



Action plan for Swedish bio energy companies - Spain -

Version 1.0

Swedish Trade Council (STC)
2007-10-29



CONTENT

- Introduction and background
- Local action plan
- Market analysis
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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 Spanish 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



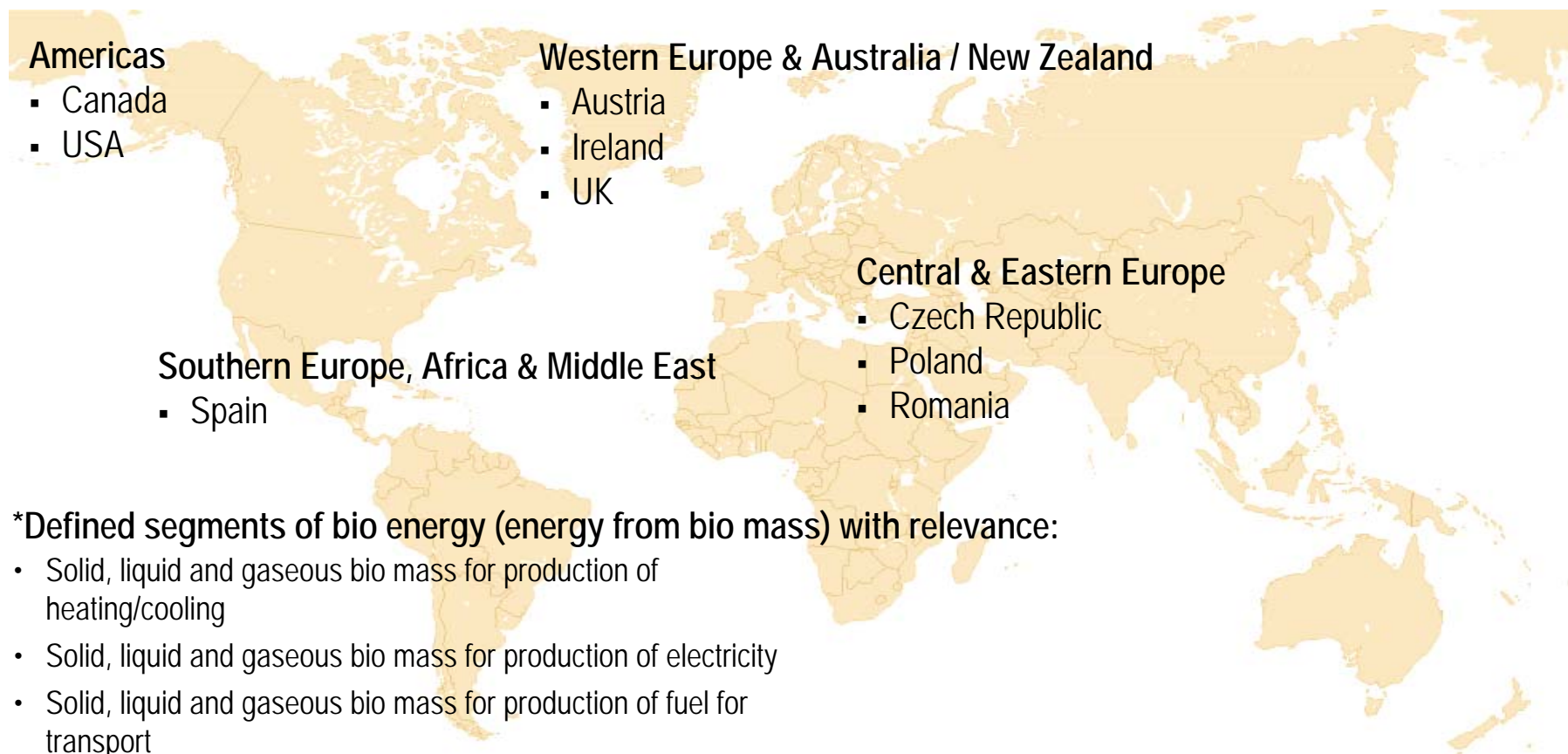
The 25 countries are found in five regions*

- 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"

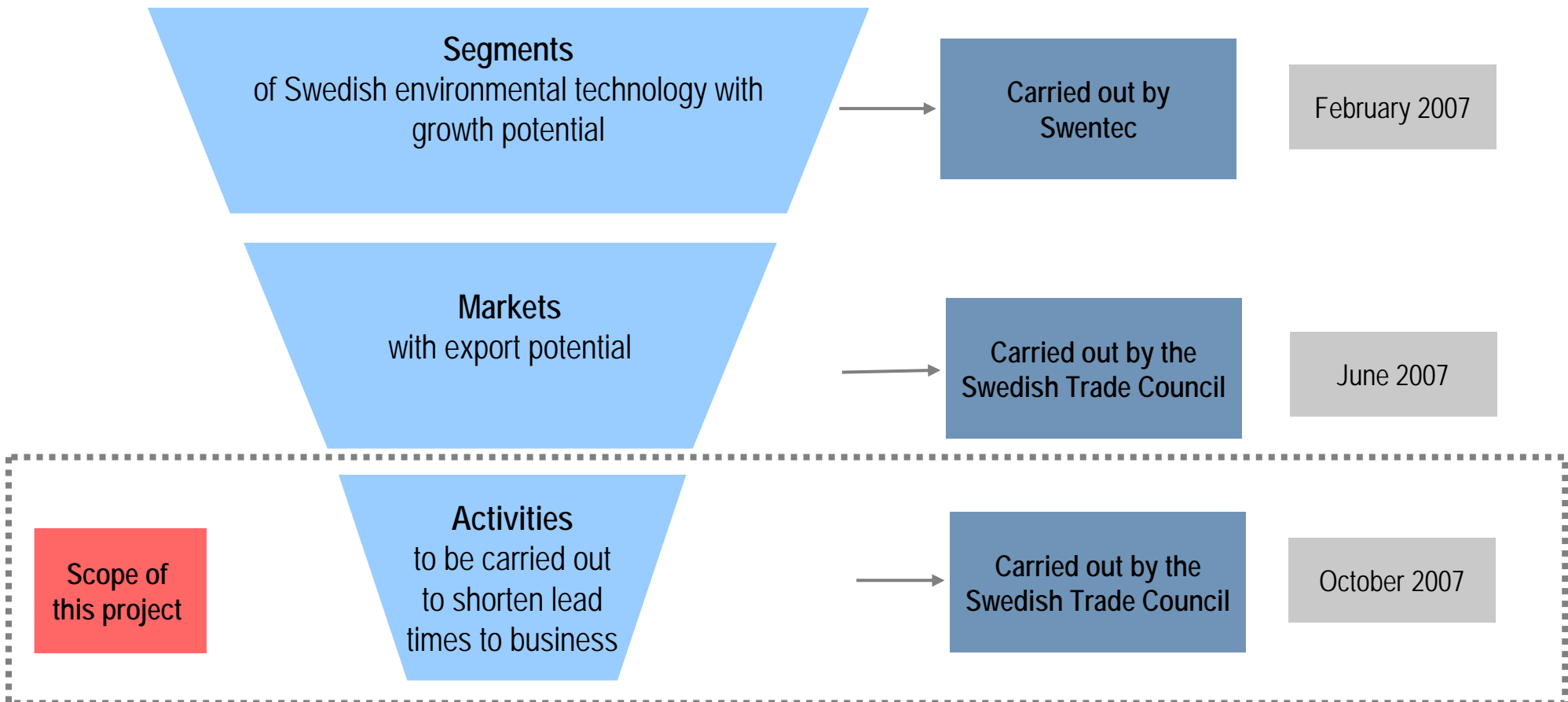
- Austria
- USA

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

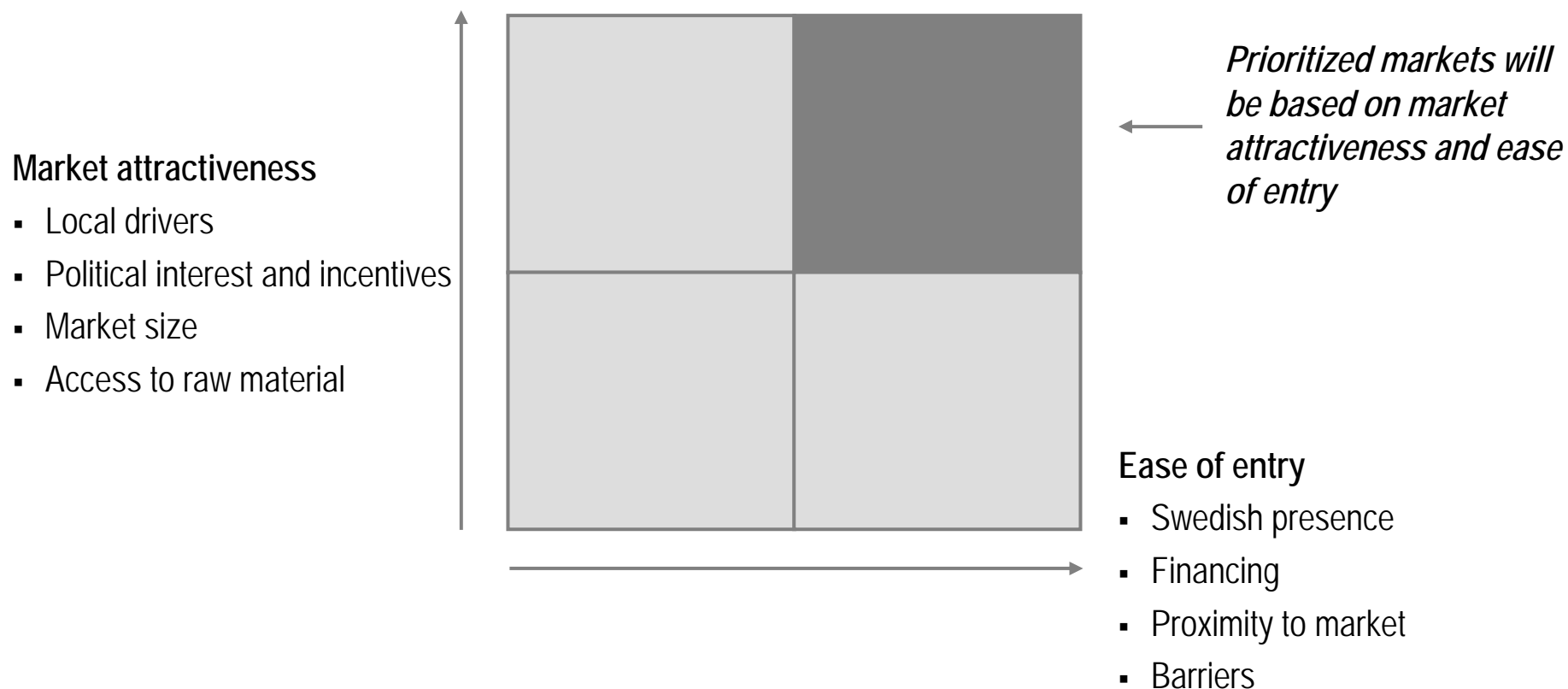


Funnel approach to zoom in on segments, markets and activities with largest potential for export



