CEUBIOM

Classification of European Biomass Potential for Bioenergy Using Terrestrial and Earth Observations

List of Partners

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1(coordinator)	Geonardo Environmental Technologies Ltd.	GEO	Hungary	1	33
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Partner No 1	*GEONARDO Environmental Technologies Ltd*	*1. Hungary*
	www.geonardo.com	*GEO*

Role GEONARDO is in a unique position that it has been involved in several national and international projects that are related to either Earth Observation or the assessment of biomass potential or the combination of both. The IT department of the company also has the experience in developing advanced e-platforms for training and development. The thorough understanding both the EO/biomass and IT requirements of this project together with its extensive biomass network in Central-Eastern Europe will ensure fluent communication with project partners and also guarantee efficient coordination.

Relevant Experience In the year 2000 GEONARDO's first international project on the application of EO was accepted by the Nato Science Programme. The TEAMSAT project (Transboundary Environmental Monitoring and Management with High-resolution Satellite Remote Sensing, www.teamsat.org) coordinated by GEONARDO was followed by a series of high profile national and international contracts. In the Iron Curtain FP5 project (NQLRT-CT-2001-01401, www.ironcurtainproject.com) GEONARDO used satellite data to monitor landuse changes in rural areas along the former „Iron Curtain" areas since the fall of the Berlin Wall. Organising a series of high profile biomass-related events such as the March 1-2 2006 International Stakeholder Forum for the Biofuel Marketplace project (coordinated by GEONARDO, EIE/05/022/SI2.420009, www.biofuelmarketplace.com) lead to the establishment of a wide network of strategic partners in the region that made the establishment of the present consortium possible. Further relevant projects include: Energy Forest www.energyforest.com, 2000/C 303/10 with the objective to formulate a theoretical decision-support model, which could be a useful analytical tool in the hand of farmers, growers and policy-makers. The model helps to identify those pieces of mainly agricultural land, on which energy forest development and biomass planting would be economically rational and recommended with non-productive lands, potential energy forest planting locations are mapped and then categorised. The staff of the company use satellite data processing and GIS software on a daily basis.

Key Staff Mr. Balazs Bodo is a geologist and the Managing Director of GEONARDO since 1999. He is geologist with several years of international remote-sensing and environment related project experience. Early-career studies and research include Sweden where he obtained his second MSc degree in Environmental Engineering. In Zimbabwe and Norway (Nansen Environmental and Remote Sensing Center - NERSC) he participated in a variety of remote sensing related European research projects. Earlier in Portugal he was a member of the Ecological Modelling Team of the New University of Lisbon processing satellite and water quality data for the Tagus estuary, Lisbon. **Mr. Gabor Kitley** is a geologist (MSc) currently doing his PhD on the application of fuzzy set theory in environmental sciences. He has several years of international experience of environmental research, management and feasibility studies. **Ms Izabella Pinter** is a geographer and will assume overall project management duties.

Partner No 2	*Remote Sensing Solutions GmbH*	*2. Germany*
	www.rssgmbh.de	*RSS*

Role RSS is active service provider in several GMES projects (e.g. GEOLAND, GLOBWETLAND), where the company has proven its primary competence in the application of Earth Observation data for land cover status assessment, biomass estimations and implications to the carbon cycle. Latest biomass estimation techniques based on EO data, as required for GHG reporting, will be implemented in accordance to the IPCC Good Practice Guidelines 2006. An effective combination and harmonization of existing EO and in-situ methods will be applied. These methodologies and guidelines are under continuous discussion in the scientific community and thus need constant review, which will be implemented within CEUBIOM.

Relevant Experience Numerous high profile research and consultancy projects were implemented by RSS in the context of the CEUBIOM subject area. **DeCOVER**, as the German contribution of GMES, will deliver a validated concept to provide geoinformation services meeting the growing demand by users to support them in their monitoring and reporting obligations. These services will allow improving existing data sets as well as providing new data information using innovative interoperability techniques and latest satellite technologies. Within **GSE FOREST MONITORING**, one of the key elements of the GMES programme, services and products cover accurate, reliable, timely and effective information on the state of global forest systems in order to support decision-making and improved policies that enable sustainable forest management. The offered services and products are compliant with specific protocols and binding conventions and are related to user and/or policy-driven activities. The combination of EO and in-situ data within the GSE-FM approach allows users responsible for reporting under the Kyoto-Protocol to achieve the highest levels of reporting confidence. RSS managed numerous other projects with strong emphasis to the practical application in the field and day-to-day operations, GIS and remote sensing.

Key Staff

Prof. Dr. Florian Siegert, who is managing director of RSS, has more than 20 years professional experience in research, constancy and international project management. As biologist/ecologist he is specialized in the application of remote sensing and GIS in forestry and environmental monitoring. His expertise in environmental monitoring based on the analysis of remotely sensed data will also facilitate the definition of guidelines related to international obligations, like the Convention on Biological Diversity (CBD) or the Kyoto Protocol. In addition Prof. Siegert has published more than 50 papers in reviewed journals.

