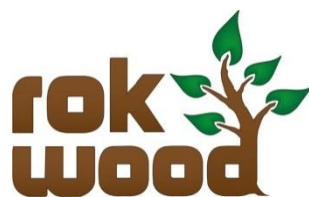


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D1.5: Current research within and outside the consortium

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Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	



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1 Identification of relevant RTD issues in the participating regions

1.1 Current research within and outside the consortium

The tables below deliver relevant active and finalized projects concerning research and technological development (RTD) in the area of wooden biomass production from SRP and use as resource for efficient biofuel in the participating ROKWOOD regions.

1.1.1 Current research on SRPs in Sweden

Projects outside the Swedish consortium, but in which regional actors are/were actively involved.

Project	Programme/Financing	Duration	Short Description	Research institutions
Processing of willow varieties for energy crop cultivation	Swedish Energy Agency	2 years (2012-2014)	The project will develop a number of new willow varieties by crossing and selection. The project aims to show how the practical breeding of Salix can be conducted with relatively small funds, but with satisfactory results in terms of new varieties	European Willow Breeding AB (EWB) Stig Larsson stig.larsson.salix@gmail.com
Dissemination of information on energy crops economics	Swedish Board of Agriculture	3 years (2011-2013)	Presentations on energy crops economics with a focus on Willow. Development of energy crops calculations	Håkan Rosenqvist, independent researcher hak.rosenqvist@telia.com
Reduced impact of weeds in salix	Swedish Energy Agency	2,5 years (2013-2015)	To quantify the differences in weed competitive ability of salix varieties, document their growth potential during optimal conditions and propose non-chemical weed control methods and new non-destructive biomass estimation methods.	Swedish University of Agricultural sciences, Alnarp Inger Åhman inger.ahman@slu.se
Weed competitive abilities in Salix for bioenergy	Swedish Research Council for Environment, Agricultural Sciences and Spatial planning (FORMAS); plant material from	3 years (2010-2012)	Ten commercial varieties are tested for their weed competitiveness. Investigating if clones from breeding materials could compete better with weeds than the commercial varieties do.	Swedish University of Agricultural sciences Inger Åhman inger.ahman@slu.se

	Lantmännen Lantbruk.			
Sowing of willow "- establishment and growth after planting with lying cuttings	SLF The Swedish Farmers' Foundation for Agricultural Research	2 years (2011-2012)	Evaluation of planting technique for Willow	Swedish University of Agricultural sciences jannis.dimitriou@slu.se Håkan Rosenqvist, independent researcher
Large-scale harvesting and storage of "billets" for self-drying and processing, project nr. 33210-1	Swedish Energy Agency	2010-2011	Study of existing commercial harvesting of willow with the product "billets". Including economic calculations.	Henriksson Salix AB Annika Henriksson annika.henriksson@salixenergi.se
A pilot study of the Biobaler, project nr. 33211-1	Swedish Energy Agency	2010	Field testing of the biobaler and economic calculations.	Henriksson Salix AB Annika Henriksson annika.henriksson@salixenergi.se
Calculation Methodology for profitability comparisons between	SLF The Swedish Farmers' Foundation for Agricultural Research, Värmeforsk (Thermal Engineering Research	2 years (2008-2010)	Calculation Methodology focusing on Willow.	HS Malmöhus Håkan Rosenqvist, independent researcher hak.rosenqvist@telia.com

different land uses	Institute)			
The Bioenergy Network of Excellence (NoE) http://www.bioenergy-noe.com/	FP6	6 years (2004-2009)	Integrating our RD&D activities to create a Virtual Bioenergy R&D Centre that will contribute to a competitive bioenergy market in Europe.	<ul style="list-style-type: none"> • The International Institute for Industrial Environmental Economics (IIIEE) at Lund University, Sweden • VTT Technical Research Centre of Finland - VTT, Finland • Joanneum Research, Institute of Energy Research - JR, Austria • Netherlands Energy Research Foundation - ECN, the Netherlands • Karlsruhe Institute of Technology - KIT, Germany • Aston University - AU, United Kingdom • EC Baltic Renewable Energy Centre - EC BREC, Poland • National Institute for Agricultural Research - INRA, France kai.sipila@vtt.fi
Future Business	Swedish Board of Agriculture	2 years (2013-2014)	Future Business" collects 25 energy successful pioneers in the green sector. These farms will provide a link between research and practice, as well as a training location to inspire more companies to energy efficiency and switching to renewable energy. The aim is that over two	The Federation of Swedish Farmers – LRF Linus Pettersson linus.pettersson@lrf.se

			years to complete 450 study occasions and at least 120 lectures.	
System for direct chip harvesting of willow	Swedish Energy Agency	3 years (2010-2013)	Development of three completely new prototype heads, one for Claas, one for Krone and one for John Deere.	Henriksson Salix AB Annika Henriksson annika.henriksson@salixenergi.se

SRP projects in the Swedish consortium in which partners are/were actively involved.

Project	Programme/Financing	Duration	Short Description	Research institutions
Prerequisites to use direct chip harvesting willow in a smaller heating plant (0.1 - 2 MW)- Business concepts for increased profitability	Swedish Board of Agriculture	2 years (2012-2014)	To develop knowledge of appropriate production methods (drying) for willow chips to be used in small-scale heating plants and the economy of a small-scale heating plant.	<ul style="list-style-type: none"> SP Technical Research institute of Sweden SalixEnergi Europa Susanne Paulrud Susanne.paulrud@sp.se
Willow as round bale-from harvest to use of dry fuel	Swedish Board of Agriculture	2,5 years (2011-2014)	The goal is to develop, optimize and demonstrate the value chain of willow, from cultivation to end use by a new type of harvester BioBaler WB-55.	<ul style="list-style-type: none"> SP Technical Research institute of Sweden REAB (Rosenhälls Gård Energi AB) Susanne Paulrud Susanne.paulrud@sp.se
Conditions for	Swedish Energy	1,5 years	The goal is to study the effects of storage /	<ul style="list-style-type: none"> SP Technical Research institute of Sweden