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

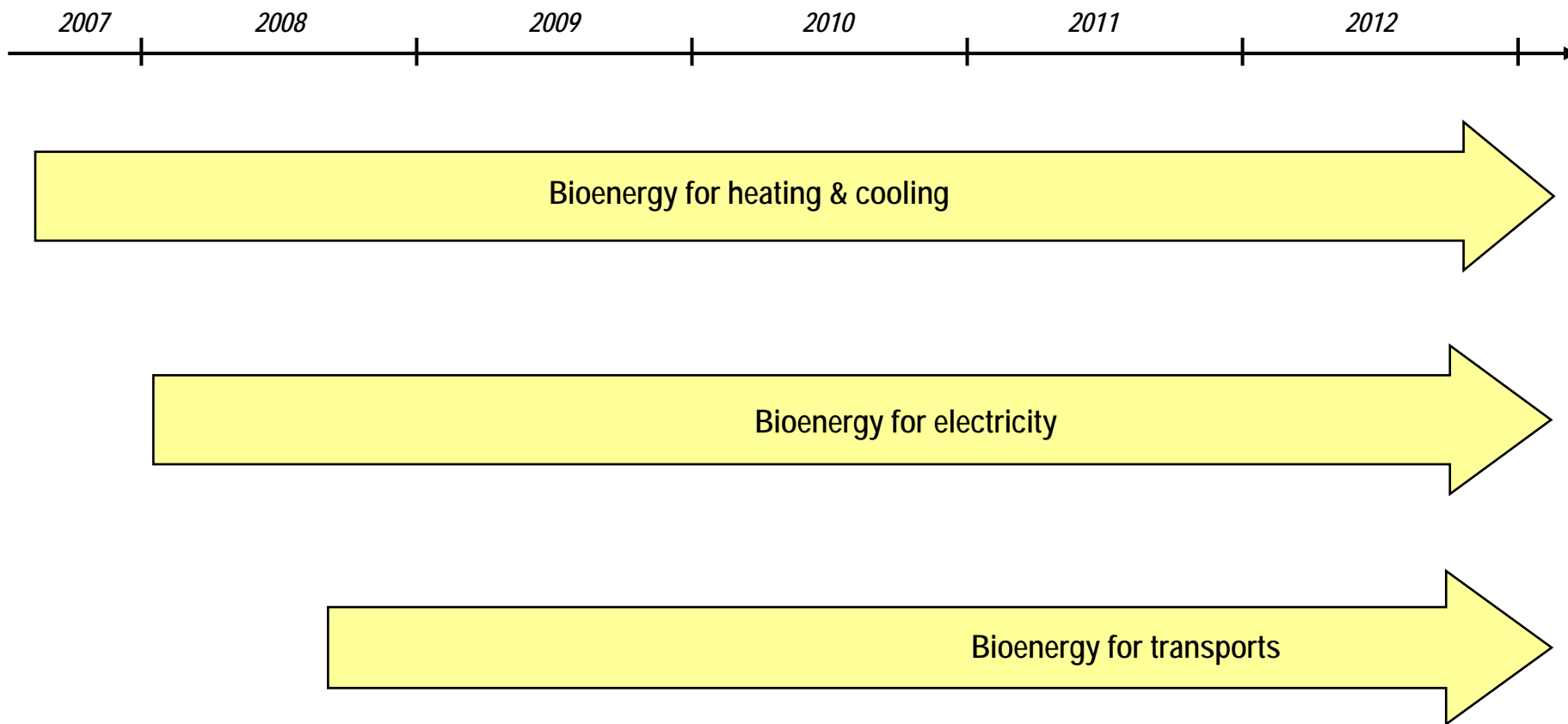
Term / abbreviation	Definition
Environmental technology	All technologies whose use is less environmentally harmful than relevant alternatives. Environmental technology are according to ETAP categorized into the following areas; air pollution control, bio energy, district cooling/heating, energy efficiency, 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, bioenergy, hydro etc.
Market	In this report a market is defined as a geographical country.
PSE-Cultivos	Fuel crops
alperujo	A solid by-product of the two-phase centrifugation method for olive oil extraction



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SHORT TERM HEATING & COOLING AND ELECTRICITY ARE THE MOST ATTRACTIVE SECTORS WITHIN THE SPANISH BIO ENERGY MARKET



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HEATING & COOLING - SHORT AND MEDIUM TERM OPPORTUNITIES

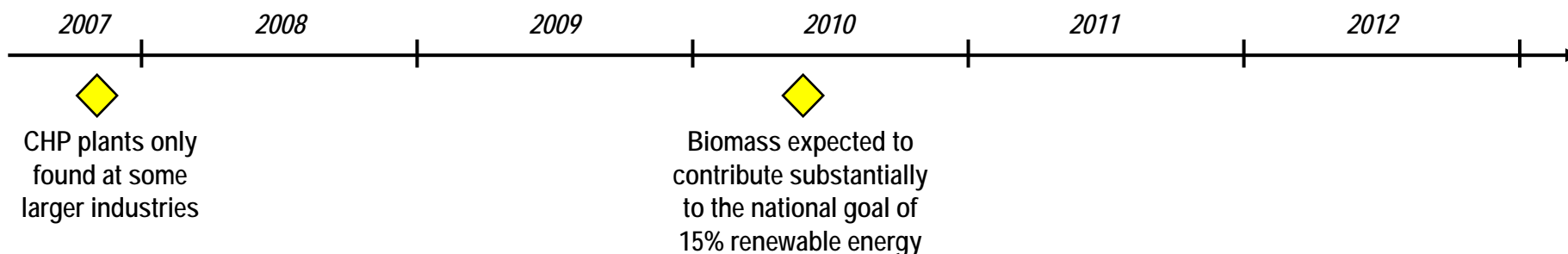
Timeline according to type of company

Refined products	Burners and boilers and associated machinery	CHP plants to communes and industry	Power plants using wet biomass
Know how (private consumers, industries and communes)	Burners and boilers as well as associated machinery and infrastructure	Use of CHP particularly in combination with district heating	Use of wet biomass for energy production
Raw material	Wood-chips and pellets	Wood/Pellets to CPH plants	Wet biomass
	Now	Time	2012

- Immediate opportunities for Swedish producers of small/medium sized boilers and burners that use solid biomass
- The lack of infrastructure to distribute heat to households limits the short term opportunities for larger CHP plants with the exception of industrial settings
- As the infrastructure improves by the introduction of district heating, there will be more opportunities for larger CHP plants

Producers of burners/boilers that use solid biomass should act now

HEATING & COOLING: MAINLY ABOUT SOLID BIOMASS



Comments

- Spain has a large potential for production of biomass estimated to 20-25 Mtoe per year.
- The chain of value within the sector for domestic heating using solid biomass is starting to move quickly
- The growth of the sector has up until now mainly been driven by investments in large/medium sized plants in the industrial and public sector
- The lack of district heating networks is a severe structural barrier to the future growth of the sector
- No power plants using wet biomass has been built in Spain

Actions

- Swedish producers of small to medium sized boilers and burners that use solid biomass should act now
- Growth of the sector will require large investments in infrastructure as well as technology for harvesting and transport
- Producers of larger CHP plants should await the build up a district heating
- Use of wet biomass is a largely unexplored area

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THERE ARE SEVERAL LARGE BIOENERGY PROJECTS EXPECTED TO BE INITIATED AROUND 2009

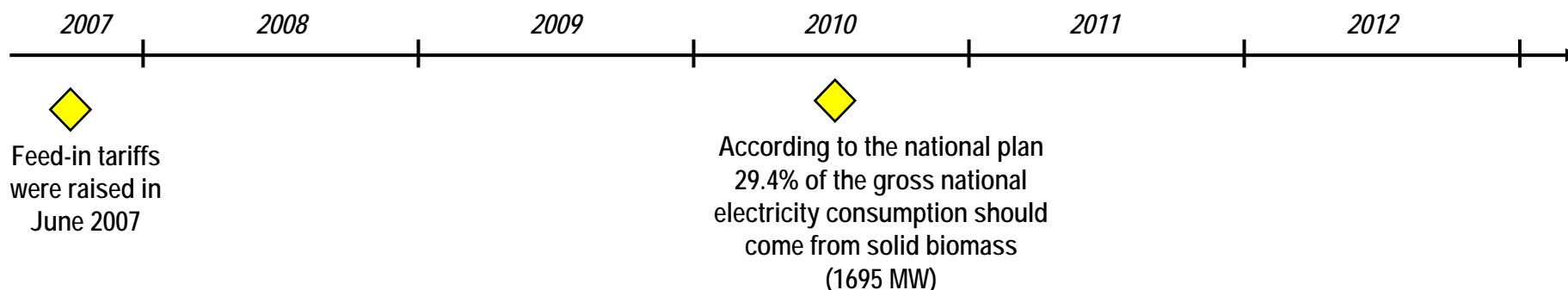
Timelines according to type of company

Refined products	Turn-key power plants Machinery for harvesting, chipping and transport of biomass Distric Heating	CHP plants
Know how	Production of electricity from biomass and supporting logistic solutions and infrastructure	
Raw material	Solid biomass	
	<i>Now / Time</i>	2012

- Great opportunities for Swedish producers of turn-key electricity power plants
- Spain currently lacks the infrastructure to combine electricity production with district heating

The currently low interest for CHP could become an opportunity in the medium to long term

SOLID BIOMASS FOR PRODUCTION OF ELECTRICITY IS AN IMMATURE SEGMENT WITH A LARGE POTENTIAL



Comments

- Electricity production from solid biomass is seen as key to achieve the ambitious goals put forward in the national plan
- 1500 MW of production capacity using solid biomass to be constructed in the next 3-5 years of which 20-30% is expected to come from wood residues
- Supply: Agricultural, industrial and forest residues are not fully utilized mainly due to poor logistics and lack of infrastructure
- To stimulate investments a feed-in tariff or a premium price is paid on top of the market price

Actions

- The required rapid increase in capacity will provide great opportunities for suppliers of turn-key power plants
- The rapid build up will also generate opportunities for suppliers of machinery for harvesting, chipping and transport of biomass
- Associated business opportunities for consulting services in the areas of logistics, management and financing

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BIOENERGY FOR TRANSPORT HAS A SMALL DOMESTIC MARKET BUT THAT COULD CHANGE WITH THE INTRODUCTION OF BIODIESEL

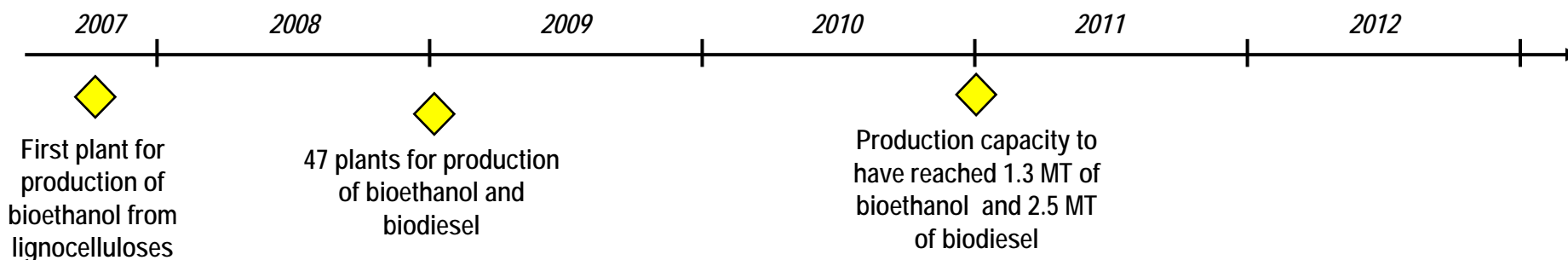
Timeline according to type of company

Refined products	Bioethanol from energy crops	Biodiesel from oil crops and biogas	Bioethanol from ligneous materials
Know how		Logistics and infrastructure for distribution of biofuels Production of biodiesel	Production of bioethanol from ligneous materials
Raw material	Energy crops	Oil crops and biogas	Agricultural and forestry products
	Now	Time	2012

- Spain is one of the leading countries in Europe when it comes to the production of bio ethanol from energy crops
- The next generation bioethanol will be produced from ligneous materials
- Spain participates in the development of more efficient methods for production of biodiesel using raw materials such as oil crops and biogas
- The domestic car and transport fleet runs mainly on diesel which makes biodiesel the most attractive biofuel

