ANNUAL REPORT 2015

eseia 🕜

european sustainable energy innovation alliance



Brigitte Hasewend Director of eseia

"In 2015 eseia was involved in more than 10 Horizon 2020 project proposals with a total volume of € 30 Mio. 70 experts from 17 countries were engaged in this undertaking which brought in € 8 Mio. EC funding. Two thirds of this project income will directly benefit eseia member organisations. "

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Message from the President of eseia

As President of eseia I am very pleased to present to you the eseia Annual Report 2015. This report is a good representation of how eseia has developed itself into an important player in the field of sustainable energy systems.

2015 was a very good year for eseia. eseia has put her mark on a global scale by providing training to professionals from Eastern Partnership countries under EC Ener2i. eseia has also been successful in setting the scene for new energy innovation in Europe in the field of bioresources. With the help of her partners, eseia will be creating two new European Master's degree programmes, the EC BioRefinery Engineer and the EC Bioresource Value Chain Manager.

Our intensified efforts in project acquisition have paid off. eseia acquired four new projects in the fields of bioresources, smart cities and education and training, harvesting additional funds of $\notin 8$ Mio. This huge success was achieved thanks to the hard work of the eseia Team and experts from our members and partners.

By working together we can continue to increase the impact of eseia and support the transformation towards sustainable energy systems in Europe and world-wide.

I wish to thank all of you for your valuable and indispensable contributions.

Graz, December 2015



Harald Kainz President of eseia



About eseia: Vision & Strategy

eseia is a European non-profit association of leading research and innovation organisations in sustainable energy. The eseia umbrella covers the full value chain of energy including members from research, academia, industry and government.

Vision

eseia is striving to become the **first European address for renewable energy systems innovation** by 2020. eseia wishes to support Europe to take the leading role as the most innovative energy region in the world. Supporting the creation of smart energy systems and their market uptake is eseia's continuous value creation for a smarter Europe.

eseia fosters international cooperation, manages sustainable energy innovation projects, organises expert panels, designs entrepreneurial education programmes, and promotes dialogue with European citizens.

Strategic Challenges

In order to fulfill her mission, eseia wishes to address three mayor challenges, namely to act

- 1 as a **forerunner** in agenda setting for RES with a focus on bioresources, smart cities and regions;
- 2 as a **provider** in capacity building by providing tailor-made training; and
- **3** as a **broker** for European products on a global market.

Global Position

To follow up on the eseia Strategic Challenges, eseia concentrated in 2014 and 2015 on **capacity building activities in Eastern Partnership countries and China**. The following key achievements strengthened the position of eseia on the global market.

Eastern Partnership countries

- In the framework of EU FP7 Ener2i project eseia led 4 Innovation Training Workshops in 4 EaP countries, 7 study visits, 6 staff exchanges and 3 EU International Brokerage Events.
- eseia hosted more than 200 participants in her training courses over the past 2 years.
- 10 eseia experts from 7 members organisations were involved.

China

In the framework of the EU - China Memorandum of Understanding for Sustainable Smart Cities, established in October 2014, a series of Strategy Meetings with Chinese partners took place in Brussels and Shanghai.



Minks, BELARUS



October 2014 Topic: Smart Cities Hosts: The Belarusian Institute of System Analysis and Information Support for Scientific and Technical Sphere, Belarusian Innovation Fund.

Tbilisi, GEORGIA



June 2015 Topic: Energy Integration Hosts: Energy Efficiency Centre Georgia: Georgian Technical University. October 2015 Topic: Smart Energy Systems Host: National Acadamy of Sciences of Armenia.

Yerevan, ARMENIA

Chişinău, MOLDOVA



December 2014 Topic: Energy Transition Hosts: Agency for Innovation and Technology Transfer, Organisation for Small and Medium Enterprises Sector Development.