willow chips in smaller plants (0,1-5 MW) - storage/drying of willow, effect on slagging and fouling	Agency	(2013-2014)	drying of willow chips and storage of bundles/bales has on slagging and fouling/(high temperature corrosion). In addition, the goal is to develop a set of requirements and conduct a discussion of operational strategies and boiler technology with the use of willow in the size range 0.1 to 5 MW.	<ul style="list-style-type: none"> Luleå University of Technology <p>Susanne Paulrud Susanne.paulrud@sp.se</p>
National coordination and development of small-scale biofuel chains	Swedish Board of Agriculture	3 years (2010-2013)	A national project to plan, coordinate development and demonstration activities in the field of small-scale biofuel chains. Three demonstration projects dealing with willow is in progress.	<ul style="list-style-type: none"> SP Technical Research institute of Sweden Swedish Rural Economy and Agricultural Societies <p>Susanne Paulrud Susanne.paulrud@sp.se</p>
Perennial energy crops on arable land: a decision support for greater variety in the landscape in practical farming	Swedish Board of Agriculture	1 year (2012-2013)	The goal is to establish guidelines for how and where SRP should be planted both as to quality objective "A varied agricultural landscape" and to profitability. The results are compiled in close consultation with one or a few selected administrators and landowners / farmers / entrepreneurs who participated in surveys and interviews.	<ul style="list-style-type: none"> SP Technical Research institute of Sweden Swedish University of Agricultural sciences <p>Nils-Erik Nordh Nils-Erik.Nordh@slu.se</p>
Locally produced	Swedish Board of Agriculture	2 year (2012-2014)	The goal of the project is the supply of willow from 150 hectares of new willow cultivation	<ul style="list-style-type: none"> SalixEnergi Europa



willow - a model for increased cooperation			within three years by creating an attractive business model through cooperation between energy companies, willow growers and contractors. In addition, new establishment of Ystad Municipality's own land, about 50 hectares.	<ul style="list-style-type: none">• Ystad värmeverk Annika Henriksson annika.henriksson@salixenergi.se
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1.1.2 Current research on SRPs in Germany

Project	Programme/Financing	Duration	Short Description	Consortium
BIO-HEAT - Promotion of Short Rotation Coppice for District Heating Systems in Eastern Europe	Intelligent Energy Europe	2 years (2010-2012)	The BIO-HEAT project aims to promote the use of biomass from Short Rotation Coppice (SRCs) as a source of energy for District Heating (DH) systems in Eastern European countries (concretely Czech Republic, Romania, Poland, Slovakia and Lithuania), showing potential future end users (DH professionals, established municipal energy suppliers and land owners) and stakeholders (local authorities or policy makers) the advantages of using biomass from SRCs as a source of energy and its applicability on DH systems. http://bio-heat.eu/en/	<ul style="list-style-type: none"> • BIOAZUL (Spain), • CZ-BIOM (Czech Republik), • ttz Bremerhaven (Germany), • Lithuanian Biomass Energy Association, • Lithuanian District Heating Association, • The Polish Association of Research and Applied Agriculture Specialists, • Politechnical University Timisoara (Romania) • Slovak Bioenergy Association, • Slovene District Energy Association
BIOPROS	Horizontal Activities Involving SMES	3 years (2005–2008)	Specific research, training and dissemination activities in the field of safe and efficient wastewater reuse and sewage sludge application for the production of renewable energy crops in so called Short Rotation Plantations (SRP). The aim of BIOPROS is to gain knowledge about the economic, ecological and technical feasibility of SRPs for different local conditions and market requirements and to transfer it to their SME members (farmers, biomass processors, engineers, decisions makers). This will contribute to promote SRP biomass	<ul style="list-style-type: none"> • Spanish Farmers' Association A.S.A.J.A. • Council of the Bulgarian Agricultural Organisation • CONFAGRICOLTURA Italian Farmers' Association • Estonian Farmers' Association • The Polish Association of Research and Applied Agriculture Specialists • Ulsters Farmers' Union (United Kingdom) • Silesian Farmers' Association (Poland) • European Biomass Industry Association (Belgium) • CZ BIOM (Czech Republic)

			<p>production between SMEs throughout Europe and abroad. Main focus will lay on the safe and efficient application of wastewater and sludge to guarantee high yields and sufficient treatment performance without any negative environmental or hygienic impacts. Lack of knowledge about the high SRP potential and prejudices against the application of human wastes shall be minimised during the project as well as barriers against the application of SRP-biomass. For this reason, a wide range of aspects will be subject of research including SRPs' best practice and costs as well as related legislation and standards.</p> <p>http://www.biopros.info/</p>	<ul style="list-style-type: none"> • SK-Biom (Slovak Republic) • International Ecological Engineering Society (Switzerland) • AVSME (Estonia) • Helmut Lamp (Germany) • Leocomerce-2004 (Bulgarian) • Gregorz Plonka (Poland) • Antonio Ramos Fernández (Spain) • Biomasa (Slovak Republic) • Laqua Treatment (Swedish) • ETA Florence (Italy) • Bioazul (Spain) • ttz Bremerhaven (Germany) • Estonian Agricultural University • Swedish Agricultural University • Research institute for industrial crops (Italy) • University of Warmia and Mazury in Olsztyn (Poland)
WAFLA	Sixth Framework Programme	3 years (2006-2009)	<p>Create an Latin American network for sustainable biomass production and water management in agroforestry systems .</p> <p>http://www.wafla.com/</p>	<ul style="list-style-type: none"> • ttz Bremerhaven (Germany) • Instituto Desert (Brazil) • Nicaraguan Institute of Agricultural Technology • The Argentinean Arid Research Institute • Center for International Cooperation in Agricultural Research for Development (France) • International Center for Tropical

				<p>Agriculture (Colombia)</p> <ul style="list-style-type: none"> • Plant Research International (Netherlands) • Tropical Agricultural Centre of Research and Education (Costa Rica) • National University of Loja (Ecuador) • Center of Agroforestry for the Sustainable Development (Mexico) • Faculty of Forestry Sciences (Mexico) • Centre of Research in Ecology and Arid Areas (Venezuela) • Center of arid lands Research (Peru) • School of Agricultural and Forest Science (United Kingdom) • Salvadorian Centre of Appropriate Technology • Center of Information and Exchange for Ecologic Agriculture (Bolivia) • BIOAZUL (Spain) • EAN-Santiago (Chile) • Permanent Secretariat of the U.N. Convention to Combat Desertification and Drought (France) • ACICAFOC (Costa Rica) • DeSdel-Chaco Foundation (Paraguay)
WACOSYS Monitoring and control	Sixth Framework Programme – Co-operative Research	2004 - 2006	Developing, testing and optimising a monitoring and control system (WACOSYS-system) for wastewater irrigation of SRP's	<ul style="list-style-type: none"> • Hydro-Air (Germany) • BIOAZUL S.L. (Spain) • Stab tratamiento de águas e biotecnología

