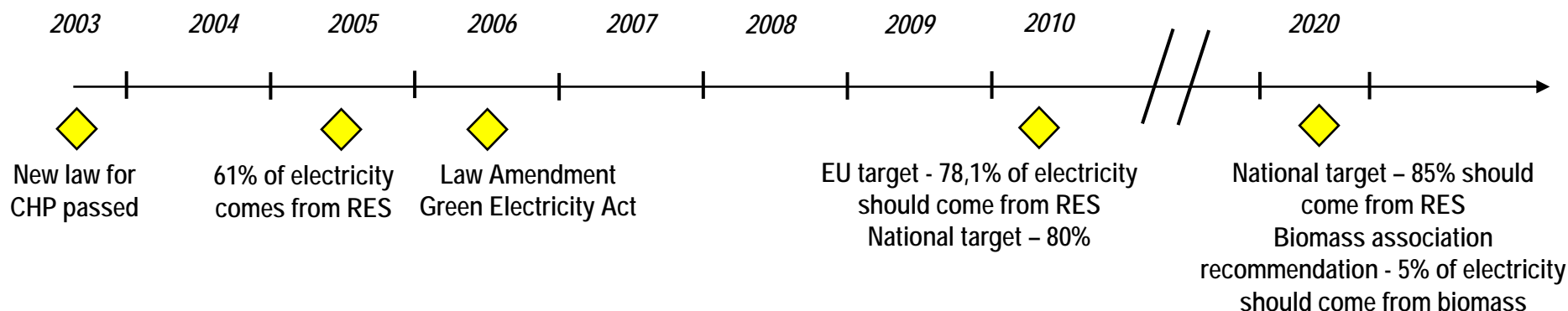


- Bio-energy for electricity is not yet mature
 - RES for electricity production mainly comes from hydro and wind
- Limited raw material is more likely used for heating or fuel production than for electricity
- CHP plants are however on the rise and are said to have a prosperous future
- Wood is the main fuel but also organic waste for larger plants are increasing in significance

The growing interest for CHP could be an opportunity

Ambitious targets set up for electricity from RES over next years

- Bio-energy plays a limited role in comparison to other technologies



Comments

- Green Electricity Act passed in 2003 for subsidies for CHP technology –first common law on national level for electricity, amended later in 2006 as subsidies were reduced
- In 2005, 61% of electricity consumption came from RES
- Ambitious targets set up both from EU as from Austrian government to promote RES in 2010 and 2020
- bio-energy is limited - RES estimated to make up 5% in 2020 – mainly from CHP technology production

Actions

- Prioritize market for CHP technology as the main technology to focus on in the area of bio-energy for electricity
- Monitor market development for other RES technologies as RES are a hot topic and eager goals have been set up for the upcoming years
- Stay informed on development of financial framework and subventions that are available on the market
- Monitor competition within CHP technology and stay informed on upcoming projects for immediate action when there is opportunity

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There is a prosperous future for biomass for transports - Competence within ethanol and biogas is needed

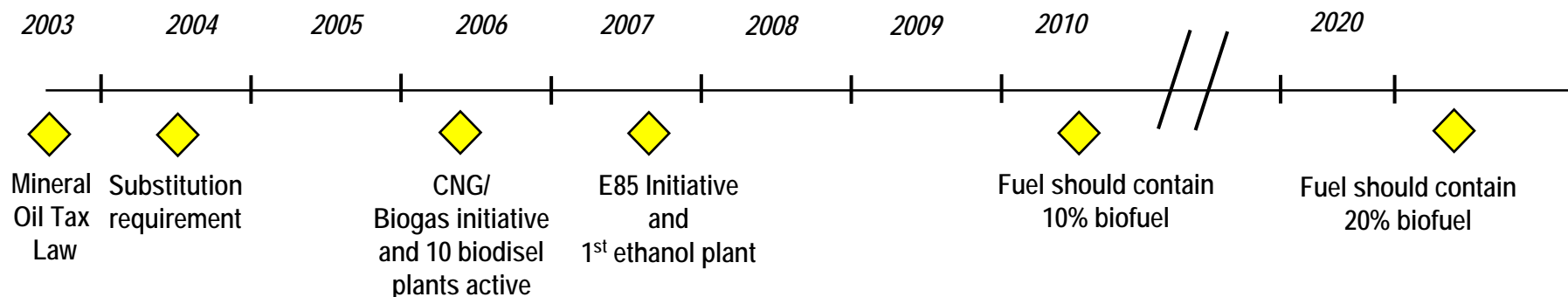
Timeline according to type of company

Refined products	Biodiesel from rapeseed and oil crops	Biodiesel from oil crops Bioethanol from sugar beets and grain	Biofuels from 2nd generations, cellulose
Know how	Austria has know how today within biodiesel technology	Technology for bioethanol will be needed	Biogas technology plants for transport
Raw material	Rapeseed, Oil, Sugar beets, Grain, Gras etc.		Organic waste products
	Now	Time	2012

- The market for biomass for transports needs to develop to meet future demands
- Austrian companies have know how in biodiesel production and technology
- There are 10 biodiesel plants and 1 ethanol plant in Austria
- One pilot project for biogas for transport – mainly mixed with natural gas, not sold pure
- To meet future demands for transportation, it is estimated that Austria will need to import 2/3 of the raw material from neighbouring countries

Know how within ethanol and biogas as also raw material needs to be gained

Bio-energy for transport is still an immature segment - Actions are undertaken to foster the development



Comments

- Mineral Oil tax implemented stating harder rules for fuel
- Substitution requirement passed regulating that fuel needs to contain certain % biofuel i.e. 4,3% (2007) & 5,75% (2008)
- In 2006, 5 point program CNG/Bio-methane launched to promote CNG as an alternative fuel
- In 2006, 10 biodiesel plants were running in Austria
- In 2007, 5 point program for bioethanol to promote E85
- In 2007, first bioethanol plant taken into production
- Fuel should contain 10 resp. 20% biofuel for future years

Actions

- Indications like tougher legislation, programs to support alternative fuels and investment in plants and infrastructure indicate that market is gaining importance and therefore Swedish companies should prioritize market
- Act now – in order to still belong to the early adapters
- Monitor competition as much is happening at the moment
- Prioritize biogas and ethanol technology
- Supply of raw material is an option as resources are limited

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Austria belongs to EU's best practices within bio-energy heating

Country facts

Population:	8,2 million
GDP/capita:	\$ 35,500
GDP growth:	2,8 %
Swedish export:	10,4 Billion SEK
Swedish export, growth:	15 %

bio-energy facts

Feed in tariffs:	Varies with type of Energy plant (8,5 M EUR total budget for 2006)
RES in energy mix:	21,35 %
Available programs/initiatives:	Both initiatives from governmental and private sector/organizations
National Energy Plan:	New fund for energy for 2007 with a budget of 500 M EUR for RES
Available raw material:	Wood products
Domestic expertise:	Heat. Boilers, Pellets, Biodiesel, Technology for large plants
Environmental public awareness:	High
bio-energy companies present:	Mostly sales by distributors or from Sweden directly, project works
Current projects:	Seminar and Matchmaking Event on Biofuels for Transport carried out in April with Swedish Trade Council/Swedish Embassy/Svebio