The market should be closely monitored as the development in the segment could accelerate

BIODIESEL WILL BE THE NEXT MAJOR AREA FOR TECHNOLOGICAL DEVELOPMENT AND INVESTMENTS



Comments

- The Spanish biofuel sector is composed of two sectors; bioethanol and biodiesel. Other types of biofuels (Biogas, BTL and BioHydrogen) have not been developed
- Main Feedstock: bioethanol; cereals (wheat and barley) wine alcohol, biodiesel; vegetable oils and fats
- A trend change from 2007 as production of biodiesel will exceed bioethanol for the first time
- Full tax exemption for Biofuels until 2012

Actions

- While production covers the current need it will be necessary to boost consumption in order to meet the target of 5.75% biofuel by 2010
- New promotion activities;
 - extend tax exemptions, first 10 y of the biofuel plant)
 - national obligations for blending
 - support measure for the rural sector to fully exploit the CAP possibilities
 - subsidies and loans for producers
 - captive fleet project funding

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SPAIN

Country facts

Population:	45 million
GDP/capita:	\$ 27.000
GDP growth:	3.5 % (2007)
Swedish export:	33.4 bn SEK
Swedish export, growth:	20 %

Bioenergy facts

Feed in tariffs:	950 SEK/MWh (biomass) 1.380 SEK/MWh (energy crops)
RES in energy mix:	20 % RES-E
Available financing sources:	EU, Spanish Government and private investors
Available programs/initiatives:	Initiatives from governmental and private sector/organizations
National Energy Plan:	Yes and in some case even more ambitious regional plans
Availability of raw material:	Agricultural crops and residues (very high), industrial residues and forest residues (the later two not fully utilized)
Domestic expertise:	Medium
Environmental public awareness:	Medium
Bioenergy companies present:	Nibe, Bruks Klöckner, Econova
Active Swedish regional networks:	Västra Götalandsregionen



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GOOD BUSINESS OPPORTUNITIES AND SOME CHALLENGES - AN AMBITIOUS 10 YEAR NATIONAL PLAN HAS BEEN ADOPTED

Business opportunities

- Electricity: a capacity of 1500 MW of electricity generation from biomass to be constructed in the coming 3-5 years of which 20-30% is expected to use wood residues
- Heating/Cooling; the market for domestic heating using bio energy has a large potential particularly if local producers of pellets turn their interest from export to the local market
- Transports; Spain is the leading and one of the most innovative producer of biofuels in Europe despite a virtually unexplored domestic market

Challenges

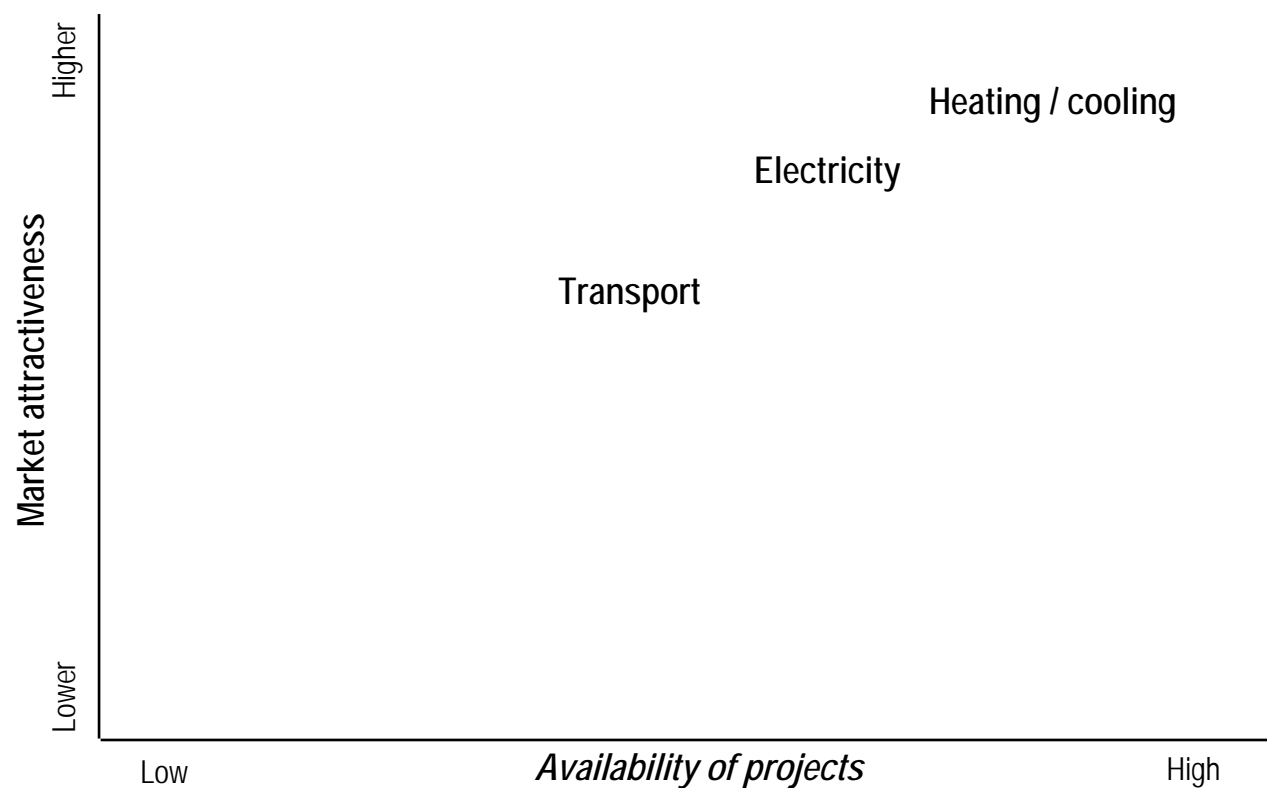
- A genuine risk that the governments ambitious plans will not fully materialize as the government mainly relies on the private market to finance and implement change
- Lack of infrastructure to exploit the full potential of bio energy opportunities e.g. district heating and transport
- The domestic use of biofuels is short term limited to biodiesel
- Domestic low cost competitors as already demonstrated in the more mature areas of hydro, wind and solar power

Conclusion

- Increased investments in renewable energy is a priority for the government that upholds a large support from the general public but the policy is so far mainly associated with the large and very successful investments in solar, hydro and wind power
- The planned rapid build up of the capacity for electricity production from biomass provides a great opportunity for Swedish suppliers of turn-key power plants and associated products/services/know-how such as machinery for harvesting, chipping and transport of biomass
- A growing production of pellets (30.000 tons 2006) is likely to open up a substantial market for small/medium sized pellet/wood-chip burners for mainly domestic use as most cities lacks the infrastructure for district heating
- Opportunities for Swedish companies in the transport and biofuel sector is generally more long term, with a possible exception of biodiesel, and dependent on the successful development of technology for production of bioethanol from wood residues

ALL THREE BIO ENERGY SEGMENTS ARE PRESENT IN SPAIN - BEST OPPORTUNITIES WITHIN HEATING & COOLING AND ELECTRICITY

Market attractiveness and availability of projects



Spain has attractive market for domestic heating and electricity

- Heating & cooling using biomass is the segment with the most attractive market and a great potential for Swedish companies particularly within domestic heating e.g. small/medium sized heating systems using pellets
- Electricity production from biomass has been highly prioritized by the government as it is seen as a necessary technology to reach the ambitious goals set out in the national plan. There are several projects planned for the next 3-5 years
- Transport – production of bioethanol is the most mature bioenergy sector despite the absence of a domestic market. Biodiesel is more compatible with the domestic demand and the first major project for large scale production will start up next year.

SOME LEARNINGS FROM THE SPANISH BIO ENERGY MARKET

Indications from the market

- Spain is concerned about its dependence on imported energy
- Electricity production and domestic heating from biomass are prioritized areas
- Spain is a European leader in production of liquid biofuels from energy crops, particularly bioethanol and increasingly biodiesel
- A growing interest from customers for bioenergy but local suppliers often lack the technically and financially viable solutions
- More sophisticated machineries for harvesting, chipping and transport will be required for an expanded and more efficient production of biomass
- The majority of the future investments will come from local private financiers
- The tender process in Spain follows the EU norm but be aware of the Spanish business culture
- A positive view on Swedish technology and know-how

Implications

- The sector will attract large investment and a number of international companies
- It will be tough competition on what is to be one of the leading markets in Europe not least from low cost domestic producers
- Success in Spain could become an important first step into the larger European market
- For Swedish companies are solid biofuels for heating/cooling and production of electricity the best early opportunities
- To be successful one needs to learn how to work the Spanish market and the most efficient way could be to partner up with a domestic company
- A market that Swedish companies with a European perspective can't afford to ignore

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HEATING & COOLING IS A MARKET WITH IMMEDIATE OPPORTUNITIES

Bioenergy – description of the market

Heating & cooling

- The consumption of energy extracted from biomass has increased by 15% since 1998
- The growth has mainly been driven by investments within the industrial and public sector
- There are plenty of encouraging examples of large and medium size facilities using solid biomass for heating at industries, farms, schools, hospitals and government buildings
- The economic and technological success of these larger facilities generates an increasing interest also among small private consumers creating a new and rapidly growing market for domestic heating that if fully realized will increase the demand for pellet burners/heaters, pellets/chips and not least equipment to be used by domestic producers of pellets and chips
- The new energy policies will drive the need for increased efficiency of burners/boilers for individual heating as well as to adapt them to the use renewable and long term financially competitive fuels
- The chain of value within the sector for domestic heating using solid biomass is starting to move very quickly
- The production of pellets in Spain will exceed 30. 000 tons in 2007 but almost the entire output is set for export
- Supply; local producers of pellets/chips might turn to the domestic market instead of export when demand and prices picks up thus allowing for a rather quick build up of the domestic market without an immediate shortage of biomass
- The lack of district heating networks is a severe structural barrier to the future growth of the sector
- No power plants using wet biomass as fuel have been built in Spain



ELECTRICITY IS A MARKET WITH SOME DEFINED OPPORTUNITES

Bioenergy – description of the market

Electricity

- Electricity from biomass currently accounts for 16% of the total Spanish electricity production
- Electricity production from biomass corresponding to a capacity of 1500 MW will be constructed during the next 3-5 years of which 20-30% will come from wood residues
- This is almost in line with the revised “Plan de Energias Renovables of 2005” that sets a capacity target for the contribution of biomass by 2010 to 1695 MW
- The target to be achieved in 2010 will correspond to 29.4% of the gross national production of electricity
- To reach this ambitious target on time there will be a need for a rapidly expansion of capacity that realistically can only be achieved by large investments in a number of turn-key power plants
- To stimulate investments in this area a feed-in tariff or a premium price is paid on top of the market price
- The feed-tariffs were raised in June 2007 which might lead to a more rapid build-up than previously expected
- Furthermore the possibility of a cap and floor mechanism for the premium is being considered
- Low-interest loans that cover up to 80% of the reference costs are also available as a further financial incentive
- In a more long term perspective one can predict that there will be a reduction in support for new wind and hydro plants and an increased support for biomass, biogas and solar thermal electricity
- Business opportunities for consulting services in the area of logistic, management solutions and financing for biomass projects