Dr. Claudius Mott is a specialist in modern remote sensing techniques and advanced data fusion methodologies. He is biologist with a PhD in forestry and remote sensing. In addition to his software and data handling/data base knowledge, Dr. Mott possesses long time experience in environmental research, forestry and national and international conservation policy. He is responsible project manager for a service element of the GMES project GSE FOREST MONITORING, where the Indonesian government is supported with GHG-reporting.

Partner No 3	*Center for Promotion of Clean and Efficient Energy in Romania*	*3. Romania*
www.enero.ro		*ENERO*

Role ENERO will contribute to key CEUBIOM objectives by promoting and supporting the acceptance of renewable energy sources in Romania, the efficient use of energy, and implementation of new and innovative energy technologies. ENERO will be a key contributor to Platform activities and stakeholder communication. Another permanent key priority for the staff's contribution is the analysis and the dissemination of the EC Directives/policies in this field, in order to increase the awareness of the Romanian decisional bodies and market actors.

Relevant Experience During 2000-2002, ENERO was member of the OPET Network - managed by the EC-DGTREN. ENERO was contributing in a work package: *Trans-European Biofuel Transportation Analysis and* gained its experience in biomass field. As subcontractor to the European *Research Area - Bioenergy Strategy* FP5 - ENK5-CT2001-80526, ENERO developed Romanian specific strategies for measures to promote bioenergy RTD policies and programmes. Biomass is a key renewable energy resource for Romania, to produce heat and electricity as well, and in this respect, potential assessment and strategic use were approached in projects as *Renewable Energy for Heat Supply in Dwellings with Individual and Local Heating Systems* http://www.rehes-project.org/ and the ALTENER *RES2020* and *GreenNET Incentives.* Regarding biofuel, another relevant bio energy resource for Romania, ENERO was involved in the ALTENER project BIOEAST- http://bio-east.exergia.net/. In 2004-2005 ENERO was participated in a project within the Dutch intergovernmental cooperation programme: *Assistance for the implementation of the Directive 2003/30/EC on the promotion of the use of biofuels.*

Key Staff

Cristian Tantareanu holds a MSc on Power Engineering Degree (1969) from the Bucharest Polytechnic University. Since 1980 he has been active with the Power Research Institute in Bucharest, on renewables research and studies. Between 1991 and 1992 he completed his professional experience as visiting researcher in Rutherford Appleton Laboratory, UK and Folkecenter, Denmark. In 2000, in the position of Scientific Director of the Power Research Institute, he left this organisation and was one of the founder of the ENERO Center, focusing on energy analysis, renewables and energy policy issues. He has participated with ENERO in a number of EU funded projects.

Sorin Cheval is associated expert to ENERO, and senior researcher scientist in the Climate Research Group of National Meteorological Agency. His expertise focuses on remote sensing applications in climatology. He was a Fulbright grantee at the Hazards Research Lab, University of South Carolina, USA (2001-2002).

Elena Vaduva is a young researcher, who post graduated in information processing and transmission course, working with Valahia University of Targoviste and the Romanian-American University. Since 2006 she is working with ENERO on renewables projects.

Partner No 4	*University of Ljubljana*	*4. Slovenia*
http://cdes.fe.uni-lj.si		*UL*

Role The Center of Distributed Energy Sources at the Faculty of Electrical Engineering, University of Ljubljana is the central research group for distributed energy sources in Slovenia, where four laboratories are covering RTD&I aspects of efficient use of energy, renewable energy sources, in particular photovoltaics, power networks, power systems, electricity markets and energy policy. Results from previous investigations will be integrated to activities related to terrestrial biomass methods utilising the databases of the laboratory. UL will also work closely together with FER in WP3 in an effort of biomass policy harmonisation between Croatia and Slovenia.

Relevant Experience The Center engages almost 40 people and the PV group as the largest counts 18 members and it is headed by Professor Marko Topic, who is a very active member of European Photovoltaic Technology Platform (http://www.eupvplatform.org). The main research directions are optimal operation of hydro thermal systems, forecasting the availability of renewable energy sources, and electricity market opening related research, with emphasis on electricity market simulation, strategic bidding and demand/price forecasting. The group is also active in industrial projects, ranging from hydro power analysis, long term energy supply simulations, asset management and renewable energy sources potentials investigations. Apart from the participation in several EU projects dealing with renewables (FP5: PVNET, aSiNet, ADVOCATE, SOLTRAIN; FP6: ATHLET, Flexcellence, VBPC-RES – Virtual Balkan Power Centre for Renewable Energy Sources, www.vbpc-res.org, RISE – Renewables for Isolated Systems, www.rise05.net), the group has been involved in a number of national research projects. Through the coordination of VBPC-RES project, CDES has channelled its experience to organization of more than 15 international workshops, seminars, summer schools, conferences and student contests on the topic of RES, culminating in six international annual Balkan Power Conferences in a row. The education of undergraduate and postgraduate students in the frame of highly innovative research represents also a challenge for their advisors. The increasing number of publications represents a measure for the success of the CDES's efforts to combine high quality research with the education and formation of young engineers and scientists.