Austria shows a large interest for Swedish solutions

Business opportunities

- Swedish environmental solutions have very good reputation in Austria which has been confirmed by several visits from Austria to look at Swedish technology
- Austria has set ambitious goals to increase the amount of RES over next years
- There are financial initiatives from public and private organizations to support these measures
- Sweden is especially seen as a benchmark in bio fuel for Transports (Ethanol and Biogas)

Challenges

- Austrian companies have core competence within: wood furnaces, bio diesel and district heating and other RES such as hydro and solar power
- Austria is dependent on import of raw material to cover the total need for bio-energy
- Imports mainly derived from Eastern European countries
- Electricity consumption has raised over last years
- Weak incentives and cut fundings for electricity
- Not yet corresponding infrastructure for transports

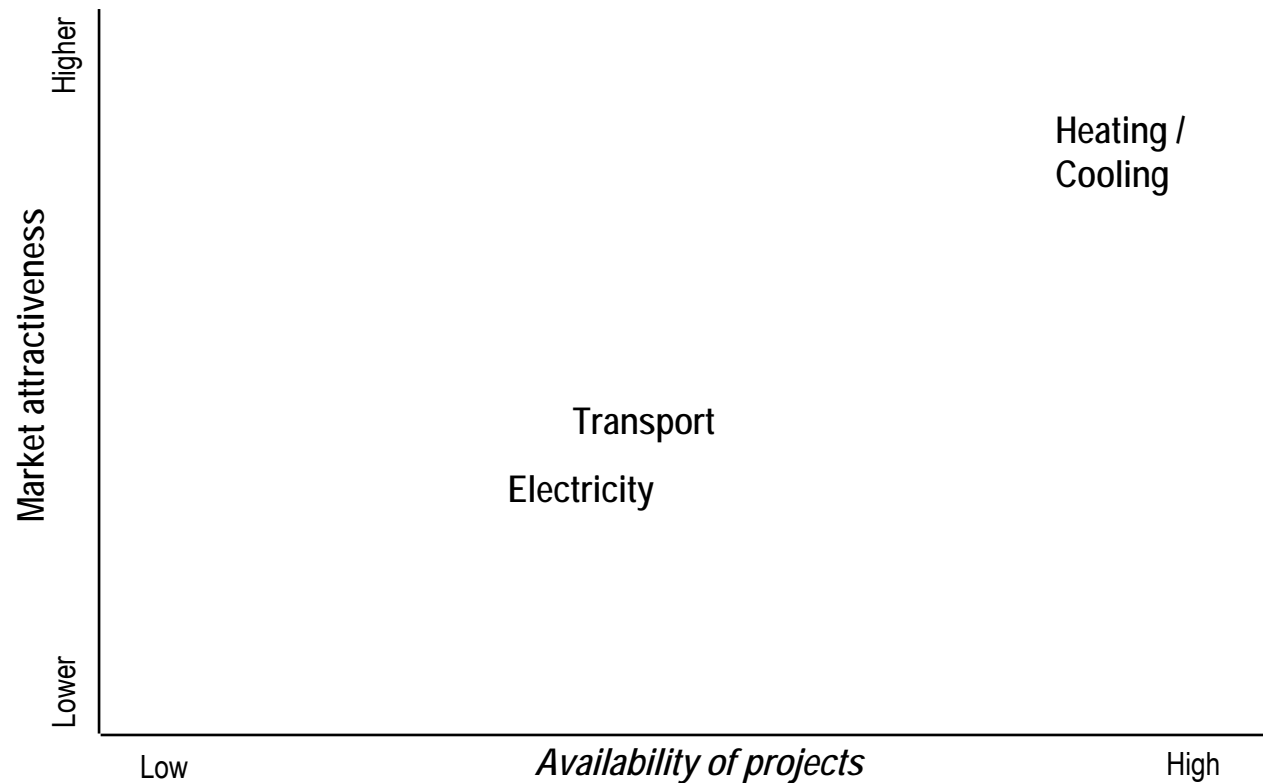
Conclusion

- The Austrian government has created a national plan for Austria with the aim to raise the amount of RES within heating, electricity and biofuels for transports
- Austrian government is, accordingly, supposed to invest 500 M EUR in RES for next 4 years
- There are additional programs/cooperation between private companies and organizations in order to foster RES
- Swedish companies benefit from good reputation and high focus on environmental issue and bio-energy in the country
- The seminar and matchmaking event in April on Biofuels for transports with Swedish technology showed great interest from Austrian point of view for Swedish solutions

Market for small/medium sized heating is booming in Austria

- Transports reveals future potential

Market attractiveness and availability of projects



Market for heating/cooling is dominant

- Heating / cooling had an estimated market value of around 400M EUR (2004) revealing potential particularly within domestic heating like small/medium sized heating systems - as also larger plants supplying whole towns
- Market for electricity for bio-energy is dominated by CHP technology, which has suffered from legislation changes and cut back on incentives lately
- Sales of biofuels for transport was 35 M EUR (2004) and are expected to grow over next year due to eager targets and larger investments in infrastructure



Austria has a mature market for bio-energy for heating

- But the Austrian market still reveals continuous growth

Indications from the market

- Bio-energy has been part of Austrian energy tradition for long but still reveals continuous market potential for future needs
 - Biomass for heating is the dominant area for use of bio-energy
 - Due to high electricity consump. and price on oil, bio-energy for electricity (mainly CHP) and transport has gained significance
 - Enhanced emphasis on R&D & newer techniques in all 3 areas
- Common significant influencing entities include both governmental, major private companies and banks
 - Private banks are important entities for financing projects
 - Cut subventions on biomass plants have led to insecurity and reduced production of such plants lately
- Main customers showing potential; households, utilities, companies
- Supply of raw material for wood is secured within the borders but Austria is dependent on import of biofuels for transports
- Large dominance of Austrian companies on the market for heating
 - However a growing presence of foreign companies

Implications

- Even though Austrian market is mature within heating - increased import combined with large market size reveal potential for Swedish companies to succeed on the market
- Funding is a debated matter but conditions will most likely be changed since Austria has eager EU goals to reach that are dependent on funding – therefore Swedish companies should be ready to act
- Swedish companies offering solutions to households and utilities have good chances to generate business on the Austrian market
- Lately – growing competitive environment in Austria where also Swedish companies have a chance to move into the market and benefit from Sweden's overall good reputation