SPANISH BIOFUEL PRODUCTION IS AMONG THE MOST ADVANCED IN EUROPE BUT AN UNDER DEVELOPED DOMESTIC MARKET

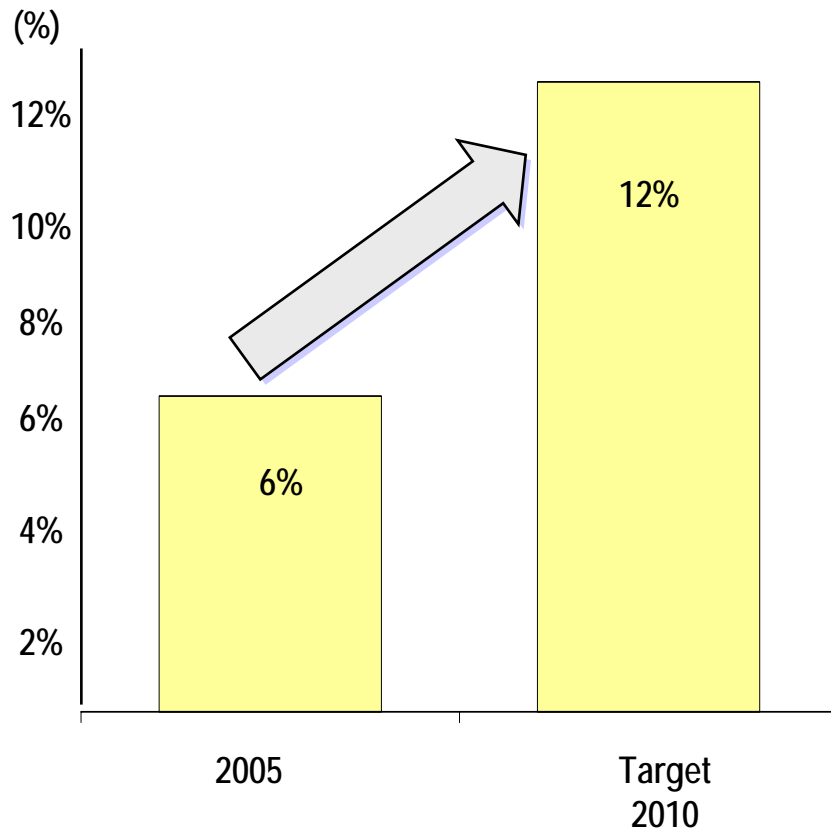
Bioenergy – description of the market

Transport

- The Spanish biofuel market is composed of two sectors; bioethanol and biodiesel
- Other types of biofuel (Biogas, BTL and BioHydrogren have still not been developed
- The biofuel production in Spain is among the most advanced within the EU particularly for bioethanol
- In 2006 more than a dozen production plants produced the equivalent of 549,000 tons of grain-based bio ethanol and oilseed-based biodiesel
- 11 additional plants will be constructed during 2007 and another 20 will be added throughout 2008
- New plant production plans have been announced to reach a 1.275.000 tons production capacity of 2010
- In 2010 its predicted that liquid bio fuels will account for 5.75% of petrol and diesel consumption for transport purposes
- Rather surprisingly there are just ~130 bio ethanol refuelling stations in Spain and 50% of them are in Barcelona
- The market share of bio ethanol is three times that of bio diesel but that will change within a few years
- The low domestic consumption and the highest capacity for production in the EU has made Spain a net exporter of bioethanol
- Spanish companies are to a large extent using raw material grown outside Spain for production of biodiesel such as soy oil from south America, palm oil from Colombia and Malaysia and rape seed from eastern Europe
- The potential for future growth will depend on the development of the international as well as the domestic energy markets
- The just initiated build up of production capacity for bio diesel provides the best opportunities for foreign companies.



THE AMBITION IS TO DOUBLE THE CONSUMPTION OF RENEWABLE ENERGY BY 2010



The ambition is to achieve an 100% increase of consumption by 2010

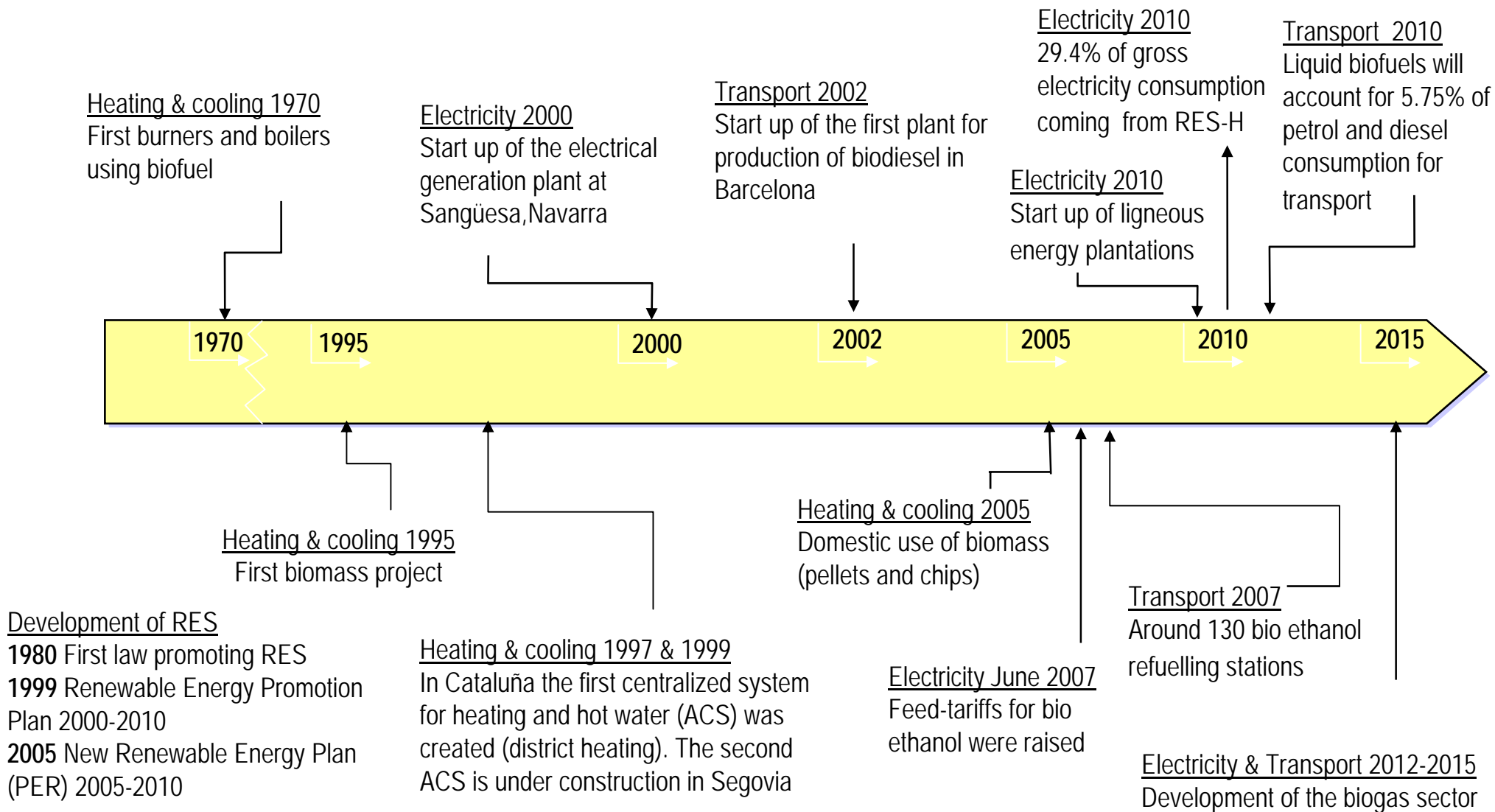
"The plan is too ambitious. What it is really important is that companies sees a niche of business in the sector and invest more"

Francisco Javier Diaz Gonzalez,
AVEBIOM

" The biomass is the source that will help us most to reach the goal"

Josep Turmo, APPA

KEY EVENTS IN THE BUILD UP OF THE SPANISH BIO ENERGY SECTOR



SOME SIGNIFICANT CHALLENGES IN THE SPANISH BIOENERGY MARKET

Bioenergy – major challenges

- The greatest hurdle, long and short term, to the development of a strong and sustainable bioenergy market is probably the lack of secure access to competitively priced biomass and other raw materials, today mainly due to the lack of logistics/know-how and in the future most likely due to an increased competition and environmental challenges
- Even though Spain is rich in biomass and with a great potential to produce many of the required raw materials much of the resources are located in areas that are difficult to get access to because of a poorly developed transportation infrastructure
- The logistic organization needs to be improved possibly by the establishment of logistic centers from which the provision of biomass to the power stations and domestic users can be guaranteed
- Another frequently mentioned risk is that the investments implied by the ambitious National Energy Plan will not fully materialize
- There are signs that many of the private investors that are expected to finance the bulk of the projects are not yet fully convinced that there are sufficient opportunities in the sector, at least not short term
- There are noticeable exceptions within the sector. Production of bioethanol have attracted large investments and there are well established domestic producers which makes it a less attractive sector for foreign companies
- The initiation of smaller projects, particularly within the private sector, are not always handled through an open tender process but rather as normal purchasing process were relations and direct marketing plays an important role. Lack of understanding for how to work the Spanish market can become a real challenge particularly for small foreign companies

RELATED CHALLENGES WITHIN EACH OF THE BIOENERGY SECTORS

Bioenergy – major challenges in each field		
Heating & cooling	Electricity	Transport
<ul style="list-style-type: none"> ▪ The reliable supply of sufficient amounts of competitively priced high quality biomass from mainly forest and agricultural waste ▪ The lack of energy plantations that continuously can provide biomass at sufficient quantity and quality ▪ Limited access to sources of biomass because of poorly developed infrastructure and logistics ▪ High investment costs ▪ Absence of sophisticated machineries for harvesting, chipping and transport of biomass ▪ Spain's high vulnerability to climate change. The production of many temperate crops is predicted to decline dramatically by the 2080s 	<ul style="list-style-type: none"> ▪ Largely the same challenges with respect to the reliable supply biomass as for the Heating & Cooling sector ▪ High investment costs ▪ The cost for producing electricity from biomass is still high which leads to a dependency on subsidies or a favoured tax status ▪ Difficult to combine good access to transmission with good supply of biomass since the best sources are usually found at remote locations with less developed transmission systems 	<ul style="list-style-type: none"> ▪ The energy plantations that would be required for a large scale domestic production of solid or liquid biofuels are not being developed ▪ Lack of experience in organizing a functional market for biofuels ▪ The lack of real incentives for consumers to switch to vehicles that can run on biofuels has led to a dependency on export ▪ The big fuel companies has so far shown no or little interest to promote or supply biofuel in their filling stations ▪ Import of subsidized biodiesel from EU threatens the emerging national industry. North American's biodiesel is sold in Spain below the cost of the current national production