Key Staff:

Andrej F. Gubina, Assist. Prof. of Electrical Engineering received the D.Sc. degree in Electrical Engineering from the Faculty of Electrical Engineering, University of Ljubljana in 2002. Between January 2000 and March 2001 he was a Fulbright Visiting Researcher at the Massachusetts Institute of Technology, Cambridge, MA. Between 2002 and 2005 he headed the Risk Management Department at Sales and Trading Division of HSE d.o.o., Ljubljana. Since February 2005 he is senior researcher and since March 2007 the Head of the Laboratory for Energy Policy (member of CDES) at the University of Ljubljana. He published a number of papers in the field of power system analysis, operation and control, the impact of power system deregulation on transmission and distribution systems, renewable energy sources, power economics and risk management. He has been a principal investigator in several projects for power utilities. He is currently coordinating one 6th Framework Program Project (VBPC-RES, INCO-CT-2004-509205) and leading a work package in another (RISE, INCO-CT-2004-509161). He is the Organizing Committee President of the Balkan Power Conference. He is a member of IEEE and Sloko CIGRE Study Committee C5.

Partner No 5	*University of Zagreb Faculty of Electrical Engineering*	*5. Croatia*
	www.fer.hr	*FER*

Role The contribution of the Faculty in CEUBIOM will be related to the assessment of analytical and software tools, which will enable a smooth uptake of biomass for enerrgy in Croatia, to analyse technical, economic and environmental aspects of various biomass technologies, examine the role and support mechanisms for biomass for biofuel within a liberalised market, evaluate power system planning methods under uncertain conditions and examine the role of decentralised energy sources in increasing power supply reliability and efficiency. Significant share of activates will be directed towards communications with the industrial and service sector, support for policy making in this field and research on possible energy efficiency improvements and their contribution to the security of energy supply in Croatia, region and the EU.

Relevant Experience Besides in educational energy related programmes for undergraduate, graduate and postgraduate students, it has been actively involved for many years in analyses linked with establishment of new strategies for energy sector and power system development for the Republic of Croatia. It has experience in preparing medium and long-term electricity generation development plan for power system, performing comparisons of energy, economic and environmental characteristics of different options for electric power generating, preparing studies for rational use of energy, energy savings and renewable energy sources (RES) utilisation. The Faculty has been involved in number of national and international projects through which it gained experience and knowledge of EU's and Croatian energy framework, policy and stakeholders' relations. Some of these projects are listed hereafter:
FP6 project "Virtual Balkan Power Centre for Advance of Renewable Energy Sources in Western Balkans", "Green Energy Program Utilisation", "Emission Trading Simulator", "Emission Trading – Impact on the Power System Operation and Development Planning", "Pre-Feasibility Study to Promote Energy Efficiency in Croatia", "Energy Efficiency in Small and Medium Enterprises", "Green Energy Program for Croatian Power Utility", "Role of Green Certificates on the EU Open Electricity Market – Implication and Obligation on the Croatian Power Utility"

Key Staff

Prof. Nenad Debrecin, Ph.D., is associate professor at the Department of Power Systems, Faculty of Electrical Engineering and Computing in Zagreb, where he has been working since 1976. His expert and scientific work covers following fields: Electricity Generation Planning, Energy and Environment, Energy Management and Nuclear Power. Currently he holds the position of Head of Department of Power systems. Assistant **prof. Željko Tomšić** is respected expert in energy management and environmental protection, currently also working as Assistant Minister at Ministry of Economy, Labour and Enterpreneurship. **Dr. Maja Božičević Vrhovčak** is senior researcher and expert in renewable energy sources, especially wind and solar energy utilisation. **Vesna Bukarica M.Sc.E.E**. is research assistant and her research work covers primarily energy efficiency, environmental impact of electricity generation and renewable energy sources. **Boris Sučić, M.Sc.E.E**. is researcher involved in energy efficiency, especially energy auditing and estimation of energy saving potentials. **Robert Pašičko, dipl.ing**. and **Slavica Robić,** dipl.ing. are also research assistants working on emission trading, Kyoto Protocol mechanisms and renewables. All of them are employed at the Faculty.