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30% of the heating in Austria derives from biomass - Trend shows growing demand for combustions

Bio energy – description of the market

Heating / cooling

- 30% of the heating in Austria derives from biomass heating. Both individual households as also communities and town have recognized the value of heating with wood. Raised prices on oil and gas, easier operation of biomass furnaces and higher environmental awareness have led to a positive trend for heating with biomass.
- Biomass for heating is a well developed segment and the area where Austrian companies have largest know how of the three segments. Austrian companies export between 30-70% of their biomass technology products, mainly to other European countries. Over last 25 years - a remarkable decrease of households heated with coal - and a strong upward trend for wood heating.
- Branch experts see enormous potential in biomass technologies – both for individual households for products like split wood, wood chip and pellet furnaces, which have shown a strong growth over last years and which is expected to raise, as also for medium sized biomass heaters for multifamily houses. Additionally, strong growth potential is seen in district heating and biomass CHP plants. Austrian government has also put up eager goals to promote biomass for heating stating that, in 2020, 45% should come from biomass
- Major trends are replacement of heat/generating plants and boilers with biomass heaters as also larger biomass or biogas heating plants and district heating supplying whole towns with heat.
- Business opportunities can, as such, be seen in biomass heaters for households, technology for heating multifamily houses and whole towns/communes (district heating) or within the area of biogas plants that run on organic waste.



Alternative electricity production mainly comes from hydro and wind - Investments in CHP are being done within biomass

Bio energy – description of the market

Electricity

- Austria is one of the leading EU countries when it comes to producing environmental friendly electricity and is expected to raise the total amount of RES for electricity usage until 78,1% in 2010. Due to raised electricity consumption over last years, Austria will have to fight hard to reach EU target.
- Biomass for electricity production is a quite immature segment and has been used to a limited extend so far as Austria have other dominate RES sources for electricity purposes. Water and wind dominate as alternative RES sources and biomass is due to its limited availability not seen as the most efficient alternative. Some argue that biomass could be used better for heating and transportation fuel purposes.
- Since 2003 there is a national law running to promote smaller green electricity plants. However, right now big debate on the efficiency of the financial framework and feed in tariffs as budget has been reduced and, in turn, investments decrease.
- No exact plan for how much the electricity production from biomass should be enhanced but the Austrian Biomass Association estimates that 5% of the biomass production should be used for electricity purposes in 2020.
- Investments in environmental friendly electricity are being done in hydro and wind. For biomass – especially in CHP plants.
- Branch experts see a prosperous future for CHP plants, and business opportunities within biomass for electricity are therefore seen mainly within different kinds of products and services supporting this technology.



Increasing interest for bio-energy in transport - Sweden is seen as a best practice in biogas and ethanol

Bio energy – description of the market

Transport

- Most common fuel in Austria is diesel (74%) and Austria has expertise in production and know how of biodiesel. Biodiesel is produced in 10 different plants, with a yearly capacity of 199.000 ton (2006) – large amount is exported to e.g. Germany/Italy. Large amount of raw material imported from Eastern European countries e.g. Slovakia. Austria's first ethanol plant about to start production, expected to produce 160.000 tons yearly. Pure biogas is mainly produced for heating/electricity production today but 1 pilote plant for producing biogas for transportation fuel, which later is mixed with natural gas – not sold pure.
- Market for biofuels for transports needs development and tougher regulations to accelerate. Gradually more programs have been launched to actively promote biofuels - from government/branch organizations/private companies. In 2006 and 2007, two different five 5 point programs were implemented. The first one has the aim to promote Bio CNG as a fuel 80% CNG (Compressed natural gas) + 20% CBG (Compressed Biogas). The second program to promote E85 as an alternative fuel. Both programs prescribe that Austria should have 200 gas stations in 2010 for each fuel, as also 50.000 cars using this fuel.
- Biogas is seen as a very attractive alternative with a potential that could substitute 27% of the total consumption of the country's biofuel needs. Additionally, emphasis is now increasingly being placed on research for 2nd generation biofuels.
- In Austria, there is a great interest in Swedish expertise in especially the area of biogas and bioethanol. Business opportunities can be seen mainly within technology, consultancy and vehicles on this area, and to some extent possibly raw material.

New national fund of 500 M EUR for RES announced in fall 2006

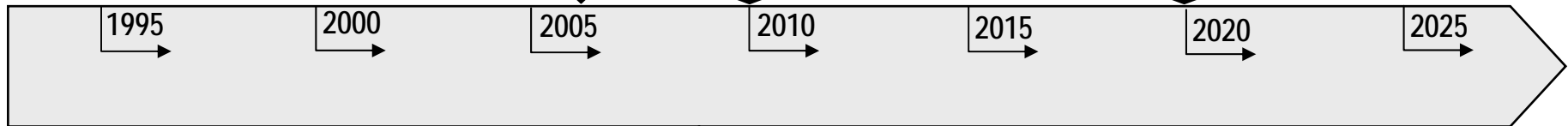
Fund for Renewable Energy 2006

Creation of a national a fund to promote RES from 2006-2010

- 500 M EUR is mainly to be invested in research and development

Eager national targets set up for 2010 and 2020

- Total RES should constitute 25% and 45% respectively
- Biomass usage should be doubled until 2010
- Green electricity should make up 80% and 85% respectively
- Biofuels for transport should make up 10% (20% in 2020)
- Change of min. 100.000 households to RES and 400.000 until 2020



Electricity and natural gas liberalization in 2001/2002

As an important step to foster alternative solutions – consumers can choose own supplier

Green Electricity Act in 2002

Feed in tariffs created to promote green electricity

- Law amendment in 2006 with cut fundings

Transport 2008

5,75 % biofuel mix in fuel for transport prescribed

Comments

Austrian government hopes to raise awareness for RES and bio-energy and has set up eager goals for 2010 and 2020.