MAJOR ENTRY BARRIERS WITHIN EACH OF THE BIOENERGY SECTOR

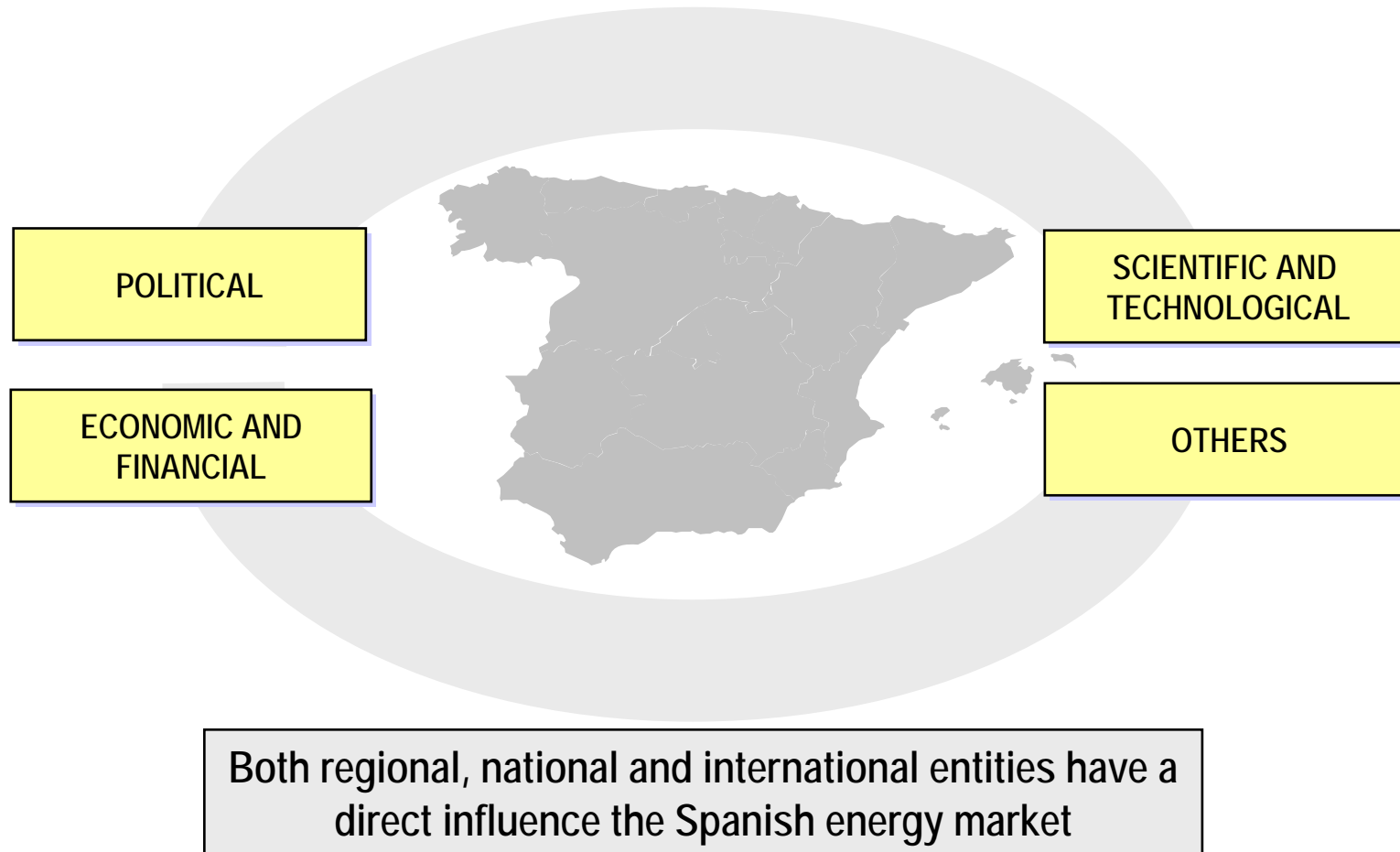
Bio energy – main entry barriers		
Heating & cooling	Electricity	Transport
<ul style="list-style-type: none"> ▪ Key market sectors seems to still be largely unaware of the short and long term benefits of bioenergy ▪ The customers and politicians have no or limited prior knowledge of renewable energy processes/systems and therefore little appreciation of the complexity of the required logistical and technical solutions ▪ High costs for the initial investments associated with the production of biomass from forest, agricultural and ligneous waste as well as energy plantations ▪ Lack of Know how ▪ Lack of infrastructure policy ▪ Lack of norms 	<ul style="list-style-type: none"> ▪ Low remuneration - the existing electricity plants using biomass largely lacks economic viability ▪ High capital cost ▪ Norms and certifications ▪ Tariffs 	<ul style="list-style-type: none"> ▪ Raw material production for biofuel production is affected by the mandatory retirement of land as laid out in CAP (Common Agricultural Policy) ▪ High market prices for raw material particularly for those that can also be used for animal feeding

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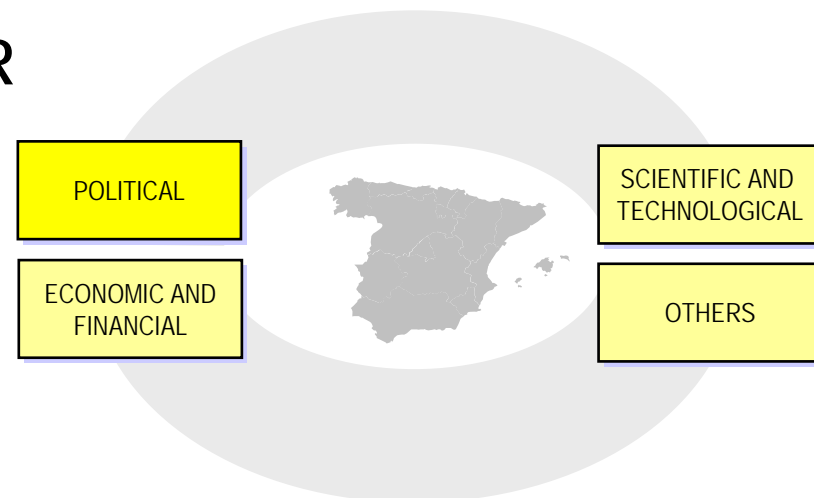
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AN OVERVIEW OF THE MOST SIGNIFICANT ENTITIES THAT HAVE A DIRECT INFLUENCE OVER THE SPANISH BIOENERGY SECTOR



THERE IS A POLITICAL INFLUENCE OVER THE BIOENERGY SECTOR



All three levels of the Spanish government; national, autonomous communities (CCAA) and municipal are important decision making bodies with a real influence on the development of the bioenergy sector

Significant national and international political bodies include:

- Ministry of Economy and Finance www.meh.es
- Ministry of Industry, Tourism and Commerce www.mityc.es
- Ministry of Environment (Main directorate of Biodiversity) www.mma.es
- Ministry of Agriculture, Fish and Feeding www.mapa.es
- EU

ECONOMICAL AND FINANCIAL ORGANISATIONS WITH A DIRECT INFLUENCE ON THE BIOENERGY SECTOR



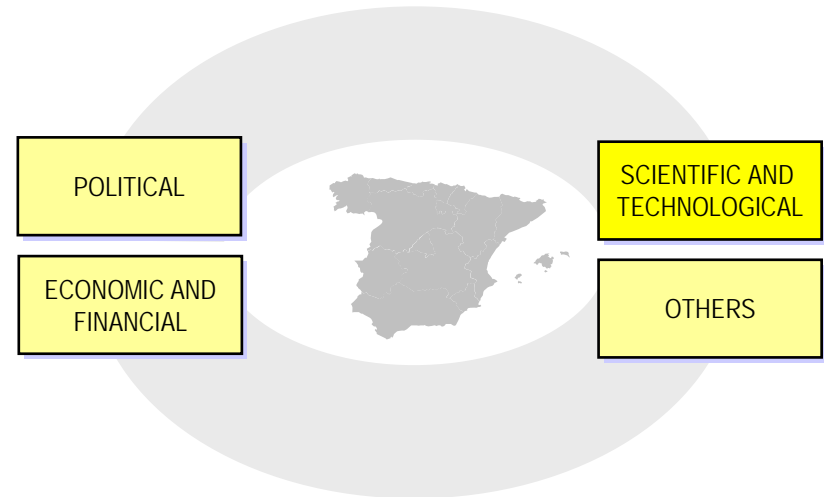
The major energy and power companies have a large influence on the sector both directly through their own actions and indirectly through their trade organisations such as:

- Asociación de Productores de Energías Renovables www.appa.es

Consumer organisations are increasingly active and influential:

- Asociación de Consumidores de Electricidad A.C.E

SCIENTIFIC AND TECHNOLOGIC ORGANISATIONS WITH INFLUENCE ON THE BIOENERGY SECTOR



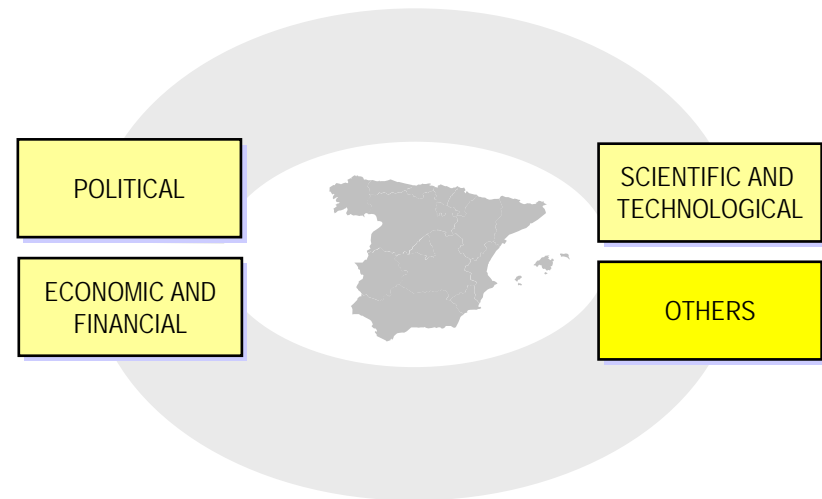
A majority of the Spanish universities and technology centers have active research programs that directly supports the development of the bioenergy sector. There are several examples of joint initiatives at the national level.

- Spanish Biomass Technology Platform that at its first meeting attracted no less than 84 companies, 31 technology centers, 19 industrial organisations, 19 universities and 7 public administrations

The government is also supporting independent research centers with a focus on energy.

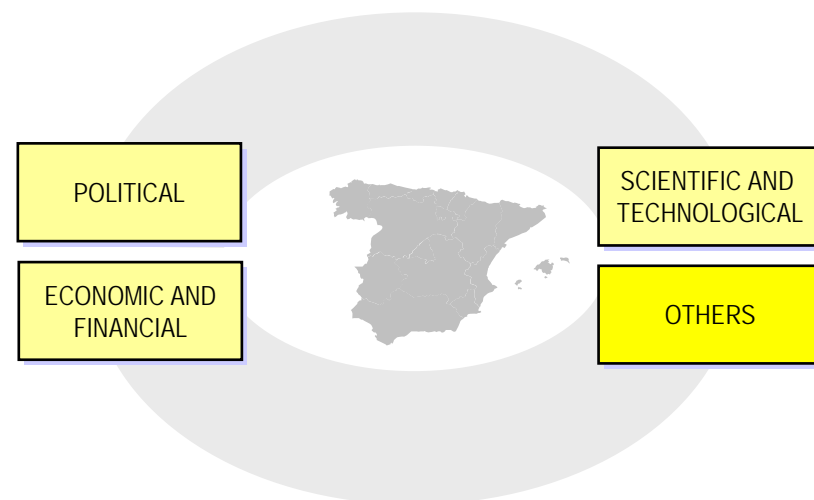
- Centro de Investigaciones energéticas, medioambientales y tecnológicas. CIEMAT www.ciemat.es that drives projects around biocrops etc

OTHER IMPORTANT ENTITIES WITH SIGNIFICANT INFLUENCE ON THE BIOENERGY SECTOR (1/2)



- Asociación Española de Bioempresas ASEBIO www.asebio.es
- Centro Nacional de Energías Renovables CENER-CIMAT www.cener.com
- Asociación Española del Gas SEDIGAS www.sedigas.es
- Instituto para la Divulgación y Ahorro de la Energía IDAE www.idae.es
- Asociación Española de Valorización Energética de la Biomasa AVEBIOM www.avebiom.es
- Instituto de Ciencia y Tecnología Ambiental ICTA
- Asociación Española de Normalización y Certificación AENOR www.aenor.es
- Asociación para la Difusión del Aprovechamiento de la Biomasa en España ADABE www.adabe.net

OTHER IMPORTANT ENTITIES WITH SIGNIFICANT INFLUENCE ON THE BIOENERGY SECTOR (2/2)