Partner No 6	*Ciheam-Mediterranean Agronomic Institute*	*6. Greece*
	www.maich.gr	*MAICh*
Role MAICh aims (a) to assist the E.U. and Greek foreign policy in biomass research and will join in the assessment work on terrestrial methods in the context of implementation of national and international research policy with participation in the activities inaugurated through the Community Support Framework, by the Ministry for Development, the General Secretariat for Research and Technology, as well as in application development actions carried out by the Ministries of National Economy (INTERREG), Agriculture, and Environment (LIFE), and the Regional Authority of Crete. MAICh is also leader of Dissemination activities (WP7) to contribute to regional and local development through innovative actions within biomass/EO development schemes.		
Relevant Experience MAICh has been involved in the ALTENER project (DG-General for Energy (XVII), No.4.1030/Z/97-128), which aimed to study the conditions for an efficient development of a heat generation plant which is to be fuelled by biomass and the BOIS/ENERGIE (PEEVI.94-10(31/F12)) project focusing on the exchange of experiences among involved regions, regarding exploitation of wood as an energy source and the definition of the best conditions for wood exploitation for energy at the regional level. MAICh also took part in the Classification and Mapping of Mediterranean Forests and Maquis with Satellite Data project (No. 5055-90-07 ED ISP GR), the SPREAD project (EVG1-2001-00027), which provided a framework for the development and implementation of an integrated forest fire management system for Europe and the FIREGUARD project (FAIR/ QLRT-2000-00748), regarding the observation of forests on a Management Unit level for fire prevention and control. Additionally, MAICh has also participated in the GEOLAND project (ITD.2003-0350-0-1/A.2003-5001-0-1), focusing on the monitoring of land cover and vegetation as input into future end-user oriented geo-information products and services. Currently MAICh is involved in the FIREPARADOX program, dealing with the prediction of ignition and fuel flammability and temporal variation in fuel moisture, fuel typology, characterisation and mapping using remote sensing.		
Key Staff Dr Dimitris ZIANIS is a forest ecologist specialised in estimating biomass and productivity of forest ecosystems with an MSc in Forest Management and Ecology and a PhD in Forest Ecology. His experience involves a post-doc period in the developing of a European-wide database of stem volume and biomass allometric equations. He is the author of five articles published in peer-reviewed scientific journals related to the estimation of forest biomass and productivity and acts as a reviewer in two journals on the same topic. **Dr. Chariton Kalaitzidis** is a remote sensing expert with an MSc in Environmental Remote Sensing and a PhD in chlorophyll and nitrogen estimation of vegetation using remotely sensed data. His research experience also involves studies in biomass estimation of agricultural plants using satellite data. **Dr Ioannis Manakos** leads the research and academic activities of the Department of Environmental Management. He is involved and/ or coordinates research activities/ projects regarding geoinformation technologies (remote sensing, GIS) applications in natural resources management, agriculture, and education. He is the author and/ or co-author of more than 20 publications in journals, books, and conferences.		

Partner No 7	*Joanneum Research Forschungsges m.b.H*	*7. Austria*
	http://www.joanneum.at/	*JR*

Role: Joanneum Research has been involved in numerous national and international projects related to Earth Observation. With its unique experience and expertise Joanneum Research has the capacity to become a leader in one of two key Work Packages within the project with a massive contribution to another. The organization will coordinate WP3 Current Terrestrial Methods and Activities for Biomass Assessment and provide a strong contribution to WP4: Combination and Harmonization of EO and Terrestrial Methods.

Relevant Experience The Institute of Digital Image Processing can offer a wide scope of know-how in the processing of remote sensing data from both active and passive sensors, from airborne as well as space-borne systems. The department is concentrating first on the development of new algorithms and application methods for inventorying natural resources, vegetation damage and natural risks and secondly for the geometrical processing of all kind of remote sensing data. The Institute of Energy Research is experienced in investigating and technical development in the whole field of renewable energy sources. The institute of Energy Research is partner among others in several EU projects, dealing directly or indirectly with monitoring of biomass assessment: Bioenergy-NoE, VBPC-RES, Carbo-Europe and will provide experience and results of those activities in the subject project.

Key Staff - Prof. Dr. Mathias Schardt is head of the Institute of Digital Image Processing at Joanneum Research and head of the Institute of Remote Sensing and Photogrammetry at the Technical University Graz. He has more that 20 years of experience in remote sensing and GIS. From 1985 to 1990 he was employed as a junior scientist at the German Aerospcae Research Establishment (DLR). From 1990 to 1994 he worked as senior scientist at the TU Berlin at the Institute of Landscape Planning and Nature Reserve. Mathias Schardt has a degree (equivalent to M.Sc.) and a Ph.D. in "Forest Science" form the Albert Ludwigs University of Freiburg. **Heinz Gallaun** works as a scientist and project manager at the Institute of Digital Image Processing at Joanneum Research. His main fields of experience are: Project Management of national and international Research Projects in the field of forest parameter estimation (stem volume, woody biomass, carbon stocks), land cover and land cover change assessments by means of remote sensing methods, and habitat modelling and assessment of land cover changes for Natura2000 nature protection sites by means of remote sensing and geoinformatics.

Dr. Reinhard Padinger His main fields of experience are: project management of national and international research projects in the field of renewable energies, biomass and residues combustion optimization, emission reduction, particulates precipitation, biogas production and utilization, and process modelling. **Max Lauer** Since 1982 scientist at Joanneum Research, Institute of Energy Research. Project manager of various national research projects concerning renewable energy and energy planning. Partner in several EU projects, National representative in IEA Bioenergy task 34 Pyrolysis.