The most significant challenges include weak legislation, low incentives and enhanced electricity consumption

Bio energy – major challenges in each field

- There are major targets set up for promoting RES and bio-energy – however measures how to reach the targets need to be complemented and also governmental incentives and funding need to be improved to make market more attractive
- Even though Austria has quite large potential of raw material, there are supply limitations for biomass, which limit the deployment
- There is a high environmental awareness but not all people are prepared to pay up for environmental friendly alternative biofuels
- Technology on ethanol and biogas for transports is not yet that developed as in Sweden

Heating / cooling	Electricity	Transport
<ul style="list-style-type: none"> • Supply of wood is limited • Fierce competition due to many active players on the market • Pellet prices fluctuated immense last year and need to be stabilized 	<ul style="list-style-type: none"> • Electricity consumption has raised over last years • Biomass for electricity is not seen as most efficient way to use bio-energy • Law needs to be strengthened to better promote green electricity 	<ul style="list-style-type: none"> • Corresponding infrastructure needs to be built out • Consumer behavior • Weak incentives for end-customers • Biodiesel cannot be the only long term solution



The most significant entry barriers include the “made in Austria” phenomenon

Bio energy – main entry barriers		
Heating / cooling	Electricity	Transport
<ul style="list-style-type: none"> • „Made in Austria“ phenomenon – Many prefer to buy Austrian products in this field because Austria is seen as a best practice here • Diverse regulations for funding - regulated differently in different federal states • Fierce competition due to Austria’s core competence within bio-energy for heating as also enhanced competition from abroad 	<ul style="list-style-type: none"> • Public ownership • Ongoing debate on financial framework for bio electricity plants and push for more fundings • Strong focus on other alternative renewables • CHP is the main preferred technology – therefore there are limitations for other technologies on the market 	<ul style="list-style-type: none"> • Public ownership • Taxes on imported E85 fuel • Prices on raw material for production

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Common significant influencing entities include Ministry of Agriculture, Austrian Chamber of Agriculture and major companies

Bio energy – influencing entities

- Ministry of Agriculture, Forestry, Environment and Water Management - managing authority for RES/bio-energy (www.lebesministerium.at)
- Federal Ministry of Economics and Labour (www.bmwa.gv.at) – responsible for legislation
- Bundesbeschaffung (BBG) – belongs to Ministry of Finance and is responsible for public tenders in general (www.bbg.at)
- Austrian Chamber of Agriculture has a consultation role for the Ministry of Agriculture in agricultural matters and is decentrally divided into 9 parts in accordance with the federal states (www.agrar-net.at)
- Austrian Chamber of Commerce (WKO) includes special umbrella organization for different RES technologies and represents Austrian companies (www.wko.at and www.energieklima.at)
- The Federation of Austrian Industry (IV) is a lobby organization representing its members (www.industriellenvereinigung.at)
- Biomass Association promotes bio-energy as alternative source (www.Biomass Association.at)
- Austrian Energy Agency – non profit organization for alternative energy solutions (www.eva.ac.at)
- Major cooperations such as: OMV- oil and gas company (www.omv.com) and RaiffeisenZentralBank – Bank investing in environmental technology (www.raiffeisen.at)
- Kommunalkredit – special bank that finances various public projects within RES/bio-energy (www.kommunalkredit.at)
- AgrarPlus – Association to promote agricultural products (www.agrarplus.at)

Significant entities within electricity include E-control whereas ÖAMTC plays an important role within transportation

Bio energy – influencing entities		
Heating / cooling	Electricity	Transport
<ul style="list-style-type: none"> • ARGE Kompost & Biogas • ProPellets • BioWärme-Forum Austria • WKO Klimaaktiv • Biomass Association • Companies such as Fröling or Guntamatic etc. 	<ul style="list-style-type: none"> • E-Control • Association of Austrian Electricity Companies (VEÖ) • WKO Klimaaktiv • Biomass Association • Companies like Jenbacher, Austrian Energy & Environment etc. 	<ul style="list-style-type: none"> • ÖAMTC (Austrian Car Association) • WKO Klimaaktiv • Biomass Association • Fuel production plants like Agrana, Biodiesel Vienna • Companies like OMV, BDI Biodiesel, Vogelbusch etc.

The Austrian Biomass Association emphasizes on all three parts



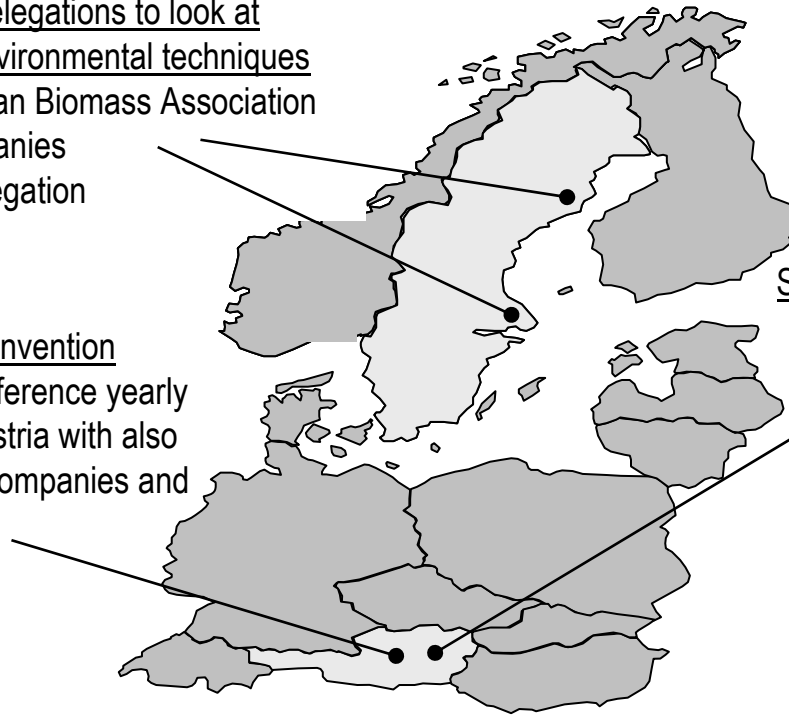
Co-operations between Swedish and Austrian organizations exist

Several visits by Austrian delegations to look at Swedish practices within environmental techniques

- For example by Austrian Biomass Association
- Private Austrian companies
- Austrian journalist delegation

Sustainable Energy Days Convention

- Large international conference yearly carried out in Wels, Austria with also Swedish participating companies and organizations



Seminar on Biofuels for Transports

- A seminar & matchmaking event to exchange experiences and promote Swedish solutions within this area organized by STC/Swedish Embassy/ Svebio and ÖKL in April 2007

National cooperations

- Swedish bio-energy Association (Svebio) and Austrian Biomass Association (Biomass Association) - the two national organizations for bio energy - have a long standing relationship
- Austrian Biomass Association has arranged several trips over last years to Sweden to look at different techniques and plants for for biogas etc.
- Additional delegation trips with Austrian company participants have been carried out lately to look at Swedish practices



Kommunalkredit is a key stakeholder for financing of public projects

- Private banks act as financier in private projects

	Private	Public
National	<p>Local private financing</p> <ul style="list-style-type: none"> • The projects are financed through local private capital <ul style="list-style-type: none"> – The contractors – Investment companies – Banks specializing in RES (E.g. Raiffeisenbank) – Larger corporations investing in such technology 	<p>Local public financing</p> <ul style="list-style-type: none"> • The projects are financed through local public capital <ul style="list-style-type: none"> – The municipality / state – The national government can offer subventions for municipalities, private companies or private households investing in RES technology (decentralized regulations for different regions) – Kommunalkredit (bank specialized in public finance)
International	<p>Public private partnerships:</p> <ul style="list-style-type: none"> • The projects are financed through national or international public private partnerships • These are mixed projects in co-operation between state, association, businesses and/or other stakeholders 	
	<p>International private financing</p> <ul style="list-style-type: none"> • The projects are financed through international private capital <ul style="list-style-type: none"> – The contractors – Investment companies and banks 	<p>International public financing</p> <ul style="list-style-type: none"> • The projects are financed through international public capital <ul style="list-style-type: none"> – The national government – EU funding

It is common that projects are financed through a mix of private and public funding



There are several financing alternatives available from Sweden (1/2)

Financing alternatives for Swedish corporations from Sweden

EKN (Exportkreditnämnden)

Financing: Government authority that gives warranties in order to insure export deals and cross border investments. Such a warranty can be the prerequisite for offering the buyer credit – and can also enable better financing.