<p>system for wastewater irrigated energy plantations</p>	<p>Project (CRAFT)</p>		<p>which guarantees SRP-operators a safe and more efficient production in their plantations. The WACOSYS-System consists of a combined sensor-detector-dosage system which includes a monitoring, control and distribution unit which enables the dosing and distribution of the wastewater in accordance to the plantations demand for optimum plant growth and maximum uptake rates while observing critical loads in the effluent to avoid environmental pollution. That will strengthen the competitiveness of SRP produced biomass against other fuels and combustibles and will ensure the compliance with European and national environmental legislation. www.wacosys.info</p>	<p>LDA (Portugal)</p> <ul style="list-style-type: none"> • Munitsipaalasutus Karjäär (Estonia) • Antonio Ramos Fernández (Spain) • Profactus recycling & heating BV (The Netherlands) • Estonian agricultural university (Estonia) • Warsaw agricultural university (Poland) • ttz Bremerhaven (Germany)
<p>SRC Network</p>	<p>BMWi (German Federal Ministry of Economics and Technology) European Commission</p>	<p>2 years 2010 - 2012</p>	<p>Market and information platform, to connect business and research partners within new projects and push investment in the field of Short-Rotation-Coppice.</p>	<ul style="list-style-type: none"> • 3N e.V. • Abwasserverband Braunschweig • Agraligna GmbH • Bioazul S.L. • Bioenergiehof Böhme GmbH • Biomasse Consulting • Biomassehof Achtal GmbH & Co. KG • Blunk GmbH • BMB Biomasse Beteiligungs GmbH • Bundesverband Bioenergie e.V. • Choren Industries GmbH • Clever Energy Invest GmbH & Co. KG

				<ul style="list-style-type: none"> • Dorr Energie GmbH • Energie 2.0 • Energiepartner Süd GmbH • Eusäko Christian Hengste e.K. • Forstlicher Lohnbetrieb Klose • Graf von Westphalen GmbH • Gut Ankelohe • Ingenieurbüro für Energie- und Verfahrenstechnik • Maschinenring Mittelholstein e.V. • Nissen Energie GmbH & Co. KG • Origo GmbH • P&P Dienstleistungs GmbH & Co. KG • Pusch AG • Schlesinger Consult • Wald21 GmbH • Wald-Agentur Münster GmbH • Walton & Phillips Engineering • Westerwälder Holzpellets GmbH
NETBIOCOF	Sixth Framework Programme	6 years (2005-2011)	The primary objective of NetbioCof is to promote European co-operation between research organisations devoted to biomass co-firing, promoting the uptake of innovative technologies to expand the use of biomass co-firing in new and existing power plants, with emphasis in the New Member States. A biomass co-ordination platform will be established, which will co-ordinate on-going	<ul style="list-style-type: none"> • ttz Bremerhaven (Germany) • European Biomass Industrial Association (Europe) • Sveriges Lantbruksuniversitet (Sweden) • Eesti Põllumajandusülikool (Estonia) • Instytut Chemicznej Przeróbki Węgla (Poland) • Bioazul S.L (Spain) • Technical Research Centre of Finland

			<p>research and strategic activities with the aim of identifying best practices and will propose strategies of implementation and directions for futures research. http://www.netbiocof.net</p>	<p>(Finland)</p> <ul style="list-style-type: none"> • Universitatea “Politehnica” Timisoara (Romania) • Biomasse Projekt GmbH (Germany) • KEMA Nederland BV (Netherlands) • Landeskammer für Land- und Forstwirtschaft Steiermark (Austria) • Institute Jozef Stefan (Slovenia) • ETA Renewable Energies (Italy) • Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (Spain) • Centre Wallon de Recherches Agronomiques (Belgium) • University of West Hungary (Hungary) • European Renewable Energy Centres Agency (Europe) • Joint Institute for Power and Nuclear Research “Sosny” (Belarus) • Scientific Engineering Centre BIOMASS (Ukraine) • TUBITAK Marmara Research Centre (Turkey) • Technological University of Sofia (Bulgaria)
BIOWARE	BMWi (German Federal Ministry of Economics and Technology)	2 years (2009-2011)	Initiation of bioenergy regions in China by focusing sustainable biomass production and energy plantations linked with utilization of waste water and export of technology from	<ul style="list-style-type: none"> • ttz Bremerhaven • Alensys AG • Hydro-Air GmbH

			German renewable energy companies.	
LADAS	Sixth Framework Programme	1 year (2005-2006)	Exploration of possibilities in land amelioration, combating desertification and migration to the cities of the Gansu province by checking the salt resistance and the growth behavior of the Short-Rotation-Plant Salix.	<ul style="list-style-type: none"> • ttz Bremerhaven • Gansu Province
Probiopa	BMBF (German Ministry of Education and Research) KIT	4 years (2009 – 2013)	Integrating biological, environmental and technical aspects for sustainable biomass production with fast growing tree species (poplars). http://imk-ifu.fzk.de/probiopa/	<ul style="list-style-type: none"> • KIT (Karlsruhe Institute of Technology) • UF (University of Freiburg) • FVA (Forschungsanstalt Baden-Württemberg at Freiburg)
SRPs as a sustainable method of lignocellulosic biomass production	KIT	1 year (2010 – 2011)	Identification of suitable landscape for SRC regarding ecological, nature conservation and spatial planning aims. Development of strategies to implement an ecofriendly production of wooden biomass. http://www.itas.kit.edu/projekte_roes10_kup.php	<ul style="list-style-type: none"> • Institute für Industriebetriebslehre und Industrielle Produktion • Institut für Regionalwissenschaft & Institut für Städtebau und Landesplanung
KUPAD	FNR (Fachagentur Nachwachsender Rohstoffe e.V.) BMELV (Federal Ministry of Food, Agriculture and Consumer Protection)	3 years (2011 – 2014)	Exploration of new land sites to avoid a cultivation competition in food and wooden biomass production. SRC on disposal sites. http://baumzeitung.de/aktuell/alle-news/news-details/beitrag/49558-baeume-statt-muellberge.html	<ul style="list-style-type: none"> • Nordwestdeutscher Forstliche Versuchsanstalt • Umweltamt Landkreis Göttingen • Umweltamt Werra-Meißner-Kreis • Abfallwirtschaft Region Hannover • Universität HAWK • Göttinger Fakultät
Sustainable site selection, implemen-	BfN (Federal Agency for Nature Conservation)	3 years (2012 – 2015)	Identification of new land sites in the context of a nature conservation and biodiversity. Yield improvement and cost are taken into	<ul style="list-style-type: none"> • NABU • Planungsbüro Bosch & Partner GmbH • Allendorf/Eder, Nordhessen (Fa