Partner No 8	*Institute of Geodesy and Cartography*	*8. Poland*
	www.igik.edu.pl	*IGIK*

Role The Institute of Geodesy and Cartography will be involved in project activities related to Earth Observation and dissemination. Activities cover the broad range of research and application-oriented works related to the use of aerial and satellite images for deriving information on Earth surface. The Department of Remote Sensing will conduct assessment works on using aerial and satellite images for land cover / land use mapping with different levels of detail and for updating land cover maps by application of new-generation satellite data. Scientific expertise on the state of biomass production on the basis of remotely sensed data with an effective combination and harmonization of existing EO and in-situ methods will be applied. These methodologies and guidelines will be implemented within CEUBIOM.

Relevant Experience the Department conducts the Projects on : Assessment of energy budget fluxes over the vegetation, calculation of evapo-transpiration and various soil-vegetation indices using NOAA/AVHRR; MODIS ; Modelling LAI using remote sensing and insitu data. Application of biomass parameters for crop and vegetation growth modelling.
Application of microwave ENVISAT-ASAR data for soil moisture assessment and wetlands monitoring. Land use/ land cover mapping.

Key Staff

Prof. Katarzyna Dąbrowska-Zielińska is the head of Department of Remote Sensing - OPOLiS. She received Ph.D. degree from the Australian National University in Canberra in 1987 as a result of research works on using NOAA satellite images for studies of eucalyptus forests. In 1995 she was awarded Fullbright grant for conducting in Phoenix, USA works on modeling crop yields with the use of meteorological and remote sensing data. Her main research interests are related to the use of information derived from optical and microwave sensors for yield forecasting, crop growth assessment and environmental monitoring. She is the leader of research projects carried out within 6th EU Framework Programme. **Dr. Zbigniew Bochenek** graduated in geodesy and cartography from Warsaw University of Technology. He received Ph. D. degree in remote sensing in 1980. He has been involved in numerous research projects focused on development of the remote sensing techniques applied to agriculture, forestry and land use mapping. His research interests include use of multi-sensor data for urban studies, development of image classification techniques and application of low-resolution satellite images to monitoring vegetation conditions. **M.Sc. Iwona Małek** graduated from the Faculty of Mathematics, Informatics and Mechanics, Warsaw University. She has been working at the Department of Remote Sensing since 1988. She has been involved in numerous research works related to application of different types of optical and microwave images to agriculture. Her main activities are concentrated on processing of data from meteorological and radar satellites, as well as preparation of thematic maps.

Partner No 9	*Balkan Foundation for Sustainable Development*	*9. FYR Macedonia*
www.balkanfoundation.org		*BFSD*

Role BFSD will contribute to the S&T objectives of the WP6 and WP7 It will: provide the experiences in biomass utilization and development in FYR Macedonia. BFSD will identify past and existing e-trainings related with biomass and establish contacts with them (i.e. UNESCO Desire-Net project). Identify participants of past biomass related e-trainings and study the effectiveness of those trainings in order to identify efficiency of future biomass related e-trainings. Dissemination and Stakeholder Involvement, stake-holder analysis, interactions among stakeholders in biomass energy development, awareness rising, communication and information, follow-up and evaluation at the country level. Provide input on the issues of understanding and classification of biomass potential for bioenergy. Provide experience in e-based consultations and trainings. Assist the development of the e-training curriculum on biomass together with the other partners. Set to availability its strong National and European network of contacts and members for better effectiveness of the project results; greater promotion and visibility of the project and its results. Ensure the connection of the development objectives of the project to those of the Initiative for a Framework Convention for Protection and Sustainable Development of the South East European (Balkan) Mountain Region.

Relevant Experience BFSD covers sustainable development issues in FYR Macedonia and the whole Balkan region. It has a wide experience in international cooperation and it is the tool for the implementation of the Initiative for the Framework Convention for Protection and Sustainable Development of the South East European (Balkan) Mountain Regions. Energy is one of the sectors of the future SEE Convention where protocol will be developed. BFSD did special assessment of the energy sectors of the countries of South East European region. Mountain areas are a key source of energy, providing biomass fuels, such as wood, agricultural residue and animal dung, as well as non-renewable fossil fuels (coal, gas, etc.). There is an increasing demand for more energy, in mountain communities itself but also in adjacent areas.

Key stuff

Dr. Vlatko Andonovski, is the President of BFSD. He is managing the overall coordination and administration of BFSD. His main field is forestry, environment issues and biodiversity. His expertise is proven trough the participation in the "Alpine Biodiversity in Europe"; expert to the project "Complementary Financing for Environment in the Context of Accession – Innovative Sources" a project done with WWF and IEEP; etc.

Dragi Pop-Stojanov, Forestry eng. is the Executive Director of BFSD. He coordinates the project activity of BFSD. His main field of work is sustainable tourism and rural development. Participated as consultant in the The Pilot Eco-Tourism Project - Beautiful Brajcino - Powerful Pelister; expert consultant to the Pelister mountain conservation project; expert to the project "Complementary Financing for Environment in the Context of Accession – Innovative Sources" a project done with WWF and IEEP.

Bojan Rantasa, Environmental eng. is the Assistant Project Director of BFSD. Expert in Geographic Technologies: Geographic Information Systems and Remote Sensing. He was the Secretary to the process of the development of the Strategy for Sustainable Development of Forestry in the Republic of Macedonia.