Environmental focus: Gives warranties for different types of business endeavors incl. Environmental oriented ones. Takes the environment into consideration when evaluating all business endeavors.

Geographical focus: Basically all countries, but with different levels of premiums according to the country list on the website.

Info: www.ekn.se, martin.Kallervald@ekn.se

SEK, Svensk Exportkredit (“Swedish Export Credit”)

Financing: State owned corporation that offer export financing solutions, general corporate financing, project financing, capital market transactions or qualifies consulting services Swedish companies and their international customers.

Environmental focus: Not specifically

Geographical focus: All regions

Info: www.sek.se, bo.leander@sek.se

There are entities for different needs – venture capital, credits, subsidies and warranties



There are several financing alternatives available from Sweden (2/2)

Financing alternatives for Swedish corporations from Sweden

Exportlånet ("The export credit")

Financing: "The export credit" is administrated by Almi and is a collaboration between Almi, EKN, Swedish Trade Council and Swedfund. The credit is developed to be complementary to a market and specifically for export deals. It can finance up to 90 per cent of the total capital need without a maximum credit amount.

Environmental focus: Not specifically

Geographical focus: The credit is only offered to Swedish SMEs with operations in Sweden

Info: http://www.almi.se/finansiering_export.html

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The most significant customers include utilities, communes and private households

Bio energy – main customers		
Heating / cooling	Electricity	Transport
<ul style="list-style-type: none"> • Municipal utilities investing in bio technologies and district heating: such as Wienenergie, EVN etc. • Companies investing in own bio-energy plants • Farmers investing in biogas plants • Private households that gradually invest in new bio-energy technology systems like pellets burners and combustions • Companies investing in CHP plants 	<ul style="list-style-type: none"> • Municipal utility companies investing in CHP plants such as Wienenergie • Companies investing in CHP plants • Farmers investing in biogas plants • Contracting companies • Installation companies 	<ul style="list-style-type: none"> • Municipal utility companies investing in technologies for biofuels for transport such as Wienenergie, Erdgas Oberösterreich • Automotive industry • Oil companies and fuel suppliers like OMV, BP and Agip • Plants that manufacture fuel • Private customers investing in environmental friendly vehicles



Wienenergie is an innovative Austrian utility investing in all three segments for bio-energy

Category	Utility company – the largest regional energy supplier in Austria supplying over 2 million people
Line of business	Offering various municipal services to its customers in the areas of electricity, heating, gas, waste management, infrastructure, telecom etc.
Turnover	1.976 M Euro (2005)
Ownership structure	Owned by Stadtwerke Wien (Vienna city)
Investment plans	Wienenergie has invested around 400 M EUR over last decades in the area of RES both for heating, electricity and biofuels for transports. Active right now with a rebuilding/building of Woods Biomass generating plant in Europe. Until 2008 investments of around 300 M EUR are being done to create the most modern, efficient and environmental friendly plant in Europe in this area. From winter 2008/2009, the plant shall supply 800.000 households, 7.000 Business customers with electricity and 200.000 households with heat.
Comments	Wienenergie both have own facilities for CHP, Hydro, Natural gas, Waste treatment etc and is also involved in a range of co-operations/joint ventures with other municipalities or companies like OMV to promote alternative solutions. Wienenergie is for example partner in Econgaz, a joint venture, which promotes natural gas as an alternative fuel as also in the 5 point program started in 2006 by Austrian government and other important stakeholders to promote CNG as an alternative fuel. To promote CNG, Wienenergie and its partners are running a project in Bruck/Leitha with a brand new technique for biogas CNG production.



OÖ Ferngas is active in natural gas and has received several awards for its technology projects within RES

Category	Energy company/ Utility
Line of business	Mainly producer and supplier of natural gas for different communes in Upper Austria, in total around 58.000 households
Turnover	106 M EUR (2005)
Ownership structure	Belongs to Upper Austria and is, in turn, owner or partly owner in several energy companies in Upper Austria as well as some abroad.
Investment plans	Over last 10 years around 250 M EUR have been invested in different projects. Plant in Pucking for biogas feed in was taken into production in 2006. Smaller innovative RES pilot project – Europe's first solar heating pump that functions with natural gas presented in 2006. The company additionally makes investments in building out infrastructure for CNG gas stations and to promote CNG as an alternative. Last year – first CNG gas station was launched outside Linz.
Comments	OÖ received energy globe award in 2006 for its biogas plant in Pucking –first time for an Austrian company. OÖ has several subsidiaries, with which the company supports different RES techniques. OÖ is also part of the “5 point action programme” together with other important stakeholders - to promote CNG vehicles. Also partly owner of EconGas.



OMV is an oil refinery and one of Austria's largest companies

- Has created their own future energy funds to promote alternatives

Category	Oil refinery - Austria's largest listed industrial company
Line of business	Oil refinery offering different type of fuels - Leading oil and gas group in Central Europe
Turnover	Consolidated sales: EUR 18.97 Billion EUR and EBIT: EUR 2.06 Billion EUR
Ownership structure	Listed on the Austrian stock exchange.
Investment plans	OMV has developed environmental protection as a business strategy and created the OMV Energy Fund, which has been endowed 100 M EUR to promote alternative environmental friendly solutions in Austria.
Comments	<p>OMV has explorations and production activities in 19 countries on five continents and has in total ca 41,000 employees. The OMV group has 2520 gas stations under the names "OMV", "Avanti" and "Stroh". Market share with all products in Austria: ca 34,21%</p> <p>Within bio-energy - OMV is for example investing in infrastructure both for CNG and E85 vehicles at the moment in accordance with the 5 point programme, where they act as a partner. Also involved in the pilot project in Bruck for biogas as fuel as also part owner of the joint-venture Econgass. The first gas station for E85 will be opened on the 1st of October in Vienna under brand "Avanti."</p>