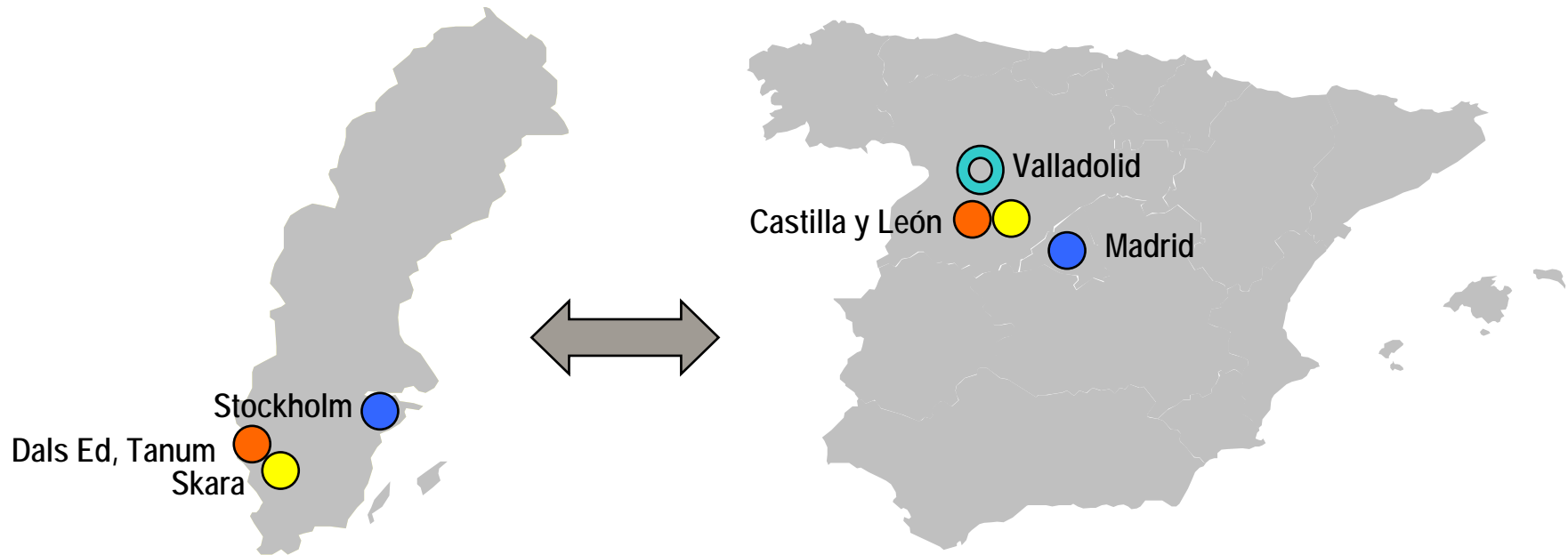
- Centro de Desarrollo de Energías Renovables CEDER www.ciemat.es/sweb/ceder/webceder.htm
- Asociación Europea para la Bioamsa AEBIOM www.ecop.ucl.ac.be/aebiom
- Comisión Nacional de energía www.cne.es
- Centro para el desarrollo Tecnológico Industrial www.cdti.es
- Red Europea de Energía Eurobionet www.eubionet.net
- Sección de Biomasa y Biocombustibles de la Agencia Internacional de la Energía www.ieabioenergy.com
- Agencia de Gestion energetica AGENER www.agener.es

THERE ARE SEVERAL SPANISH INFLUENTIAL ENTITIES OF PARTICULAR IMPORTANCE

Bioenergy – influencing entities		
Heating & cooling	Electricity	Transport
<ul style="list-style-type: none"> ▪ Trade organisations ▪ Agriculture institutes ▪ Universities and research groups <ul style="list-style-type: none"> - Centro de Investigaciones energéticas, medioambientales y tecnológicas. (CIEMAT) www.ciemat.es ▪ Journals and magazines such as: <ul style="list-style-type: none"> - Energías renovables www.energias-renovables.com - InfoEnviro www.infoenviro.es - InfoPower www.infopower.es ▪ Online platforms for environmental and economical communication <ul style="list-style-type: none"> - www.ecoestrategia.com 	<ul style="list-style-type: none"> ▪ See Heating & cooling ▪ Consumer groups ▪ Asociación de Consumidores de Electricidad (A.C.E.) 	<ul style="list-style-type: none"> ▪ See Heating & cooling ▪ Trade organisations: <ul style="list-style-type: none"> - Biodiesel www.biodieselspain.com - Asociación Española de Fabricantes de automóviles y camiones (ANFAC) www.anfac.com - Asociación Española de Operadores de Productos Petrolíferos (AOP) www.aop.es - Grain Producers Associations e.g. Asociación General Productores de Maíz (AGPME) www.mediorural.com ▪ Energy companies e.g. Abengoa Bioethanol Europa, CEPSA, Repsol



SIGNIFICANT EXAMPLES OF COOPERATION BETWEEN SWEDISH AND LOCAL SPANISH ORGANISATIONS ALREADY EXISTS



- AVEBIOM-SVEBIO: The two national organisations for bioenergy has a long standing relationship
- CARTIF / APEA - ENERGI RÅDET VÄST / MUNICIPALITY DAL S ED, TANUM: Project "Innovative Thinking"
- CARTIF – KAN ENERGI: Project "Pellets for Europe"
- International Bioenergy Fair in Valladolid in October 2007. It will participate several organisations e.g. Lantmännen Agroenergi AB, SVEBIO, ENA Energy, Sveaskog and 9 Swedish companies



BIOENERGY PROJECTS ARE MAINLY FINANCED BY PRIVATE INVESTORS SUPPORTED BY GOVERNMENT INCENTIVES

	Private	Public
National	<p>National private financing</p> <ul style="list-style-type: none"> In 2006 local private financing corresponded to 97.1% of the investments (22.9 bn €) of which 20% was direct contributions from developers and the remaining 80% was financed through bank loans provided through the usual financial mechanisms. Examples of investors: <ul style="list-style-type: none"> - Investments companies - Contractors - Public-private partnerships 	<p>National public financing</p> <ul style="list-style-type: none"> In 2006 2.9% (681 M €) was financed through national public capital from the municipality / state and the national government For electricity productions there are premiums for each produced kW Aid to support job creation is used to support investments in bio energy Directed government subsidizes (the last one was 6 M €) For installation of boilers/burners using biomass for heating there are subsidies coming from the autonomous regions. Those can cover up to 40% of the total cost of the investment
International	<p>International private financing</p> <ul style="list-style-type: none"> The project are financed through international private capital <ul style="list-style-type: none"> - International investments companies - International contractors 	<p>International public financing</p> <ul style="list-style-type: none"> There are several energy projects that are financed through international/European public capital Program "Intelligent Energy for Europe" including projects such as: "Best result", "Pellets for Europe" and "Innovative Thinking"



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

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 RELEVANT CUSTOMER GROUPS WITHIN EACH SECTOR

Bioenergy – main customer groups with examples		
Heating & cooling	Electricity	Transport
<ul style="list-style-type: none"> ▪ Private households ▪ Communities and municipal companies ▪ Pulp and paper companies ▪ Wood and furniture companies e.g. Puertas Dayfor, Tole Catalana ▪ Food and beverage companies ▪ Electrical power stations (CHP) 	<ul style="list-style-type: none"> ▪ Industrial generation plants e.g. ASS Group Cobra ▪ Thermal Power Stations e.g. Allariz, Energía de La Loma ▪ Straw Combustion Biomass plants e.g. Sangüesa (EHN-Acciona Energía) ▪ Gas Power Stations e.g. Peré Escribá ▪ Industries with potential for own-use electricity plants such as: <ul style="list-style-type: none"> - Wood and furniture - Corn and distilleries e.g. Maicerías EspañolasDacsa - Pulp and paper e.g. Pastguren - Biofuel companies e.g. Abengoa 	<ul style="list-style-type: none"> ▪ Private households ▪ Municipal service fleets ▪ Logistics and shipping companies ▪ Taxi companies ▪ Bus companies ▪ Agricultural cooperatives

TYPICAL CUSTOMERS FOR HEATING/COOLING USING SOLID BIOMASS ARE HOUSEHOLDS, MUNICIPALS, RURAL HOUSES, SCHOOLS, HOTELS AND SPORTS CENTERS

Category	Examples of typical installation and customers for Heating & cooling from Biomass
	<p>Installation: Rural house "Marrying of the Bridge Location: Mouth of Huérgano (Leon) Date: 2005 Type of installation: Boiler of biomass KWB USV ZI 50 for heating by radiating ground. Solar System for ACS and support for heating</p> <p>Installation: Public school Tabuyo of Monte Location: Tabuyo of Monte (Leon) Date of beginning: September 2005 Type of installation: Boiler of biomass USV V 40 for heating by radiating ground and radiating.</p> <p>Installation: Flamingo Hotel Location: Ampolla (Tarragona) Date: 2005 Type of installation: 2 boilers of biomass USV ZI 100 for heating and hot water. Solar System for ACS and support to heating.</p> <p>Installation: Municipal Sport center of the district of the Ejido (Leon) Location: Leon (Leon) Date: 2006 Type of installation: Two boilers of biomass KWB TDS Power fire 150. These boilers as much provide hot water for ACS as for heating and heating of the swimming pools.</p>



ACCIONA ENERGIA/ EHN



Category	Electricity
Line of business	Planning and Development of Renewable Energy Facilities - Wind Power, Biodiesel, Solar, Biomass and Small Hydroelectric
Turnover 2006	1303 M € (+ 32.4%)
Ownership structure	Acciona Energy is an independent renewable energy company operating across the full spectrum of renewable energy activities from technology to development, construction, operation and ownership of renewable energy projects. EHN operates globally and, at the end of 2004, has installed 2,662 megawatts (MW) in renewable energy, of which 1.474 MW remain under group ownership.
Investment plans	Market acquisition of 10% stake in Endesa at €32per share, representing a total investment of €3.388million
Comments	The biomass power plant in Sangüesa in Navarra is the only one of its kind in Spain. The 25 MW electricity plant is fueled by 160.000 tons of straw per year. The straw is delivered by farmers from the region and stored in a building with a surface of 5.150 m2. It provides around 6% of Navarre's annual electricity consumption. The annual energy production of the plant is 200 million kWh.
Contact	Avenida Ciudad de la Innovación 5 Sarriguren, 31621 Egues, Navarra Tel: +34 94 800 60 00 Fax: +34 94 800 60 01

THE CURRENTLY MOST INTERESTING AND RELEVANT TECHNOLOGIES FOR PRODUCTION OF BIOENERGY IN SPAIN

Bioenergy – the most commonly used processes and technologies

Heating & cooling	Electricity	Transport
Today		
<ul style="list-style-type: none"> ▪ Pellet and wood chip burners ▪ Small/medium sized boilers 	<ul style="list-style-type: none"> ▪ Electricity generation using forest waste products ▪ Electricity generation using ligneous agricultural waste products (from the pruning of olive trees and vineyards) ▪ Electricity generation using herbaceous agricultural waste ▪ Electricity generation using energy cultivations e.g. cardoon and Ethiopian sorghum 	<ul style="list-style-type: none"> ▪ Grain based (barley and wheat) production of bio ethanol ▪ Oil seed-based production of bio diesel

FUTURE TRENDS, AN INCREASED INVESTMENT IN THE TECHNOLOGIES THAT SUPPORTS AN EFFICIENT ENERGY PRODUCTION FROM BIOMASS

Bioenergy – trends		
Heating & cooling	Electricity	Transport
<ul style="list-style-type: none"> ▪ The expected increase in interest for renewable energy from biomass on the Spanish market will drive the development of more efficient and easy to install/run equipment particularly for domestic use ▪ Introduction of products derived from non-conventional sources of biomass onto the pellets market 	<ul style="list-style-type: none"> ▪ Introduction of Bio gas: improved anaerobic digestion of waste ▪ Combining sludge from waste water with organic solid urban waste ▪ Promotion of Co-firing ▪ Optimization of the efficiency of the production processes through the increased use of bio processes ▪ Introduction of new energy crops to the Spanish territory (decrease the water consumption and the use of fertilizers) 	<ul style="list-style-type: none"> ▪ More efficient production of bio fuels through: <ul style="list-style-type: none"> - the increased use of bio processes - selection of more optimal varieties and species of energy crops for fuel production - new cultivation techniques ▪ Engines must be adapted to support the 2nd generation of bio fuels.