tation and management of SRPs	BMU (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety)		account as well as management of SRC. http://www.nabu.de/themen/landwirtschaft/biomasse/kurzumtriebsplantagen/projekt2012-2015/	Viessmann) <ul style="list-style-type: none"> • Casekow, Brandenburg • Trenthorst, Schleswig-Holstein (Thünen-Institut)
ROD-PICKER	7th EU Framework Programme	2 years (2012 – 2014)	Development, construction and testing of an innovative, competitive and automatic harvesting and sorting system for SRC cuttings for European energy farmers and to increase the general competitiveness and sustainability of the European agricultural sector. http://rod-picker.eu/	<ul style="list-style-type: none"> • ttz Bremerhaven • Egedal Maskinfabrik A/S Denmark (Coordinator) • Salix Energi Europe AB Sweden • Lempe GBR • Technische Universität Dresden • Inuversitatea Polithenica Din Timisoara, Romania

1.1.3 Current research on SRPs in Poland

Project	Programme/Financing	Duration	Short Description	Consortium
Biomass Trade Centres	Intelligent Energy EIE/07/054/2007	3 years (2008-2010)	Local biomass markets in many countries are fragmented and unorganized. Biomass logistic and trade centres (BLTC) are a new and innovative way to develop and organise local biomass supply. BLTC are regional centers with optimized logistics and trading organization, where different biomass fuels (firewood, chips, pellets, energy crops etc.) are marketed at guaranteed quality and prices.	<ul style="list-style-type: none"> • University of Padua • AIEL Italian Agriforestry Energy Association • Styrian Chamber of Agriculture and Forestry • Slovenian Forestry Institute • Tuscany Agriculture and Forestry • Local Action Group of Garfagnana-Lucca
The International "Energy Crops – Creating Markets for Heat and Electricity" - Conference	ENCROP www.encrop.net	21-22. September 2010	The objective of the international conference was to discuss the implementation aspects of growing and utilisation of energy crops and how it is best organised in energy production with respect to ecological, technical, economic, logistic and administrative aspects	<ul style="list-style-type: none"> • MTT Agrifood Research Finland • European Biomass Association, AEBIOM • Universität für Bodenkultur Wien • University of Agricultural Sciences; Unit of Biomass Technology and Chemistry, Sweden • GERBIO, German Society for sustainable Biogas and Bioenergy Utilization, Germany • ETA, Energia, Transporti, Agricoltura srl, Italy
Biomass Supply Study for Fortum's CHP Plants in Poland	FORTUM	2012	Market volume of each biomass type with regard to its origin – situation for today and for future (biomass for energy needs potential; quantities that could be used in view of location of analyzed CHP plants).	<ul style="list-style-type: none"> • University of Life Sciences in Lublin, Poland • Institute of cultivation, fertilization and soil science in Puławy • Agricultural Advisory Centre in Radom • Institute of Technology and Life Sciences

			<p>Competition analysis results.</p> <p>Market screening results (market screening process and the problems identified; Biomass potential identified for Fortum's CHP plants).</p> <p>Trends on the biomass market (quantities and prices) in view of legal changes, competition, import potential and their up-to-date in context of the current market situation.</p> <p>Identified possibilities of synergies for biomass supply for both locations.</p>	<p>in Falenty</p>
<p>Possibilities of gaining Biomass for the Power Plant in Zamość (200 km since for Zamość – Poland and Ukraine),</p>	<p>DALKIA</p>	<p>2012</p>	<p>Origin – situation for today and for future (biomass for energy needs potential; quantities that could be used in view of location of analyzed CHP plants), competition analysis results, market screening results (market screening process and the problems identified; biomass potential identified for Fortum's HP plants) trends on the biomass market (quantities and prices) in view of legal changes, competition, import potential and their up-to-date in context of the current market situation, identified possibilities of synergies for biomass supply for both locations</p>	<ul style="list-style-type: none"> • University of Life Sciences in Lublin, Poland • Institute of cultivation, fertilization and soil science in Puławy • Agricultural Advisory Centre in Radom • Institute of Technology and Life Sciences in Falenty

<p>Study of economic and agronomic viability of energy Plantation for the Purpose of the planned CHP in Pruszkow</p>	<p>Vattenfall Heat Poland</p>	<p>1 year (2007-2008)</p>	<p>(biomass for energy needs potential; quantities that could be used in view of location of analyzed CHP plants) competition analysis results market screening results (market screening process and the problems identified; biomass potential identified for Fortum's CHP plants) trends on the biomass market (quantities and prices) in view of legal changes, competition, import potential and their up-to-date in context of the current market situation identified possibilities of synergies for biomass supply for both locations</p>	<ul style="list-style-type: none"> • University of Life Sciences in Lublin, Poland • Institute of cultivation, fertilization and soil science in Puławy • Agricultural Advisory Centre in Radom • Institute of Technology and Life Sciences in Falenty
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1.1.4 Current research on SRPs in Spain