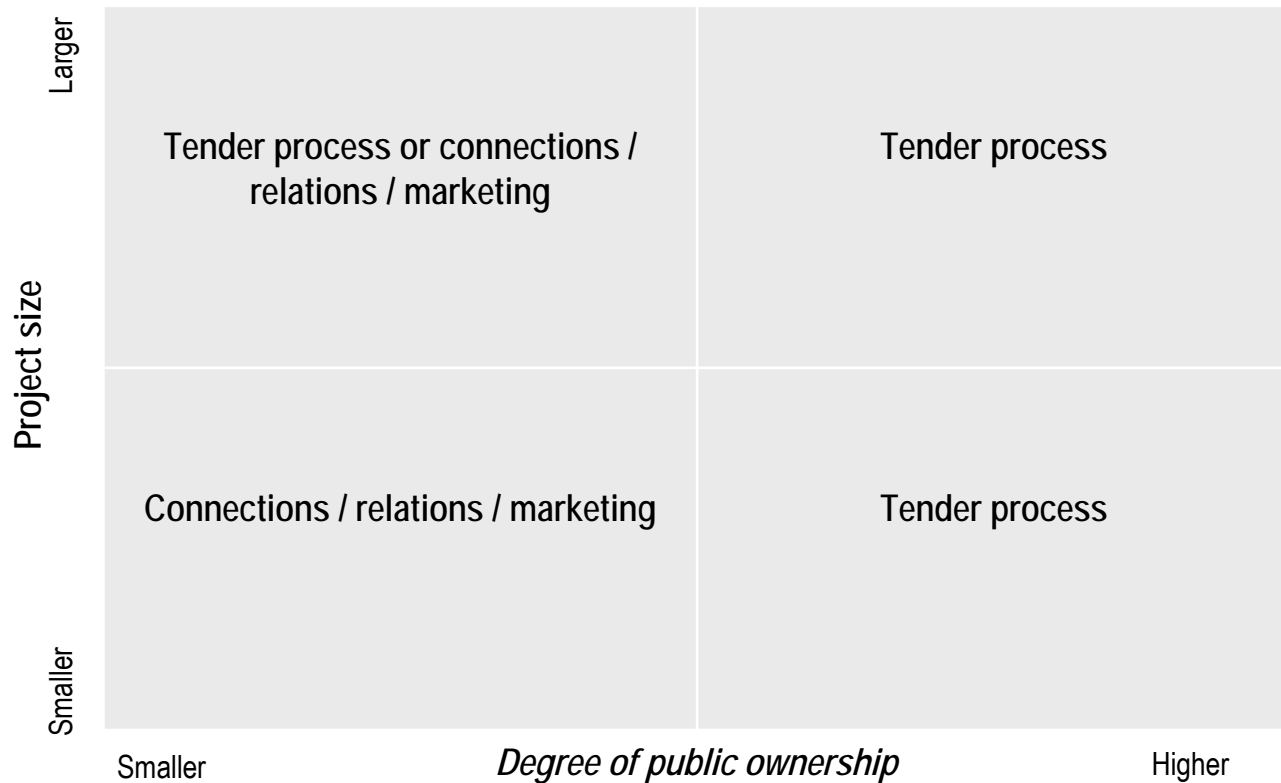


Firewood, wood chips and pellets belong to the preferred heating techniques for smaller scale heating

Bio energy – most common technologies		
Heating / cooling	Electricity	Transport
Today		
<ul style="list-style-type: none"> • CHP plants based on biogas and biomass technology • Split wood, wood-chip and pellet furnaces • Pellet burners 	<ul style="list-style-type: none"> • Mainly CHP technology based on biogas and biomass technology 	<ul style="list-style-type: none"> • Bio diesel from rapeseed/ recycled oils • Bio methane as fuel
Trends		
<ul style="list-style-type: none"> • Pellet systems for individual households (same as above) • District heating plants and systems supplying family houses with heat • Heating with straw, energy grain • Biogas from organic waste 	<ul style="list-style-type: none"> • More advanced CHP technology • Trend towards larger plants • Biogas from organic waste 	<ul style="list-style-type: none"> • E85 • Bio methane/biogas as fuel • R&D for 2nd generation biofuels

All projects over a size of 40.000* EUR must be handled through a tender process

Purchasing process relative to project size and degree of public ownership

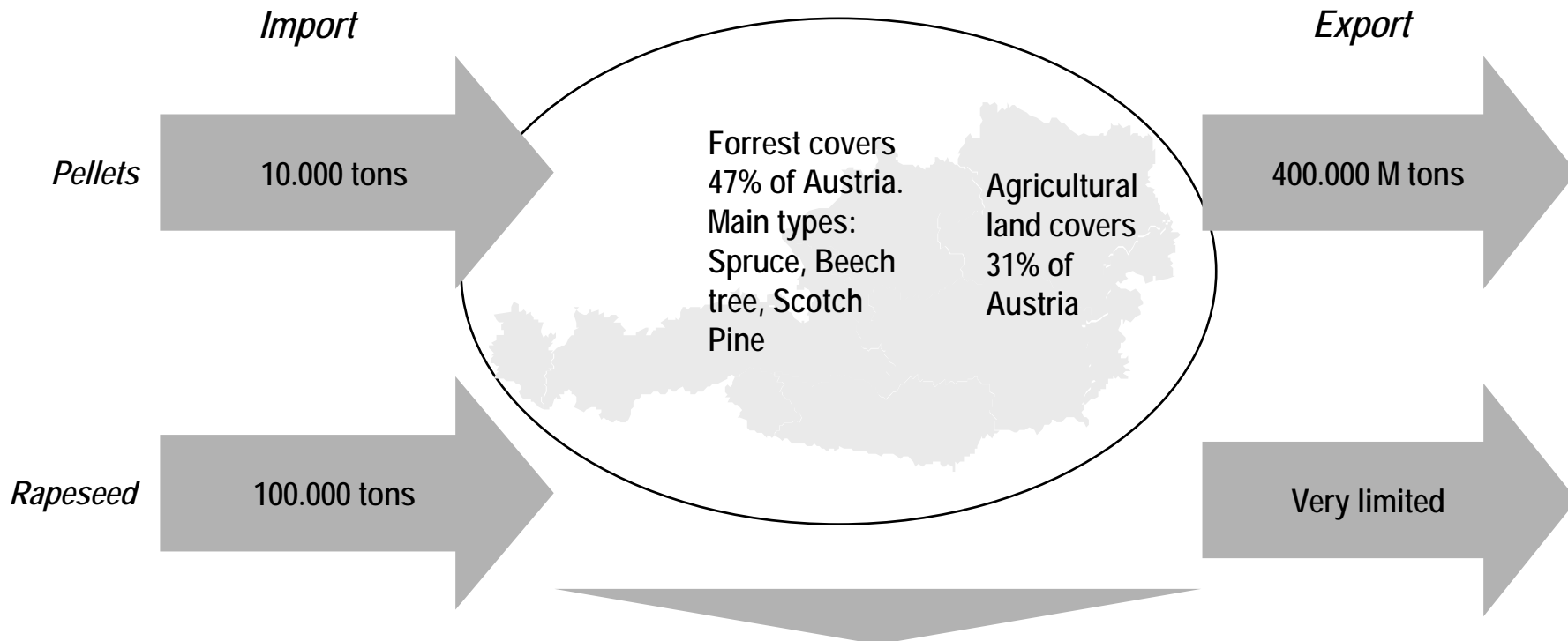


Private relationship do count

- Projects over 40.000 EUR are handled as public tenders
- Some projects for private corporations are handled through a normal purchasing process where relations play a crucial role
- Bundesbeschaffung –Austrian managing authority for tenders
- Information on current projects and tenders can be found in the Austrian official journal
- Austrian Energy Agency provides info on international energy projects