Partner No 11	*Cross Czech a.s.*	*10. Czech Republic*
	www.crossczech.cz	*XCZ*

Role CCZ will act as the Czech Republic national partner of CEUBIOM project bringing information about the system of biomass potential calculation used in the Czech Republic into the project (WP2 input). CCZ will also contribute in specification of EO input in the calculation methods and inclusion of end users requirements (WP3). CCZ will be involved in development of e-training course for biomass potential assessment using EO (WP6). Corresponding brokerage event will be organized at national level with participation of involved stakeholders and end users (WP7) in cooperation with Czech Association for Biomass (CZ BIOM).

Relevant Experience Cross Czech experts participated in the 5th FP project ENERGY FOREST NNE5-2002-00049 (Energy forest development on areas in Central-Eastern Europe, where the agricultural production is uneconomical - An assessment study). The role of the Cross Czech experts within the project was to develop a methodology for evaluation of biomass energy potential and to test it in the reference area of Chomutov district in the northern part of the Czech Republic. Cross Czech runs a managing centre of a network of research actors in area of biomass in the Czech Republic. The network includes representatives of SMEs, universities (e.g. Czech Agricultural University in Prague), research institutes (e.g. Research Institute for Crop Production, Research Institute of Agricultural Technology,...) and other parties (CZ BIOM, independent consultants). Cross Czech experts are leading Czech professionals in the area of biomass as a renewable energy source with rich experience and many scientific publications. The main lines of activities are regional studies of biomass utilization for energy purposes (including economical and technical assessment) and testing of new energy crops (agricultural techniques of cultivation, testing of various species, environmental impacts). The company disposes a GIS workstations operated by skilled personnel for visualization of energy potentials and for modelling purposes.

Key Staff

Dr. Petr Koran, PhD. Project manager, geotechnical engineer, Department of environment and sustainable development. Main researcher of ENERGY FOREST project – GIS assessment of biomass potentials in Chomutov district (Northern Bohemia). Main researcher of FP5 project IRON CURTAIN – impact of biomass production on regional competitiveness of rural area in Southern Bohemia, application of remote sensing (LANDSAT7) data and visualization in GIS.

Ing.Vlasta Petrikova, DrSc. Agricultural engineer, expert for energy crops and their plantation techniques. Former head of international department of CZ BIOM. Main researcher and co-researcher on numerous national and international projects dealing with biomass production, soil reclamation, agricultural techniques and promotion of renewable energy sources. Collaborator to Czech Ministries of Agriculture and Environment in preparation and management of national legislation and support programmes for production of energy biomass. Promotor of energy plants at national and European level.

Partner No 12	*Faculty for Agriculture and Food Science*	*11. Bosnia and Herzegovina*
www.fas-tempus-bih.org		*FASA*

Role Based on long-term experiences, FASA will be involved in the following activities according to the proposed Work Packages: Review of activities focused on east and South East Europe, Identifying Requirements for Harmonized Approach. Work on Technical Concept for a Harmonized Approach with Respect to User Requirements and Identifying Technological Gaps and Definition of Research Road Map, as well as Identifying and further refining biomass user requirements for EO Improving the EO sector's understanding of biomass and agricultural requirements and dissemination of all activities.

Relevant Experience FP6, "Agro-economic policy analysis of the accession and candidate states and countries of Western Balkan - **CEEC Agri Policy**". www.europartnersearch.net The project aims at creating a network of experts involved in agricultural policy analysis in the New member States, in the Candidate Countries and in the countries from the Western Balkan. The overall objective is to support the formulation of community agricultural policies with a main focus on market policy and on rural development policy. It will create a database proposed for those who have an interest in agricultural policy in the New Member States, in the Candidate Countries and in the Western Balkan. It is designed to help experts & organisations to initiate cooperation with others and to identify experts or organisations with specific competencies. A mapping report, identifying the research potential in the field of agricultural policy analysis, will be delivered in 2006.
FP6, Researcher – Project "Reintegration of Coal Ashe Disposal Sites and Mitigation of Pollution in West Balkan Areas (**RECOL**)". www.rhizo.at. The RECOL project develops cost-effective and innovative methods for reintegration of coal ash disposal sites into sustainable and multifunctional land use. The aim of this project is to develop and test innovative and cost-effective plant-based technologies for remediation of coal ash deposits and affected water resources. Immobilisation of heavy metals using various site adapted amendments in line with soil covering technologies and re-vegetation will be applied to reduce the transfer of toxic metals to ground water, open water bodies and air.

Key Staff
Mr. Hamid Custovic, Head of the Institute of the Soil Science since 2001, Faculty for Agriculture and Food Science He is PhD in Soil Science, currently university lecturer.
Mr. Mirsad Kurtovic is currently is Dean of the Faculty for Agriculture and Food Science, He is unioversity lecturer of PhD of Plant Breeding and Fruit Production.