Shanghai, CHINA



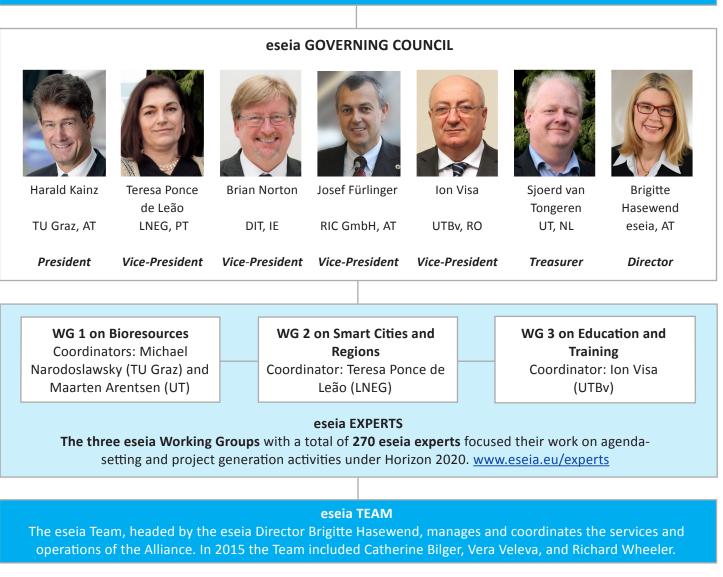
May 2015

Topic: Sustainable Cities **Hosts**: Tongji University, Jiangsu Academy of Agricultural Sciences, China Electronics Technology Group Corporation

Organisation

eseia GENERAL ASSEMBLY

The GA is eseia's highest decision making body consisting of eseia members. The GA votes on decisions, proposed by the GC twice a year.



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Finances

eseia was successful in attracting EC funding for **four additional projects worth € 8 Mio.** in 2015. The eseia membership fee income was stable in 2015, though six new members were admitted for membership starting in 2016.

The eseia income from projects benefits her members to a large extent, a quarter of the funds have been granted to external partners and 17% of the funds are held at eseia as an organisation.

As eseia is in good financial shape, eseia will be able to increase the effort towards acquisition of new projects for its members.





2020 Products and Services "As that to that

Members Project Income

eseia Project Income

"As the Treasurer of eseia, I wish to thank all the members for their valuable contributions. I am very pleased to see our work has been rewarded."

Sjoerd van Tongeren *Treasurer of eseia*



2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020



1,600,000

1,400,000

1,200,000

1,000,000

800,000

600,000 400,000

200,000

Membership Fee

Education and Training Programme (ETP)

In 2015 over **140 students and young professionals** received training under the eseia Education and Training Programme. The ETP activities included Innovation Training Workshops, study visits, the eseia International Summer School and staff exchanges in and outside Europe.

Participants have gained essential knowledge and entrepreneurial skills from the rich and comprehensive expertise of eseia.

Best Lecture Library

The Best Lecture Library is an online collection of top lectures on sustainable energy systems available on <u>www.etp.eseia.eu.</u> The Library combines five areas of crucial relevance to the challenge of ensuring sustainable energy in the European countries and regions: **Sustainable Smart Cities, Regional Integrated Energy Development, Societal Energy, Energy Storage** and Smart Grids, and EU Project Management.

eseia International Summer School on Integrating Bioresources and Waste in Urban and Rural Energy Systems, 13-24 July 2015

The eseia ISS 2015, hosted by eseia Vice-President **Teresa Ponce de Leão** and her Team from LNEG and the New University of Lisbon, was a well-balanced mixture of different educational formats. Students and young professionals from in and outside Europe took part in workshops, lectures, study visits and a garden talk to gain a systems perspective on smart solutions and innovations to the bioenergy challenge for cities and communities.



eseia ISS 2015, hosted by LNEG and UNL in Lisbon, Portugal, 13-24 July 2015

eseia international experts who taught in the Summer School were **Hedda Weber** from Wood K Plus, **Michael Narodoslawsky** and **Lothar Fickert** from TU Graz, **Yoram Krozer** from UT and **Lucia Dumitrescu** from UTBv. Together with local experts from LNEG and UNL, they approached the system integration from four angles of integration: policy, socioeconomic, design and technology.