Project	Programme/Financing	Duration	Short Description	Consortium
BIO-HEAT - Promotion of Short Rotation Coppice for District Heating Systems in Eastern Europe www.bio-heat.eu	Intelligent Energy Europe	2 years (2010-2012)	The BIO-HEAT project aims to promote the use of biomass from Short Rotation Coppice (SRCs) as a source of energy for District Heating (DH) systems in Eastern European countries (concretely Czech Republic, Romania, Poland, Slovakia and Lithuania), showing potential future end users (DH professionals, established municipal energy suppliers and land owners) and stakeholders (local authorities or policy makers) the advantages of using biomass from SRCs as a source of energy and its applicability on DH systems.	<ul style="list-style-type: none"> • BIOAZUL (Spain), • CZ-BIOM (Czech Republic), • Technology Transfer Centre Bremerhaven (Germany), • Lithuanian Biomass Energy Association, • Lithuanian District Heating Association, • The Polish Association of Research and Applied Agriculture Specialists, • Politechnical University Timisoara (Romania) • Slovak Biomass Association
BIOPROS - Solutions for the safe application of wastewater and sludge for high efficient biomass production in short-rotation plantations www.biopros.	Sixth Framework Programme – Collective project (Horizontal Activities Involving SMES)	3 years (2005-2008)	The aim of BIOPROS is to gain knowledge about the economic, ecological and technical feasibility of SRPs for different local conditions and market requirements and to transfer it to their SME members (farmers, biomass processors, engineers, decisions makers). This will contribute to promote SRP biomass production between SMEs throughout Europe and abroad. Main focus will lay on the safe and efficient application of wastewater and sludge to guarantee high yields and sufficient treatment performance without any negative	<ul style="list-style-type: none"> • Spanish Farmers' Association A.S.A.J.A. • Council of the Bulgarian Agricultural Organisation • CONFAGRICOLTURA Italian Farmers' Association • Estonian Farmers' Association • The Polish Association of Research and Applied Agriculture Specialists • Ulsters Farmers' Union (United Kingdom) • Silesian Farmers' Association (Poland) • European Biomass Industry Association (Belgium)

<p>info</p>			<p>environmental or hygienic impacts. Lack of knowledge about the high SRP potential and prejudices against the application of human wastes shall be minimised during the project as well as barriers against the application of SRP-biomass. For this reason, a wide range of aspects will be subject of research including SRPs' best practice and costs as well as related legislation and standards.</p>	<ul style="list-style-type: none"> • CZ BIOM (Czech Republic) • SK-Biom (Slovak Republic) • International Ecological Engineering Society (Switzerland) • AVSME (Estonia) • Helmut Lamp (Germany) • Leocomerce-2004 (Bulgarian) • GregorzPlonka (Poland) • Antonio Ramos Fernández (Spain) • Biomasa (Slovak Republic) • Laqua Treatment (Swedish) • ETA Florence (Italy) • Bioazul (Spain) • Technology Transfer Centre Bremerhaven (Germany) • Estonian Agricultural University • Swedish Agricultural University • Research institute for industrial crops (Italy) • University of Warmia and Mazury in Olsztyn (Poland)
<p>NETBIOCOF - Integrated European network for biomass co-firing www.netbioc</p>	<p>Sixth Framework Programme – Coordination Action</p>	<p>2 years (2005-2007)</p>	<p>The primary objective of NetbioCof is to promote European co-operation between research organisations devoted to biomass co-firing, promoting the uptake of innovative technologies to expand the use of biomass co-firing in new and existing power plants, with emphasis in the New Member States. A</p>	<ul style="list-style-type: none"> • Verein zur Förderung des Technologietransfers an der Hochschule Bremerhaven e. V.(Germany) • European Biomass Industrial Association (Europe) • Sveriges Lantbruksuniversitet (Sweden) • Eesti Põllumajandusülikool (Estonia)

<p>of.net</p>			<p>biomass co-ordination platform will be established, which will co-ordinate on-going research and strategic activities with the aim of identifying best practices and will propose strategies of implementation and directions for futures research.</p>	<ul style="list-style-type: none"> • Instytut Chemicznej Przeróbki Węgla (Poland) • Bioazul S.L (Spain) • Technical Research Centre of Finland (Finland) • Universitatea “Politehnica” Timisoara (Romania) • Biomasse Projekt GmbH (Germany) • KEMA Nederland BV (Netherlands) • Landeskammer für Land- und Forstwirtschaft Steiermark (Austria) • Institute Jozef Stefan (Slovenia) • ETA Renewable Energies (Italy) • Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (Spain) • Centre Wallon de Recherches Agronomiques (Belgium) • University of West Hungary (Hungary) • European Renewable Energy Centres Agency (Europe) • Joint Institute for Power and Nuclear Research “Sosny” (Belarus) • Scientific Engineering Centre BIOMASS (Ukraine) • TUBITAK Marmara Research Centre (Turkey) • Technological University of Sofia (Bulgaria) • Lithuanian Forest Research Institute
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				<p>(Lithuania)</p> <ul style="list-style-type: none"> • MB Finishing Engineering (Germany) • TNO-MEP Science and Industry (Netherlands) • Elsam Engineering A/S (Denmark)
<p>WACOSYS - Monitoring and control system for wastewater irrigated energy plantations</p> <p>www.wacosys.info</p>	<p>Sixth Framework Programme – Co-operative Research Project (CRAFT)</p>	<p>27 months (2004–2006)</p>	<p>The aim of WACOSYS is to develop, test and optimise a monitoring and control system (WACOSYS-system) for wastewater irrigation of SRP's which guarantees SRP-operators a safe and more efficient production in their plantations. The WACOSYS-System consists of a combined sensor-detector-dosage system which includes a monitoring, control and distribution unit which enables the dosing and distribution of the wastewater in accordance to the plantations demand for optimum plant growth and maximum uptake rates while observing critical loads in the effluent to avoid environmental pollution. That will strengthen the competitiveness of SRP produced biomass against other fuels and combustibles and will ensure the compliance with European and national environmental legislation.</p>	<ul style="list-style-type: none"> • Hydro-Air (Germany) • BIOAZUL S.L. (Spain) • Stab tratamento de águas e biotecnologia LDA (Portugal) • Munitsipaalasutus Karjäär (Estonia) • Antonio Ramos Fernández (Spain) • Profactus recycling & heating BV (The Netherlands) • Estonian agricultural university (Estonia) • Warsaw agricultural university (Poland) • Technologie transfer zentrum Bremerhaven E.V. (Germany)
<p>WAFLA - Integrated water resource management</p>	<p>Sixth Framework Programme – Coordination Action</p>	<p>30 months (2006–2009)</p>	<p>The objective of WAFLA is to coordinate the current research, technological innovation and social and policy development activities, creating synergies to promote the adoption of IWRM and improved agroforestry systems in</p>	<ul style="list-style-type: none"> • Technology Transfer Centre Bremerhaven (Germany) • Institute Desert (Brazil) • Nicaraguan Institute of Agricultural Technology