THE PURCHASING PROCESS FOR SPANISH BIO ENERGY PROJECTS - A ROLE FOR CONNECTIONS / RELATIONS / MARKETING

Purchasing process relative to project size and degree of public ownership

Project size	Larger	Tender process	Tender process
	Smaller	Connections / relations / marketing *	Tender process
		Smaller	Higher
		<i>Degree of public ownership</i>	

- The large majority of the Bio Energy projects in Spain are expected to be initiated in the private sector and to be small to medium in size
- The purchasing process in Spain is mainly in the form of a tender process (EU)
- Some smaller projects particularly for private corporations are handled through a normal purchasing process in which connections, relations and direct marketing plays an important role*

Most of projects are financed by investments companies and contractors through bank loans



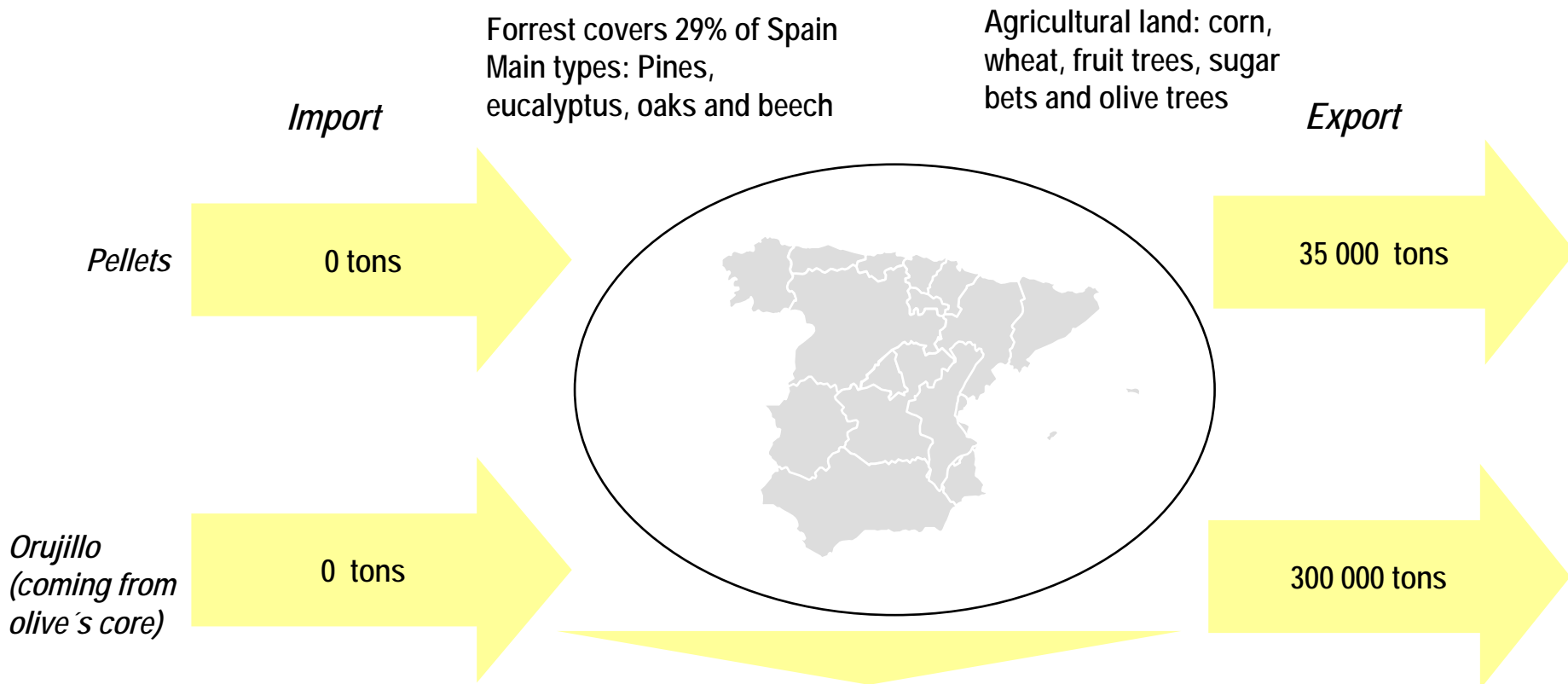
THE BUSINESS PROCESS IN SPAIN FOLLOWS THE EU STANDARDS HOWEVER THERE ARE OTHER IMPORTANT FACTORS TO CONSIDER

- The business processes in Spain tend to follow the required EU standards
 - Major investments are always done following the EU norms
 - Larger pieces of equipment are in most of cases purchased through an open tender process
- However there are additional factors that can play a significant role when conducting business in Spain
 - the Spanish culture including the business culture and the appreciation of the large variations within the country
 - the relative importance of personal connections and relationships
 - the advantage of having the capacity to speak and fully understand business Spanish
 - to be able to handle the Spanish idiosyncrasy
 - develop an understanding of the local sector and the variations within Spain

"When doing business in Spain you need to be aware of a dominion of the language, a net of contacts and understanding of how business doing works in the country.." José Antonio La Cal Herrera, AGENER

Successful business in Spain requires a significant knowledge of the country

FUTURE DEMAND OF BIOMASS COULD BE SECURED FROM THE RESOURCES THAT ARE AVAILABLE WITHIN THE SPANISH BORDERS

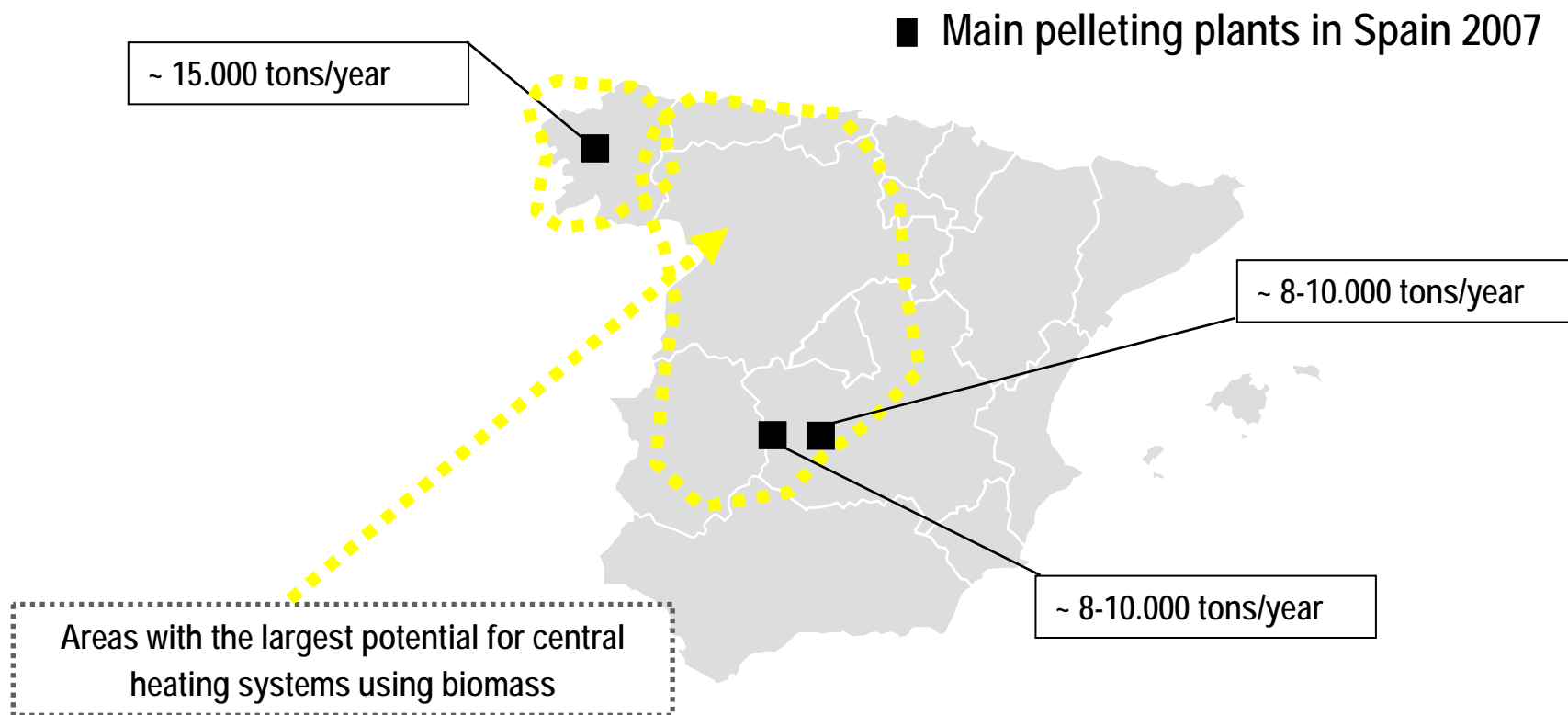


Consumption of biomass in Spain:

- 5 000 tons pellets
- 50 000 tons orujillo

Pricing could become an issue since the raw material can be used for several different purposes

THE PRODUCTION OF PELLETS IN SPAIN WILL EXCEED 30.000 TONS IN 2007 BUT ALMOST THE ENTIRE OUTPUT IS SET FOR EXPORT



Solid biomass/pellets – a potentially large source of renewable energy

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MAIN SPANISH COMPETITORS AND COMPLEMENTING ENTITIES (1/2)

Bioenergy – main competitors and complementing entitiesS		
Heating & cooling	Electricity	Transport
National		
<ul style="list-style-type: none"> ▪ Factor Verde ▪ Ghesa Ingenieria y Tecnologia ▪ Molins Energía ▪ CER ▪ Calordom ▪ Resifor ▪ Trabisa ▪ Termisa ▪ (Boiler producer, reparator and installator) 	<ul style="list-style-type: none"> ▪ Endesa Cogeneración y Renovables ▪ ENEL Unión Fenosa Renovables ▪ Ghesa Ingenieria y Tecnologia ▪ Iberdrola Cogeneración ▪ Abener Energía ▪ Levenger ▪ Acciona Energía ▪ Valoriza energía ▪ CGC-Grupo Compañía General de Carbones (Logistic) ▪ Vulcano-Sadeca (CHP) ▪ Econoler SA (CHP) ▪ Standard Biomass Service (turn-key compact biomass power plants) ▪ Lonjas Tecnología 	<ul style="list-style-type: none"> ▪ Abengoa Bioenergy (biofuels) ▪ Bionor ▪ Olcesa Biodiesel ▪ Acciona Energía ▪ Grupo Tello ▪ Acciona Biocombustibles ▪ INSECC, Hergaroval and Hidronor

MAIN SPANISH COMPETITORS AND COMPLEMENTING ENTITIES (2/2)