Projects

EC FP7 INCO ENEr2i Oct. 2013 – Sept. 2016 Volume: € 1 Mio.



www.ener2i.eu

ENEr2i reinforces cooperation with Eastern Partnership countries on bridging the gap between research and energy in renewable and sustainable energy. eseia organised 5 **twinning activities**, **2 Innovation Training Workshops and one EU Brokerage Event**, which gathered more than **130 participants** from in- and outside Europe. Around **90 students and young professionals** received training from **7 eseia experts** and other partners.

Partners: Centre for Social Innovation (ZSI), RCISD, eseia, BelISA, NAS RA, AITT, TTA, BIF, EEC, ee, ODIMM.

Coordinators: Manfred Spiesberger & Gorazd Weiss **(**ZSI).

Study Visits and Innovation Training Workshops

In 2015 eseia organised two Innovation Training Workshops and three study visits with more than 100 participants. The study visits included ECO World Styria for green-tech showcases, Austrian Energy Agency for policy and regional outreach for energy efficiency, TUHH and BAV for topics related to waste management.



Innovation Training Workshop in Tbilisi, Georgia, 1 June 2015

Team Leaders: Mikael Abovyan (TTA), George Abulashvili (EEC), Tigran Arzumanyan (NAS RA), Kardon Béla (RCISD), Roman Chirca (AITT), Brigitte Hasewend (eseia), Anatoli Hryshanovich (BIF), Olga Meerovskaya (BeIISA), Olga Popa (ODIMM), Andreas Ziolek (ee).

eseia experts focused on the following subjects:

- Andreas Cronrath, BAV: 'From a Landfill to a Competence Centre for Sustainable Resources Management'.
- Anca Duta, UTBv: 'Sustainable Materials a Complementary Concept in the Transition towards Nearly Zero Energy Buildings'.
- Ina Körner, TUHH: 'The Civilisation Biorefinery a Networking approach for efficient utilisation of residual bioresources'.
- **Yoram Krozer,** UT: 'Policies, drivers and barriers for innovation in renewable energies'.
- Gintaras Stauskis, VGTU: 'Green Buildings and Sustainable Urban Design'.
- **Kęstutis Valančius**, VGTU: 'Energy efficient building pre-design aspects'.

The lectures are available online: <u>www.ener2i.eu.</u>





H2020 BioEnergyTrain Linking Business and HEI on Bioenergy Education May 2015 - April 2019 Volume: € 3,7 Mio.

The BET project involves **15 partners from six EU countries** to address directly the lack of qualified personnel, lack of cohesion and integration among stakeholders, and the poor linkage between vocational training and industry needs to enable efficient European development in the low-carbon bio economy. **Objective:** Set and scale up two new European Masters Programmes integrating professional education formats in cooperation with industrial and regional players.

Partners:

BAV, BIO-C, BRP-Powertrain, EAS, ECO, ELES, KIC InnoEnergy, LNEG, TU Graz, TUHH, UT, UTBv, UL, Wood K Plus. **Coordinator:** Brigitte Hasewend (eseia) **Work Package Leaders:** Maarten Arentsen (UT), Wolfgang Bauer (TU Graz), Catherine Bilger (eseia), Joan-Marc Joval (KIC IE), Sybille Kuske (EAS), Vera Veleva (eseia).

www.bioenergytrain.eu

In the framework of BET in 2015 eseia and its project partners have already achieved the following results:

- Updated Management Plan and Communication & Dissemination Strategy;
- Online platform for exchange of experiences and best practices;
- Curriculum Development Framework including an operational format for a MOOC platform for Biorefinery Engineering and Bioresources Value Chain Management;
- Standards for Quality Assurance and Practice relevance of the programmes.



BET Kick-off Meeting 15 June 2015, Brussels, BE



H2020 Phoenix - People for tHe eurOpean bio-ENergy mIX Dec. 2015 - Nov. 2019 Volume: € 1,3 Mio.