<p>by the implementation of improved agro-forestry concepts in arid and semi-arid areas in Latin America www.wafla.com</p>			<p>order to propose real solutions to combat the degradation of dry lands and to enhance rural development in Latin America. The main outcome of WAFLA is the identification of management strategies and policy options for the promotion of region-adapted agroforestry structures, by providing with a Latin American Joint Arid-Agroforestry Management Guidelines, based on the participatory management of agroforestry modules, with the involvement of local communities.</p>	<ul style="list-style-type: none"> • The Argentinean Arid Research Institute • Center for International Cooperation in Agricultural Research for Development (France) • International Center for Tropical Agriculture (Colombia) • Plant Research International (Netherlands) • Tropical Agricultural Centre of Research and Education (Costa Rica) • National University of Loja (Ecuador) • Center of Agroforestry for the Sustainable Development (Mexico) • Faculty of Forestry Sciences (Mexico) • Centre of Research in Ecology and Arid Areas (Venezuela) • Center of arid lands Research (Peru) • School of Agricultural and Forest Science (United Kingdom) • Salvadorian Centre of Appropriate Technology • Center of Information and Exchange for Ecologic Agriculture (Bolivia) • BIOAZUL (Spain) • EAN-Santiago (Chile) • Permanent Secretariat of the U.N. Convention to Combat Desertification and Drought (France)
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				<ul style="list-style-type: none"> • ACICAFOC (Costa Rica) • DeSdel-Chaco Foundation (Paraguay)
<p>AGROBIOGAS - An integrated approach for biogas production with agricultural waste www.agrobiogas.eu</p>	<p>Sixth Framework Programme – Collaborative Project</p>	<p>3 years (2006-2009)</p>	<p>The aim of AGROBIOGAS is to gather and gain knowledge about financial, legal and technical requirements to develop feasible agricultural AD treatments for different local conditions to further transfer it to their SME members. This will strengthen the competitiveness of AD treatment of agriculture waste against other treatments and will ensure the compliance with the European and national environmental legislation.</p>	<ul style="list-style-type: none"> • Dansk Landbrugsrådgivning Landscentret (Denmark) • European Biomass Industry Association (Europe) • Fachverband Biogas e.V- German Biogas Association (Germany) • Asociación Agraria Jóvenes Agricultores (Spain) • Slovenska Asociacia pre biomasu (Slovak Republic) • Deutsche Gesellschaft für Sonnenenergie e.V. (Germany) • Coordinadora de Organizaciones de agricultores y ganaderos (Spain) • Panhellenic Confederation of Unions of Agricultural Co-operatives (Greece) • Anneberg Gård (Sweden) • Hagaviks Gård AB (Sweden) • Azienda Agricola Testa Lara (Italy) • Polnohospodarske druzstvo Agricultural Cooperative (Slovak Republic) • Biomasse Energie GmbH (Germany) • Elbe Bioenergie GbR (Germany) • Reliable Environmental Solutions (Italy) • Santiago Apóstol SCA (Spain) • Bioazul S.L. (Spain)

				<ul style="list-style-type: none"> • EARL des Brimbelles (France) • Verein zur Förderung des Technologietransfers an der Hochschule Bremerhaven e.V. Umweltinstitut (Germany) • Syddansk Universitet (Denmark) • Sveriges Lantbruksuniversitet (Sweden) • Universität für Bodenkultur Wien (Austria) • Centre Wallon de Recherches Agronomiques (Belgium) • Universitat de Barcelona (Spain)
<p>ENERGY-POPLAR http://www.energypoplar.eu/index.php</p>	Seventh Framework Programme	4 Years (2008-2011)	<p>ENERGYPOPLAR is designed to develop new energy poplar trees having both desirable cell-wall traits and high biomass yield under sustainable low-input conditions to be used as a source of lignocellulosic feedstock for industrial production of bioethanol.</p> <p>To develop poplar as a second generation bioenergy crop, ENERGYPOPLAR brings together an interdisciplinary group of tree biotechnologists and breeders, hydrolysis and fermentation scientists, environmental specialists and those engaged in commercial-scale development of lignocellulose to ethanol in order to make step-change discoveries that will enable more efficient bioethanol production.</p> <p>ENERGYPOPLAR will actively promote transfer</p>	<ul style="list-style-type: none"> • Institut National de la Recherche Agronomique (INRA - Nancy/France) • Sveriges Lantbruksuniversitet (SLU - Ume/Sweden) • Albert-Ludwigs-Universitt Freiburg (ALU - Freiburg/Germany) • Flanders Institute for Biotechnology (VIB - Gent/Belgium) • University of Southampton (SOTON - Southampton/United Kingdom) • Istituto di Genomica Applicata (IGA - Udine/Italy) • Georg-August Universitt Gottingen (UGOE - Gottingen/Germany) • SweTree Technologies (STT - Ume/Sweden) • Imperial College (Imperial - London)

			of technology and biological materials for commercialisation to bioenergy companies, plant breeders, European forest-based and land-based sector, scientists, policy makers and consumers.	<ul style="list-style-type: none"> /United Kingdom) • INRA Transfert (IT - Paris/France)
<p>Biomassud European Project SOE2/P2/E414</p> <p>http://biomassud.eu/en/</p>	SUDOE Interreg IV B	3 Years (2011-2013)	Biomassud is a project inside the frame of the program Interreg IV B, financed with funds FEDER. The project BIOMASUD has as objective the design and the implementation of mechanisms of support that they help to the development of a sustainable solid biomass market. A few minimal sustainability requests will be defined in the whole chain of value for this market. Also, there will be created a system that audits and certifies the fulfillment of these requisites, as well as a system of traceability that allows managing the resources from a global perspective	<ul style="list-style-type: none"> • CIEMAT, Centre for energy, environment and technological research (Spain). • UCE: Consumers Union (Spain) • CBE: Centro da Biomassa for Energia (Portugal) • TRC: Center for the Valorizaçao of waste (Portugal) • UCCF: Union of Cooperation Forestière Française (France) • INRIA: Institute national de Recherche en Informatique et Automatique (France)
<p>PROFOR-BIOMED</p> <p>http://www.pforbiomed.eu/the-project</p>	European regional Development Funds ERDF	3 Years (2011-2013)	The general objective of the project is to promote renewable energies in Mediterranean regions by developing an integrated strategy for the use of the forest biomass as a renewable energy source, recovering the forest biomass potential, developing the fundamental technical and legal aspects and promoting the use of forestry biomass for energy through the involvement of the key stakeholders in a forestry biomass production chain that takes	<ul style="list-style-type: none"> • Región de Murcia, Spain • Energy Managing Agency of Murcia, Spain • Generalitat Valenciana, Spain • Municipality of Enguera, Spain • Forest Technology Center of Catalonia-CTFC, Spain • Institute for Environmental Protection and Research-ISPRA, Italy • Lombardy Foundation for the Environment-FLA, Italy