Pellets supply is mainly secured within Austrian borders

- However a large degree is exported to countries like Holland and Italy



- Production of pellets was in 2007 >900.000 tons and consumption was estimated to 500.000 tons
- Austria has fairly little import of pellets but is very dependent on import of rapeseed
- Import of pellets mainly come from Germany whereas rapeseed comes from Eastern European countries
- Austria will most likely stay dependent on import of rapeseed for next future years as biodiesel increases

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The largest competitors and complementing companies include Fröling, Jenbacher and OMV

Bio energy – main competitors and complementing entities		
Heating / cooling	Electricity	Transport
National		
<ul style="list-style-type: none"> • Fröling • Binder • Pfeifer • Guantamatic • Windhager • Ökofen 	<ul style="list-style-type: none"> • Jenbacher • Andritz • Austrian Energy & Environment • Thöni • Many smaller local consulting companies focusing on CHP 	<ul style="list-style-type: none"> • OMV • BDI Biodiesel International • Vogelbusch • Agrana • Frings Austria
International		
<ul style="list-style-type: none"> • Viessman group (D) 	<ul style="list-style-type: none"> • MAN (D) • E.O.N (D) • Haase Energietechnik (D) 	<ul style="list-style-type: none"> • BP (GB) • Agip (I) • General Motors (USA) • Ford (USA) • Alfa Laval (S)



Fröling is a leading manufacturer of wood heating systems

– Represented on the Swedish market through reseller

Category	Developer and manufacturer of wood heating systems
Line of business	Fröling concentrates on production in the areas of heat boilers, heat exchangers, tanks, reservoirs and containers of metal for industrial plants and construction of district heating systems. Product range: Firewood boilers, pellet heating systems, waste wood heating systems, tank systems
Turnover	Approximately 140 M EUR
Ownership structure	Main owner is the company Dr. Ernst Hutterer Beteiligungs GmbH (58,33%), which in turn is owned by General Manager Dr. Ernst Hutterer
Growth	Company has developed strongly over last years. Today approx. 70% goes on export. Main area of export: Western Europe; Germany, Italy, Scandinavia, Benelux and France.
Comments	Fröling is a best practice when it comes to heating systems for domestic use and has been active on the market for over four decades specialising in extracting heat from biomass. Today – more than 100,000 wood heating systems are in use in Europe. Fröling is represented through reseller in Sweden and on many other European markets. The company also makes investments in R&D to find new and efficient possibilities to make use of wood fuel and burning alternative biomass fuels.



Jenbacher is a world leading producer of gas engines – Active in projects all over the world

Category	A market leading manufacturer of gas engines
Line of business	Jenbacher manufactures gas engines, electric motors generators and transformers, central heating radiators and boilers and steam generators, turn key generator sets, cogeneration power stations, components for heat installations etc. Both natural gas, biogas, or other special gases can normally be used in the engines.
Turnover	Approx. 470 M EUR (and 1350 employees) in Austria
Ownership structure	Owned by General Electric (US) since 2003
Growth	Jenbacher is active on markets all over the world, depending on project availability. The company has grown steadily, especially since they were acquired by General Electric in 2003, and is expected to have continuous growth also over next years.
Comments	<p>Jenbacher is a large and important Austrian industrial company, referred to as market leader in its segment.</p> <p>Jenbacher develops environmental friendly and high efficient gas engines with capacity variations between 150 to 2800 KW.</p> <p>Most recent projects include:</p> <ul style="list-style-type: none"> • Jenbacher has installed gas engines at South Africa's First Emissions Credit-Funded Biogas Plant • Jenbacher has installed a third Jenbacher unit at its mills to utilize biogas at Natural Palm Oil Ltd. in southern Thailand • Jenbacher provides generator-sets to Australian Base-Metal Mine



Austrian Energy & Environment (AE & E) is a leading provider of thermal power generation and environmental engineering

Category	Supplier of environmental engineering
Line of business	AE & E supplies thermal power generation and environmental engineering. Offers special competence in the areas of fluidised bed boilers, industrial boilers and gas cleaning systems.
Turnover	613 M EUR (2006)
Ownership structure	AE & E belongs to Vienna listed A-TEC Industries AG which, in turn, an international industrial group, employing around 11,000 people in about 15 countries in Europe, USA and Asia and with operations in drive systems, plant engineering, machine tools and metallurgy. AE & E has own subsidiaries in India, Australia, Czech, Spain, Switzerland, Croatia and China.
Growth	Strong development both in terms of turnover and ebit for whole group as also in particular for company AE & E over last years. Turnover for group increased with > 200% from 2005 to 2006.
Comments	<p>Austrian Energy & Environment (AE&E) is an internationally leading supplier in its area. The company offers its know how to customers like public and private energy producers, local authorities and industry.</p> <p>The company is active on a variety of markets – foremost in Europe: France, Scandinavia, Germany, Austria etc.</p> <p>AE & E's services could complement Swedish technology when it comes to providing product equipment for plants.</p> <p>Example of recent projects:</p> <ul style="list-style-type: none"> • Söderhamn Energi (S) – Bubbling fluidised bed system with start up 2007 • Energi AG (A) - Bubbling fluidised bed system • Stora Enso (BE) –Biomass technology • Voestalpine STAHL (A) – supply, install. and start-up of one of the world's largest top/coke gas fired steam boilers



Biodiesel International BDI provides plants for biodiesel production - Implemented the world's first biodiesel plant in Austria in 1991

Category	Supplier of biodiesel production plants
Line of business	The company has specialised in production of complete, biodiesel production plants based on the multi-feedstock technology - i.e. plants that can produce biodiesel on the basis of various raw material (vegetable oils, waste edible oils, animal fats..)
Turnover	Austrian revenue around 31 M EUR (2006), International around 57 M EUR (2006)
Ownership structure	Listed on the Austrian Stock Exchange
Growth	The company places emphasis on international focus where the biodiesel market right now reveals dynamic growth. Based on the international business - year 2006 showed a turnover growth of 744%, and for national business - a growth of 291,7%.
Comments	Biodiesel International is a market leader within its segment and has customer references from three different continents. Biodiesel International launched first biodiesel plant based on rape seed in Mureck, Austria in 1991, and has since then supplied three continents with different type of biodiesel plants based on different technologies.