This project will bring together many of Europe's key players from academia, business and the public sector through **secondments** of their research experts to develop and improve innovative solutions for a European bio-economy based on non-conventional bio-resources using targeted staff exchanges and joint innovation activities. Secondments from **11 countries for a total of 306 PM** would be realised.

Partners:

Armenian National Academy of Sciences, BAV, Belarusian National Technical University, BIO-C, EAS, INP – Pagora, Lapeenranta University of Technology, LNEG, RIC-BRP Powertrain, TORBEL, TU Graz, University of Liège, UT, UNIZAG. Coordinator: Brigitte Hasewend (eseia)

Work Package Leaders: Maarten Arentsen (UT), Catherine Bilger (eseia), Luis Duarte (LNEG), Josef Fürlinger (RIC BRP), Goran Kajacic and Božidar Šantek (UNIZAG), Dominique Lachenal (INP Pagora), Michael Narodoslawsky (TU Graz).

The project started on the 4th of December with a Kick-off Meeting in Brussels, which was joined by the Phoenix Project Officer Oscar Perez Punzano from the Research Executive Agency, EC.

H2020 SuPREME Twinning for a Sustainable, Proactive Research partnership in distributed Energy systems planning, Modelling and managEment Nov. 2015 - Oct. 2018 Volume: € 1 Mio.

h2020-supreme.eu

The SuPREME project twins one of Poland's most promising energy research centres, the Institute of Fluid-Flow Machinery of the Polish Academy of Sciences (IMP-PAN) with needed expertise from Aalborg University (DK), the University Twente (NL) and eseia (AT) to reach research and innovation excellence in modelling, planning, integrating, and managing large-scale RES systems.

Coordinator: Ewa Domke (IMP PAN)

Work Package Leaders: Sjoerd van Tongeren (UT), Poul Alberg Østergaard (AAU), Catherine Bilger (eseia).







Brussels Links

In 2015 eseia organised over 20 events in 6 capital cities of which 3 outside Europe gathered more than 300 participants: Training events and project meetings in Brussels, Graz, Lisbon, Shanghai, Tbilisi and Yerevan.

The eseia Alliance maintained international partnerships with major European networks, such as EUA-EPUE, EUREC, KIC InnoEnergy. As a service to her members eseia held her business meetings back to back with H2020 Updates on recent policy and programme trends. eseia thanks the following speakers and guests for their contributions:

- Henriette van Eijl, Policy Coordinator, DG MOVE, EC
- Przemyslaw Jankowski, Policy Officer, DG Education and Culture, EC
- Anette Jahn, Head of Sector Energy Unit, EASME, EC
- Thierry Devars, Project Officer, DG Research and Innovation, EC
- Emilio Font de Mora, Project Manager, INEA, EC
- Colombe Warin, Policy Officer, Research Executive Agency, EC
- Deniz Karaca, Science Officer, COST Association
- Fredrik Olsson, Head of Unit, Research Executive Agency, EC
- Oscar Perez Punzano, Project Manager, Research Executive Agency, EC



Przemyslaw Jankowski Policy Officer



Fredrik Olsson Head of Unit at REA



Anette Jahn Head of Sector at EASME



Henriette van Eijl EC Policy Coordinator



Emilio Font de Mora Project Officer at INEA





eseia in Europe

In 2015 the eseia Alliance consisted of 27 full members from 14 EU countries.

Over the last year eseia closely collaborated in projects with 22 external partners from **4 Eastern Partnership countries** and 6 EU countries including **Belgium, Denmark and France**. eseia therefore collaborated closely with **17 EU countries**.



List of Members



Bergischer Abfallwirtschaftsverband is a public corporation within the North Rhine-Westphalian region of Germany and operator of the landfill Leppe. In the framework of the Metabolon project BAV and the University of Applied Sciences Cologne developed the landfill site into a waste to energy centre of competence.

Bioenergy 2020+ GmbH is a research organisation based in Austria. It provides research,

bioenergy2020+ develo

development and demonstration services for the entire value chain of biomass for energy use. Its remit is to enhance R&D on the utilisation of new biomass fuels to improve existing and new technologies.