			<p>into account sustainability and compatibility with other uses in Mediterranean forests and provides new economic opportunities in rural areas. The project will work with all the public and private stakeholders related to forestry biomass chains at all levels (from national to regional and local): local and regional administrations, forest owners, energy agencies, farmers, NGO, etc.. This multilevel approach is developed at project level and at country level.</p>	<ul style="list-style-type: none"> • Region of Sicily, Italy • International Association for Mediterranean Forests-AIFM, France • Regional Center for Forest Ownership of Paca Region, France • Institute for the Conservation of Nature and Forest-ICNF, Portugal • Agency for Solid Wastes Treatment in Algarve-ALGAR, Portugal • Business and Environmental Science Research Center-CICAE, Portugal • Region of Western Macedonia, Greece • University of Western Macedonia, Greece • Agency for Planning and Development of Patras, Greece • Slovenian Forestry Research Institute, Slovenia • Local Agency for Energy of Spofnje Podravje, Slovenia
<p>BIOCLUS- Developing a research and innovation environment in five European regions in the field of</p>	<p>Seventh Framework Programme</p>	<p>3 Years (2010-2012)</p>	<p>BIOCLUS project promotes collaboration and integration of cluster regions and strengthens the innovation environment by improving research potential and innovation management. It supports sustainable development by improving the use of biomass resources. The development is achieved by: 1) Promoting scientific, strategic and business</p>	<ul style="list-style-type: none"> • Central Finland, Finland • CENER, SPAIN • Wielkopolska, Poland • Western Macedonia, Greece • NFC, Slovakia

<p>sustainable use of biomass resources http://www.bioclus.eu/en/</p>			<p>competence at cluster and consortium level; 2) Developing collaboration capabilities in the clusters and consortium level; and 3) Improving innovation to business environment by mutual learning and by mentoring.</p>	
<p>BIOMAP- Development of Time-enable Mapping and Dissemination Tool for Biofuels Projects http://eu-biomap.net/</p>	<p>Seventh Framework Programme</p>	<p>3 Years (2008-2010)</p>	<p>BIOMAP is a co-financed project by the European Commission through the 7th Framework Programme for research and technological development aiming to provide a detailed information and dissemination tool for biofuels technologies by its completion on October 2010; at present it is still in the development stage. BIOMAP will provide detailed information both for European Commission contracts funded under FP6 and FP7 as well as for industrial projects and plants developed by the industry. Furthermore the BIOMAP includes also information on numerous players in the biofuel sector such as associations, industrial organisations, technology developers et al, and gradually will have information from all EU Member States on national legislation and research institutions per Member State. It also has a section on all relative standardisation work undertaken by CEN whether under EC mandates or independently. Finally BIOMAP</p>	<ul style="list-style-type: none"> • Exergia S.A., Greece • KCL-King's College London, United Kingdom • NL Agency, Netherlands • EBB-European Biodiesel Board, Belgium • eBIO-European Bioethanol Fuel Association, Belgium • UmU-Umea University, Sweden

			will also have section on all relative EU legislation. BIOMAP links interrelated entities such as biofuel players, projects, production plants, policies and standards in a visual interface comprising a list view, a non-geographical map view and a geographical map view over time. The BIOMAP aggregates complex interrelationships in the biofuels sector while its time function enables the viewing of developments in a given time window.	
<p>FARMAGAS - Biogas production from Agricultural Wastes in European Farms www.farmagas.eu</p>	Intelligent Energy Europe	2 years (2009–2011)	<p>FARMAGAS aims to promote the further development of the biogas sector in specific high-potential countries by know-how dissemination and knowledge transfer in order to enhance anaerobic digestion of agricultural wastes in European farms.</p> <p>FARMAGAS was mainly based on the results of the successful Collective Research project funded by the FP6 called “AGROBIOGAS”.</p>	<ul style="list-style-type: none"> • TTZ-Bremerhaven (Germany) • Bioazul S.L. (Spain) • The Danish Agricultural Advisory Service, National Centre (Denmark) • The Polish Association of Research and Applied Agriculture Specialists (Poland) • FruitVeb Hungarian Interprofessional Organisation for Fruit and Vegetables (Hungary) • The Romanian National Agriculture Producer Federation (Romania)

1.1.5 Current research on SRPs in United Kingdom

Project	Programme/Financing	Duration	Short Description	Research institutions
RELU Biomass	Rural Economy and Land Use Programme. Research Councils UK	3 years 2006-2009	A research project investigating the social, economic and environmental implications of increasing the area used for growing the perennial biomass crops miscanthus and short rotation coppice (SRC) willow in the UK. http://www.relu.ac.uk/events/Janconf06/Presentations/Karp.pdf http://www.relu.ac.uk/news/policy%20and%20practice%20notes/Karp/Karp.pdf http://www.esds.ac.uk/doc/6615/mrdoc/pdf/6615uguide.pdf	<ul style="list-style-type: none"> • Rothamsted Research Game Conservancy Trust • University of East Anglia • University of Exeter • Centre for Ecology and Hydrology
Supergen (Sustainable Power Generation and Supply)	Engineering and Physical Sciences Research Council		The SUPERGEN Bioenergy Hub aims to bring together industry, academia and other stakeholders to focus on the research and knowledge challenges associated with increasing the contribution of UK bioenergy to meet strategic environmental targets in a coherent, sustainable and cost-effective manner. http://www.supergen-bioenergy.net/	<ul style="list-style-type: none"> • Tyndall Centre for Climate Change Research • University of Manchester • Aston University • University of Bath • University of Leeds • Newcastle University • Rothamsted Research • Acr Energy • Dalkia Plc

				<ul style="list-style-type: none"> • Drax • North Energy Associates • Sustainable Energy Ltd • Progressive Energy Ltd
<p>TSEC - Biosys (A whole systems approach to bioenergy demand and supply in the UK)</p>	UK Research Councils	3 years 2006-2009	<p>Large inter-disciplinary research team collaborating to provide authoritative and independent answers on technical, economic, environmental and social issues related to the development of bioenergy in the UK.</p> <p>http://www.tsec-biosys.ac.uk/index.php?p=2&pp=0</p>	<ul style="list-style-type: none"> • Centre for Ecology and Hydrology • Imperial College Biology • Imperial College Centre for Environmental Policy • Imperial College Centre for Process Systems Engineering • Institute for European Environmental Policy • North Energy Associates • Oxford University Centre for the Environment • Rothamsted Research • Scottish Agricultural College • The Edinburgh Centre for Carbon Management • University of Aberdeen • University of Birmingham • University of Glamorgan • University of Southampton • University of Surrey
BREDNET-SRC	Eranet Bioenergy (EU)		European research project looking at applying	<ul style="list-style-type: none"> • Rothamsted Research in the UK