Partner No 13	*Advanced Computer Systems A.C.S. S.p.A.*	*12. Italy*
	www.acsys.it	*ACS*

Role ACS has been involved both as prime contractor and as partner, in many EU 5th and 6th FP projects, ESA Data User Programme projects and national application initiatives based on the exploitation of the EO data for the provision of user oriented services. This provides ACS with a strong capacity to coordinate project activities in WP5 and to deliver results with high quality standards. In addition to leading WP5 Platform activities the role of ACS will mainly be in defining the standardised methodologies for EO-based biomass estimation and providing support for e-training capacity.

Relevant Experience

ACS has participated to the **EOBEM** (Earth Observation for grassland, shrubland and woodland biomass estimate and management) project, which has developed methods for estimating grassland, shrubland and woodland biomass in three different European test areas, using EO techniques. The goal was to support different activities concerning customers' duties in terms of land management by means of Earth Observation data processing, instead of using laborious and costly field collection methodology. The biomass assessment methods use empirical indexes based on optical multispectral bands linear combination in conjunction with SAR backscattering data. The ESA DUE DesertWatch project, currently under finalisation, is based on the assessment and monitoring of desertification through the estimation of a series of vegetation related indicators, including vegetation abundance and rina use efficiency.

Key Staff Mr. Gaetano Pace is a geologist and Executive Manager in ACS since 2006. He graduated in University of Naples with highest degree. Since then he has been researching in the areas of Remote Sensing applications, GIS and IT. In the 1995-1996 he worked as scholarship researcher at the Macaulay Land Use Research Institute, Aberdeen Scotland, for soil erosion modelling. Since 1997, he has been working with Advanced Computer Systems ACS S.p.A, as Project Manager and Technical Leader for many remote sensing and environmental application projects, including early warning systems for seismic and volcanic risk, ecological and pollution risk, land degradation assessment and desertification monitoring. Most projects have been financed by the ESA, EUMETSAT, the Italian Space Agency, the EU 4th, 5th and 6th FP.

Ms. Gaia V. Laurin is a naturalist with strong experience in ecological disciplines. She graduated in 1995 in Biological Sciences with highest degree, and participated to several master courses, including Post-graduate course in Communication and Marketing for the Environment, Ateneo Impresa, Rome, Italy, Master's Degree in Biodiversity Conservation, Imperial College at Wye, UK and Professional Master Course in Remote Sensing/GIS and Natural Resources Evaluation held by the Italian Ministry of Foreign Affairs. She has participated in numerous international projects based on remote sensing data exploitation for vegetation mapping.

Partner No 14	*Slovak Innovation and Energy Agency*	*13. Slovakia*
www.sea.gov.sk		**SIEA**

Role : SIEA is taking advantage of its experience in the promotion and use of biomass resources in Slovakia. SIEA among other activities will develop materials based on expert opinions and materials for decision making in order to verify and review CEUBIOM concepts in rural areas. It will also identify and review restrictions of the development biomass for energy sources and a combined electricity and heat production and proposes solution on how to overcome them. SIEA will also participate in the organisation of training and educational programmes as well as conferences, seminars and workshops dedicated to workshops, seminars, aimed to increase knowledge awareness for biomass/EO in professional and general public. SIEA is in a good position regarding regional problems such as utilisation renewable energies in the regions thanks to its regional branches and consequently deeper knowledge of renewable energy potential in relevant regions.

Relevant Experience Since 1993 SIEA (SEA before) has been engaged in over 20 international projects, some of them dedicated fully or partially to renewable energy resources and their exploitation. One should mention here EPA project covering policy and tools for improved energy efficiency and wider use of renewables, CEEC's and EEE-NMC evaluating and monitoring energy efficiency and renewable energies, Interreg III and ENEFMUN with the same goals aimed at regions and municipalities and INNER covering energy research in general and the one targeted at RES in particular. Close co-operation with the Energy Division of the Ministry of Economy and with other governmental bodies and agencies provides SIEA with relevant information needed for its work for the Administration, for SIEA projects and for general public.

Key Staff Mr. Pavel Starinsky, MSc(Eng) is a Director of the Section of International Activities of SIEA since 2005, befor Head of the Structural Funds Dpt. of SEA. Before entering SEA he had several leading post in energy, industry and foreign trade sectors (2 years as chief representative in China). Aside heading the International Activities Section he cares for projects INNER and Interreg III – RUSE as country project manager.

Mr. Jan Rousek, PhD is a senior consultant in the Section of International Activities of SIEA since 2003, before since 1993 as Vice-Director of the Energy Institute of SEA cared for the energy education programmes. He has wide experience in power engineering (Steam Turbine Division of Skoda Works Pilsen, senior lecturer at Pilsen Technical University). He lead PHARE Project "Regional Energy Concept of the Ziar Region" and the EPA and CEEC's projects in Slovakia, now is involved in EEE-NMC project.

Mr. Dusan Volentic MSc(Eng) is an Electrical Engineer and acts as a senior expert in the Section of International Activities of SIEA since 2006, before held the occupations of project manager in the Slovak Gas Industry and 2 years was involved as sales manager for electronic devices for the British firm, part of this time active in the UK. He is involved in projects EAST-GSR and ODYSSEE-MURE.