Bioenergy – main competitors and complementing entities		
Heating & cooling	Electricity	Transport
International		
<ul style="list-style-type: none"> ▪ ÖkoFen (Pellets Burner) ▪ Fröhling (Pellets Burner) ▪ Nova Energia through Fröhling (pellet burner) ▪ Kapelbi (pellet burner ETA) ▪ HC Ingeniería through KWB (pellet burner) ▪ Prodesa through Swiss Combi ▪ Aalborg (boiler engineering and production) 	<ul style="list-style-type: none"> ▪ HC Energía through EDP ▪ Enel Viesgo ▪ Electrabel ▪ Foster Wheeler (power plant engineering and construction) ▪ Kab Takuma (power plant construction) ▪ Wärtsilä Iberica 	<ul style="list-style-type: none"> ▪ Bionet Europa ▪ APBD Auto producción de Biodiesel through Ageratec ▪ Lurgi Group ▪ Scania

ABENGOA BIOENERGY - AN INTERNATIONAL FAMILY OWNED SPANISH ENERGY COMPANY

ABENGOA

Category	Energy company
Line of business	Focused on bio fuels; bio ethanol, bio-diesel
Ownership structure	Public company
Growth	Going into Brazil during 2007 through the acquisition of Dedini Agro group of companies
Comments	<p>A subsidiary of Abengoa and a large international player on the bio ethanol market with production in Spain, France and now Brazil</p> <p>The acquisition of the Dedini Agro group is highly important for the global bio fuel sector because Abengoa's cellulosic ethanol technologies will now be applied to sugar cane husks and to the processing byproduct bagasse, to yield a fuel the energy balance of which may come close to or even surpass that of petroleum based fuels.</p>
Contact	<p>Avenida La Buhaira, 2 41018 Sevilla Tel: + 34 95 493 71 11 Fax: +34 95 493 70 02 Web: www.abengoa.es Email: abengoa@abengoa.com</p>

ENDESA COGENERACION Y RENOVABLES - AN INTERNATIONAL SPANISH ENERGY COMPANY



Category	Energy company
Line of business	Focused on renewable energies
Ownership structure	Public company
Growth	Already established in Portugal, Colombia and Mexico
Comments	ENDESA has predicted to destine 1.900 M€ until 2009 so that its power installed in renewable energies reaches the 4.100 MW, in such a way that these facilities happen to represent around 12% of the total of the ENDESA production park.
Contact	Balbino Marrón s/n. Edificio Viapol, 2da planta. 41018 Sevilla Tel: + 34 95 504 99 90 Fax: +34 95 441 21 28 Web: www.endesa.es Email: ecyr@ecyrgrupoendesa.com



HC INGENIERIA - KWB






Category	Bioenergy company
Line of business	Installation of boilers/ System of Easy fire, Multi fire and Power fire heating with pellets
Ownership structure	Private company
Entry strategy	To impel different projects related to rational use from energy and the use of renewable energies, specially biomass and sun.
Growth	More than 10 installations at private companies and municipal centers
Comments	<p>HC Engineering also offers to their clients a specialized service of power consultancy. This service is developed on three main lines of performance:</p> <ul style="list-style-type: none"> - Advising for the optimization of the power processes of the client. - power Audits. - Studies of viability of power projects.
Contact	<p>C/ Santiago Grisolía, 2, 1º - 102, Tres Cantos 28760 Madrid Tel: +34 918 062 222 Web: www.hcingeneria.com Email: info@hcingeneria.com</p>

SWEDISH COMPANIES THAT ARE ACTIVE ON THE SPANISH MARKET (1/2)

Company	Line of business	Local position	Contact data
 ALFA LAVAL IBERIA	Equipment, systems, and services for liquid/solid separation, heat transfer and treatment, and fluid handling.	Calle de San Rafael Alcobendas 1 – Ed Europa 28108 Alcobendas Madrid Tel: +34 91 379 06 00 Fax: +34 90 212 25 33	Peter Jonas Leifland President
 ABB	Power and automation technologies	Calle Major 65 08750 Molins de Rei Barcelona Tel: +34 93 668 77 06 Fax: +34 93 668 77 06	Fernandez Perez Jose Administrator
 ATLAS COPCO	Compressed air and gas equipment, generators, construction and mining equipment, industrial tools	AVENIDA DE JOSE GARATE, 3 28823 Coslada Madrid Tel: +34 91 627 91 00 Fax: +34 91 671 31 16	Meyer Hans Ola President

SWEDISH COMPANIES THAT ARE ACTIVE ON THE SPANISH MARKET (2/2)

	Company	Line of business	Local position	Contact data
	SANDVIK ESPAÑOLA	High-technology engineering	Calle Verneda. Poligono industrial La Roca S/N 08107 Martorelles Barcelona Tel: +34 93 571 75 00 Fax: +34 93 571 76 75	Tom Johan Eriksson President
	SKF ESPAÑOLA	Rolling bearings, seals, mechatronics, services and lubrication systems	Carretera Corella Km 3,5 31500 Tudela Navarra Tel: +34 91 768 42 00 Fax: +34 91 768 4262	Alejandro Fernandez de Araoz y Marañon President
	SCANIA HISPANIA	Trucks and busses	Avenida de Castilla. Poligono Industrial San Fernando 29 28830 San Fernando de Henares Madrid Tel: +34 91 678 80 00 Fax: +34 91 675 74 50	Sten Axel Fagerdahl President



SWEDISH COMPANIES THAT ARE ALREADY TARGETING THE BIO ENERGY MARKET FOR HEATING/COOLING IN SPAIN

Company	Line of business	Local position	Web site	Contact data
 <p>NIBE Industrier a Swedish heating technology company whose business operations are organized in three separate business areas: NIBE Element, NIBE Heating and NIBE Stoves.</p>	<p>NIBE Stoves - Wood burning NIBE Heating - Heat pumps - Domestic boilers - Water heaters - District heating</p>	<p>Local distributors: Geótics Innova Can Ermengol 8 08202 Sabadell - Barcelona Tel: (+34) 93 725 61 30 Fax: (+34) 93 726 05 84 Contact: Bartomeu Casals (ground source heat pumps, heating / cooling)</p>	<p>www.nibe.com</p>	<p>Box 14 - Järnvägsgatan 40 SE- 285 21 Markaryd - Sweden Tel: +46 433-73000 Fax: +46 433-73190 E-mail info@nibe.se</p>
 <p>The Bruks Klöckner group has some 190 employees and annual sales of about EUR 40 million. The group is a wholly-owned subsidiary of the JCE Group</p>	<p>Bruks Klöckner is a world-class supplier of wood processing and wood handling equipment for sawmill residue, pulp mills, board mills and bio-energy production.</p>	<p>Local distributors Stationary equipment Urmedi-Artia Apartado 71 ES-48220 Abadiano/Vizcaya, Spain Phone +34-94 6583114</p>	<p>www.bruks.com</p>	<p>Bruks Klöckner Box 46 Västergatan SE-82010 Arbrå Sweden Tel. +46-278-642500 Fax +46-278-642520 info@bruks.com celltec@celltec.se</p>
 <p>Econova</p>	<p>Econova Energy utilize and process waste and by-products from society and the forest industry.</p>	<p>Miranda</p>	<p>www.econova.com</p>	<p>Jursla Industriområde Box 90, SE-616 21 Åby Tel: +46 11-36 81 00 Fax: +46 11-36 81 09 E-mail info@econova.se</p>



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CONTACT LIST (1/2)

Company	Contact person
ABENGOA	Javier Salgado
HC INGENIERÍA	Carlos Fernandez lozano
ABENER ENERGÍA	Manuel Valverde
ENDESA COGENERACION Y RENOVABLES	Juan Velasco López
VALORIZA ENERGIA	Emilio López Carmona
ENEL UNION FENOSA RENOVABLES	Rosario Arroyo Brotóns
BIONET EUROPA	Javier Vila Corcoles
WÄRSTSILÄ IBERICA	Imanol Laraudogoitia
ACCIONA ENERGIA	Tomas Villanueva
HC ENERGIA	Manuel Menendez Menendez
KAPELBI	Ruben Gonzalez Diez
LONJAS TECNOLOGIA	Manuel Flórez Panizo
GHESA INGENIERIA Y TECNOLOGIA	Andrés Cuesta Samaniego
IBERDROLA COGENERACION	José Luis Fernández Getino

CONTACT LIST (2/2)

Organisation	Contact person
AVEBIOM	Francisco Díaz
IDAE	Jose Blanco Folgado
ASEBI	Fernando Royo Gomez
ADABE	Jose Manuel Seoane
CIEMAT	Salvador Ordonez Delgado
SEDIGAS	Victor Francisco Lacanina Delgado
APPA	Josep Turmo
ASEBIO	Jose Luis Tello
AENOR	Manuel Lopez Cachero
AOP	Alvaro Mazarrasa
ANFAC	Juan Antonio Fernandez de Sevilla
AGENER	Jose Antonio La Cal Herrera



LIST OF USED REPORTS (1/3)

Organisation	Reporter
IDAE	<ul style="list-style-type: none"> ▪ PER, Plan de Energías Renovables para España, 2005-2010 ▪ Biomasa ▪ Biocarburantes
APPA	<ul style="list-style-type: none"> ▪ Renovables, sí pero... ▪ Bionergía eléctrica ▪ Renovables por convicción ▪ Cocido renovable ▪ Objetivos europeos de renovables ▪ Renovables en la encrucijada ▪ El impulso de los cultivos energéticos para biocarburantes ▪ Obligación de biocarburantes ▪ Solo las renovables garantizan la sostenibilidad ▪ Las renovables son las más baratas ▪ Un mundo sin petróleo
EUBIONET	<ul style="list-style-type: none"> ▪ Biomass fuel trade in Europe
AVEBIOM	<ul style="list-style-type: none"> ▪ Real Decreto 661/2007 ▪ Biomun: calderas de biomasa



LIST OF USED REPORTS (2/3)

Organisation	Report
CNE	<ul style="list-style-type: none"> ▪ Informe sobre el consumo de gas natural en 2006 ▪ Informe 23/2007 ▪ Informe 24/2007 ▪ Octavo Informe Semestral
ASEBIO	<ul style="list-style-type: none"> ▪ Los cultivos MG
ANFAC	<ul style="list-style-type: none"> ▪ Panorama y perspectivas de la industria del automóvil ▪ Estudio sobre transportes y movilidad en España
CENER-CIMAT	<ul style="list-style-type: none"> ▪ Estudios de viabilidad de cultivos energéticos alternativos para la producción de biocombustibles ▪ Estudios de viabilidad de cultivos energéticos alternativos para la producción de biocombustibles ▪ Utilización de Aceites de Cultivos Energéticos Alternativos para la producción de Biocombustibles ▪ Desarrollo de Tecnologías de Producción de etanol a partir de Biomasa ▪ Proyecto Renovalia. Situación de las energías renovables en España. Informe final



LIST OF USED REPORTS (3/3)

Organisation	Report
CIEMAT	<ul style="list-style-type: none"> ▪ Propuesta por el sector energético con el fomento de un consumo responsable (La Razón) ▪ Acuerdos tomados en el Consejo Europeo: Política Energética ▪ Análisis del ciclo de vida de combustibles alternativos para el transporte. Análisis de -Ciclo de Vida Comparativo del Biodiesel y del Diesel (II) ▪ Biocarburantes líquidos: biodiesel y bioethanol ▪ Libro Blanco sobre la reforma del marco regulatorio de la Generación Eléctrica en España ▪ Biomass. Green Energy for the future ▪ 2006 European Euro barometer of Renewable Energies. 6th Report ▪ A viability analysis of sustainable implementation of energy production systems
AOP	<ul style="list-style-type: none"> ▪ Composición de los precios en España Gasolina SP95 y gasóleo A (Septiembre de 2007) ▪ Hidrocarburos: Mercados de futuros y efecto Kyoto ▪ Presente y futuro en las materias primas: Energía ▪ El petróleo y la energía en un entorno cambiante ▪ Convergencia europea y liberalización energética ▪ Consumos nacionales de productos petrolíferos