			<p>marker assisted breeding technology to willow breeding for biomass yield and disease resistance.</p> <p>http://www.woodwisdom.net/mm_files/do_897/BREDNET_SRC%20Final%20Helsinki.pdf</p>	<ul style="list-style-type: none"> • Swedish University of Agricultural Sciences • Uppsala University in Sweden • 3N – Lower Saxony Network for Renewable Resources in Germany • Murphy-Bokern Konzepte in Germany • Northwest German Forest Research Station • Lantmännen/Agroenergie AB in Sweden
<p>The Biomass for Energy Genetic Improvement Network (BEGIN)</p>	<p>Department of Environment, food and rural affairs (DEFRA)</p>	<p>7 years 2003-2010</p>	<p>UK Government supported willow breeding programme.</p> <p>http://www.rothamsted.ac.uk/corporate/pdfs/GrowingEnergy.pdf</p>	<ul style="list-style-type: none"> • Rothamsted Research
<p>Accelerating breeding for biomass yield in SRC willow using knowledge of shoot branching in Arabidopsis</p>	<p>BBSRC - Biotechnology and Biological Sciences Research Council</p>	<p>6 years 2007-2013</p>	<p>Research project aiming to utilise advanced knowledge in Arabidopsis to investigate the genetic regulation of coppicing in willow.</p> <p>http://www.bbsrc.ac.uk/pa/grants/AwardDetails.aspx?FundingReference=BB/E006833/1</p>	<ul style="list-style-type: none"> • Rothamsted Research

1.1.6 Current research on SRPs in Ireland

As there were no known research activities on SRPs in Ireland, the table focuses on known related European programmes in bioenergy.

Project	Programme/Financing	Duration	Short Description	Consortium
Bioregions www.bioregions.eu	Intelligent Energy Europe	3 years (2010-2013)	Promoting the development of 'bioenergy regions' across Europe, defined as regions that aim to produce at least one third of the regional energy demand (excluding transport) from local and sustainable bioenergy sources, with a focus on sustainable biomass.	<ul style="list-style-type: none"> • WIP Renewable Energies, Germany, www.wip-munich.de • ENVIROS Czech Republic, www.enviros.cz • VTT Technical Research Centre of Finland, Finland, www.vtt.fi • AUA Agricultural University of Athens, Greece, www.aua.gr • BAT Biomassehof Achental, Germany, www.biomassehof-achental.de • LTC AB County of Jönköping, Sweden, www.ltc.se (until 12/2011) • Ekodoma, Latvia, www.ekodoma.lv • WestCD Westmeath Community Development limited, Ireland, www.westcd.ie • EAP Energy Agency of Plovdiv, Bulgaria, www.eap-save.eu • SAT Regional planning syndicate of Trieves, France, www.alpes-trieves.com • EAZK Energy agency of the Zlin region, Czech Republic, www.eazk.cz • Capital Connect Consultants Greece, www.capitalconnect.gr • ELARD aisbl European Leader Association

				for Rural Development, Belgium, www.elard.eu
RASLRES http://www.rasres.eu/	Northern Periphery Programme	6 years 2007 - 2013	RASLRES is a unique project (in the NPP area) which aims to increase the level of deployment of renewable energy technologies in rural economies, helping facilitate the creation of local fuel markets, using different technologies and biomass fuels to support locally managed – and owned – supply systems and business models for producing and using renewable energy.	<ul style="list-style-type: none"> • Western Development Commission, Ireland • Action Renewables, Northern Ireland • Environmental Research Institute, Scotland • Municipality of Norsjö, Sweden •
FOREST http://www.forestprogramme.com/	Intelligent Energy Europe.	2 years (2010-2012)	The project will be carried out by business support agencies from 7 regions in Austria, Ireland, Italy, Poland, Spain, Sweden and the United Kingdom. This will allow the exchange of experience from businesses in more developed markets to those in less developed markets. It aims to work across the whole supply chain covering everything from the supply of the fuel to the installation and maintenance of the boiler systems. The focus is on non-domestic applications from 100 kW to 1 MW as well as small to medium scale CHP and district heating up to 10MW. The biomass fuels covered will be pellet and wood chip from all sources including forestry, arboricultural arisings, waste wood and energy crops.	<ul style="list-style-type: none"> • University of Exeter (UK), • Regen South West (UK), • Severn Wye Energy Agency (UK), • Energikontor Sydost (Sweden), • Baltycka Agencja Poszanowania Energii SA (Poland), • O.Ö. Energiesparverband (Austria), • Comitato Termotecnico Italiano (Italy), • Tipperary Energy Agency (Ireland), • Agencia de Provincial de la Energia de Burgos (Spain)
BioMassTrade	Intelligent Energy	Current	The BiomassTradeCentrell project aims at	<ul style="list-style-type: none"> • Slovenian Forestry Institute

<p>Centre II http://www.biomassstradecentre2.eu/</p>	<p>Europe.</p>		<p>increasing the production and the use of energy from wood biomass by organizing motivation events that will engage identified target groups to invest in biomass business and biomass logistic and trade centers (BLTC) in 9 EU countries (Austria, Croatia, Germany, Greece, Ireland, Italy, Romania, Slovenia and Spain), by presenting clear, integrated and market orientated information to potential investors: farmers and forest owners, forest entrepreneurs, wood energy contractors and other stakeholders regarding business opportunities to produce and sell energy products and services to the market. It will also foster wood energy contracting between biomass providers and potential users.</p>	<ul style="list-style-type: none"> • Styrian Chamber of Agriculture and Forestry • Italian Agriforestry Energy Association • North-West Croatia Regional Energy Agency • Forest Sciences Center of Catalonia (Centre Tecnologic Forestal de Catalunya) • Spanish Bioenergy Association • Waldverband Steiermark GmbH • Styrian Forest Owners Association • Centre for Renewable Energy Sources and Saving • S.C. I.C.P.E. BISTRITA S.A. • Irish Bioenergy Association • Technische Universität München
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