Vogelbusch provides engineering activities and contracting for ethanol – Could complement Swedish technology

Category	Engineering activities and contracting
Line of business	Company offers process engineering and plant construction services for fermentation, separation, distillation and evaporation technology. Focus is on contracting of customer made industrial scale alcohol plants.
Turnover	22 M EUR
Ownership structure	Privately owned by general manager Gottfried Sodeck
Growth	Vogelbusch is today active with subsidiaries in Hong Kong and USA and have project based operations in mainly Europe, Asia, US. One of the most recent projects carried out in Iran.
Comments	<p>Vogelbusch is an internationally active company in the engineering and construction of industrial scale alcohol plants. Customers are within the sugar, starch, pharmaceutical, chemical and food industry.</p> <p>Vogelbusch's technology could complement Swedish solutions on the area of bioethanol</p> <p>Example of projects carried out in Europe/Asia carried out:</p> <ul style="list-style-type: none"> •Bioethanol plant (USA) •Bioethanol (Germany)

There are several large Swedish companies on the Austrian market - Most have been present for years

Company	Line of business	Local position	Large projects	Contact data
ABB	Power and automation technologies	Locally well known, good market recognition	N/a	ABB AG Clemens Holzmeister Str. 4 1109 Wien +43 (0) 601 09 0
AlfaLaval	Equipment, systems, and services for liquid/solid separation, heat transfer and treatment, and fluid handling.	Locally well-known, good reputation.	Active within delivering technology for several plants within biodiesel and ethanol. Also taken part in international projects for Austrian customers.	Alfa Laval Mid Europe GmbH Industrie Zentrum-NÖ-Süd Strasse 2/M7/1 2355 Wiener Neudorf Tel: +43 2236 68 20
IKEA	Production/Distribution of furniture	Strong Swedish brand, good market recognition	Making investments and places gradual emphasis on environmental friendly solutions.	IKEA Möbelvertriebs GmbH Südring 2334 Vösendorf Tel: +43 (0) 69 000
Atlas Copco	Compressed air and gas equipment, generators, construction and mining equipment, industrial tools	In total – 3 different subsidiaries in Austria focusing on compressors, tools or construction/milling.	Recent project example with Energie AG where Atlas Copco supplied compressors for electricity plant of waste material.	Atlas Copco Kompressoren und Drucklufttechnik GmbH Csokorgasse 11 1100 Wien Tel: +43 (0) 76012 240



Swedish vehicle manufactures are wellknown on the Austrian market - have technology developed for biofuel for transports

Company	Line of business	Local position	Large projects	Contact data
SAAB cars	Car manufacturer	Well known on local market. Saab Austria is a business unit under General Motors Austria	Active in initiatives for promoting bioethanol as alternative fuel	Saab Austria General Motors Austria GmbH Groß-Enzersdorfer Str 59 1221 Wien Tel: +43 1 288 77-2396
Volvo Cars	Car manufacturer	Volvo cars has a strong brand on the local market.	Active in initiatives for promoting biogas as alternative fuel	Volvo Car Austria GmbH Am Concorde Park 1/A 1 2320 Schwechat Tel: +43 (0) 701 28
Scania	Manufacturer of trucks and buses	Wellknown in Austria. Present in country since 1971.	Internationally - Scania applies gas, ethanol and RME technology	Scania Österreich GmbH Johann-Steinböck-Str 4 2345 Brunn am Gebirge Tel. +43 (0)2236/3902-0
SKF	Rolling bearings, seals, mechatronics, services and lubrication systems.	SKF Austria is known as one of the most innovative and productive subsidiaries of the company	N/a	SKF Österreich AG Seitenstettner Str. 15 4400 Steyr Tel: 07252 / 797 0

Some smaller companies have chosen to work through resellers - as an alternative to sell directly from Sweden

Company	Line of business	Local position	Large projects	Contact data
Stora Enso	Production of pulp and paper	Strong position within its field in Austria. Austrian office also responsible as a hub towards several countries in Eastern Europe	Activities within biomass plants	Stora Enso Austria GmbH Wagramer Str. 19/21 1220 Wien Tel: +43 (0)1 54655 0
Volvo Buses and Trucks	Manufacturer of buses and trucks vehicles	One of the leading producers of buses and trucks	N/a	Volvo Austria GmbH Volvostr. 1 2512 Tribuswinkel Tel: +43 (0)57500
Sweden Power Chippers	produces complete solutions for small scale pellet manufacturing	Represented on the Austrian market through local reseller	N/a	Handl Maschinen GmbH Trauseneggerdamm 5 4600 Wels Tel: +43 (0) 7242 66871 21
Svensk Rökgasenergi	Providing technology for flue gas condensing systems, dust separation and drying processes	Represented on the Austrian market through local resellers situated in Switzerland	N/a	H.Baumgartner & SohnAG Neuhofstrasse 52 CH-8315 LINDAU Tel. +41-52-345 28 24



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Contact list - Austria

Company	Contact person
Austrian Chamber of Commerce – WKO	Ms. Andreas Stockinger
Austrian Biomass Association	Mr. Stephan Grausam
Ministry of Environment	Mr. Blaser
Ministry of Environment	Mr. Bauer
WienEnergie	Mr. Kondel
ProPellets	Mr. Christian Schlagitweit
ARGE Biogas	Mr. Kirchmeyr
Bundesbeschaffung	Ms. Stocker
ÖKL Österreichisches Kuratorium für Landwirtschaft	Mr. Gollner
AlfaLaval	Mr Mixta
E-control	Ms. Christina Helig
Austrian Energy & Environment	Mr. Erwin Hager
Austrian Energy Agency	N/a
Biogas Wels	N/a
O.Ö Energiesparverband	Ms. Christiane Egger

List of used reports - Austria

Organisation	Report
WKO	"Renewable Energy - Technology competence from Austria"
Federal Ministry of Transport, Innovation and Technology	"Renewable Energy Sources and technologies in Austria"
Biomasseverband	"Tullner Erklärung"
Austrian Government	"Regierungsprogramm 2007"
Biomasseverband	"Biogas als Treibstoff"
WKO	"Referenzanlagen"
Chamber of Agriculture Lower Austria	"PK Biomasse aus dem Wald, 15. Mai 2007"
Chamber of Agriculture Lower Austria	"Biomasse - Heizungserhebung 2006"
Ministry of Environment	"Biokraftstoffe im Verkehrssektor in Österreich 2007"
Club Niederösterreich	"Multitalent Biogas"
Biomasseverband	"Biogas als Treibstoff"
Biomasseverband	"Biowärmeseminar 2007"