Partner No 15	*National Biomass Association*	*14. Bulgaria*
http://www.bgbiom.org/index.html		*BGBIOM*

Role The role of NBA in CEUBIOM is to propagate the growth of different plants for non-food use in South-Eastern Europe using harmoinsed EO for monitoring. Activities will include:

- Propaganda and information for approval of science activities, connected with production and application of the biomass in the Industry and Energetic (publishing of a news bulletin; circulation of documents).
- Organizing the publishing of materials and education (courses, seminars, conferences, symposia, exhibitions).
- Publishing (connected with collaboration with schools at all levels).
- Co-operating with organizations in this field including foreign and international organizations. Consultative and expert activity.
- Creating and maintenance of the card-index of specialists in this sphere.

NBA aims also to co-ordinate and facilitate the research and development works in the fields of biomass resources, biofuel production technologies, biofuel market in the transport, heat and energy sector, as well as in the field of biomass non-energy products. NBA plans to realise these aims by taking part in different EU programs.

Relevant Experience BGBIOM plans to realise these aims by taking part in different EU programs. “Lessons from Denmark and Austria on the energy valorization of biomass. Contract No. ERBCIPDCT930332. PECO 1993, Final Report, Athens, 1995.
“Promotion and Dissemination of Successful Geothermal Technologies in the Bulgarian and Northern Greece Markets”. Contract Thermie No: DIS/1368/97-GR. Final Report , Athens, 1999.
“ Let’s give the floor to farmers” . Contract Altener No.XVII/4.1030/Z/99-092. Final Report, Brussels, 2001.
BIGPOWER - -“Improvement of the S&T research capacity of TUBITAK-MRC IE in the fields of Integrated Biomass Gasification with Power Technologies” - FP6 SSA project – 2006.

Key Staff
Anna Aladjadjiyan – PhD, DSc, Professor in Physics, Physical Methods in Agriculture, Renewable Energy Sources; President of the Bulgarian Biomass Association since its establishment; Vice-Rector of the Agricultural University – Plovdiv, responsible for European Integration and International Relations, University Erasmus Coordinator, coordinator and partner in international projects.

Partner No 16	*Ukrainian Land and Resource Management Center*	*15. Ukraine*
	www.ulrmc.org.ua	*ULRMC*

Role In CEUBIOM ULRMC will help formulating a basis for applying remote sensing (RS), digital mapping, geographic information systems (GIS), and other information technologies data to support rendering public and private sector decisions, both in Ukraine and the region. For the time its operation, ULRMC implemented more than 50 projects in areas of environmental management, nature resources preservation, disaster mitigation and response, agricultural business, land use, forestry etc. Activities performing process included such customers and partners as NSDCU, Ministry for Environmental Protection, Ministry of Emergencies, State Water Management Committee, State Committee for Forestry, Ukrainian Agency for Geodesy, Cartography and Cadaster, USAID, GEF, UNDP, USGS, UNEP-WCMC, TACIS, World Bank, NASA, U.S. Geological Survey, etc.

Relevant Experience The main objectives of the Tacis transboundary "Flood Risk Assessment and Management in Zakarpatska Oblast" project were to promote flood management via the improvement of emergency flood forecasting system, as well as increasing public awareness with respect to flooding problems. ULRMC has updated GIS data for Zakarpatia oblast region using RS data and historical cartographic data. ULRMC has provided activities for implementing modern GIS software (ESRI, SKE) and building special tools for water management information processing. The State of Forestry project addresses landslides and flooding issues by providing of the assessment of the state of forestry and the influence of its changes on dangerous natural events in the Carpathian region of Ukraine. In the project were used RS and GIS applications for the registered incidences of clear cutting and landslides. GIS information layers of forest cover for different dates and GIS information layers containing information on landslides were created on the basis of RS data processing. "Water Quality Program Assessment and Abatement Dnipro Estuary" Project. ULRMC utilized its in-house water resources expertise and modern information technologies, as well as traditional *in situ* procedures, to enhance the management, modelling and monitoring of water quality in the Dnipro River estuary. ULRMC uses GIS to integrate input data with the output of the water quality models, and uses the acquired data to address the challenges of water resource management at the corresponding in-country institutions.

Key Staff

Mr. Oleksandr Petrochenko (M.Sc.) is a an GIS specialist with more than 7 years experience in Ukrainian and international projects related to complex GIS development, RS data processing and environment. He is a Head of the ULRMC's Information Technologies Department for the last two years.

Dr. Valeriy Serenko currently serves as ULRMC's Head of Projects Department. He has immediate oversight responsibility for several ULRMC project managers exploring, developing and implementing environment, natural resources, biodiversity and hazardous situations, agribusiness and other projects in accordance with ULRMC's mission.

Mr. Yuriy Shtepa is a RS data processing specialist with 10 years experience in international and Ukrainian RS, environment and resources management projects. Area of his researches includes Ukraine, Canada, Georgia, Belorussia. He was a member of the team in creation of Dnipro Environmental Management Information System.