Dublin Institute of Technology has been recognised as a pioneer in technological higher education. In addition to various study programmes, DIT delivers Ireland's main Masters Programme in Sustainable Development with related programmes in Energy, Spatial Development, and Environmental Health.



ECO WORLD STYRIA is the globally leading innovation cluster in energy and environmental engineering in Styria, Austria. ECO supports 200 companies in this Green Tech Valley with services and projects focusing on innovation, know-how, and new markets to further extend technology leadership. To date, ECO leads all rankings of cleantech clusters as worldwide No. 1 and was awarded the EU Regiostars for Innovative Growth.



Elektro-Slovenija d.o.o. is a public company which has the exclusive right to perform the public service of the electricity transmission network system operator in Slovenia. Its experts deal with issues relating to power-lines including design and construction of transmission lines, substations and transformer facilities, as well as control centres.



Energy Agency Styria GmbH was created with the objective to increase efficiency of energy use in Styria, Austria. The agency is the interface between administration, policy, research and the consumers of energy.



The **Energy Institute at the Johannes Kepler University Linz** focuses on economic considerations of energy policy issues, current issues of the Austrian energy law, the promotion of energy efficiency and the optimised use of biogenic residues. The Energy Institute also looks at the conceptual design of smart energy systems.



Fachhochschule JOANNEUM is one of Austria's leading universities of applied sciences with currently nearly 50 degree programmes in the areas of applied informatics, engineering and energy, design, International business, and health sciences, as well as Postgraduate programmes in management.

Fondazione Bruno Kessler is a foundation with more than 350 researchers in information technology, materials, and microsystems. FKB research obtains recognition at an international level and is of strategic importance to the Province of Trentino.

Graz University of Technology, the Austrian Innovation University, is known for its close business ties and a considerable number of successful spin-offs. Excellence has been achieved in the areas of the built environment and energy infrastructure, sustainable mobility as well as ecological and societal research linked to innovative energy systems.

Hamburg University of Technology is Germany's youngest university of technology. TUHH offers first-class teaching and excellent research at a high international level, and provides intensive science and technology transfer in the field of engineering sciences.

Karl-Franzens-Universität Graz has many excellent scientists, amongst them six Nobel laureates have taught and researched here. Its location in Central Europe encourages a lively scientific, economic and cultural exchange with South-East Europe, from which not only the city benefits but also its educational institutions.

Kompetenzzentrum Holz GmbH is a partnership of different companies and researchers in the areas of wood composites and chemistry. Wood K plus develops and optimises engineering processes that provide the basis for a new generation of innovative products, based on wood and related natural substances.

Kymenlaakso University of Applied Sciences is a Finnish multidisciplinary institute of higher education that produces high-quality professional expertise in close cooperation with working life, as well as other organisations. Research and innovation activities at the University specialise in sustainable energy solutions among others.



















The **National Laboratory of Energy and Geology** is a Portuguese State laboratory that provides R&D oriented to the needs of society and enterprises. Investing in sustainable research ensures an adequate response to the needs of the business sector.



Parthenope University of Naples is organized in five faculties: Economy, Science and Technology, Law, Engineering, and Material Sciences, with some 18 000 students. An international PhD Programme in 'Resources, Environment and Sustainable Development' is offered in English.



The **Regional Innovation Center** of **BRP Powertrain**, an affiliate of Bombardier Recreational Products Inc, is a leader in the development and production of innovative 4- and 2- stroke high performance Rotax engines for BRP products, motorcycles, ultralight and light aircraft.



Slovak University of Technology in Bratislava is the largest university of technology in Slovakia. It focuses on classical technical fields, economic and natural sciences, agriculture and forestry, as well as creative arts.



The **Szewalski Institute of Fluid Flow Machinery** within the **Polish Academy of Sciences** was established as a European Centre of Excellence in clean and safe technologies in power engineering and as a leader of the largest projects in Poland in the field of renewable energy sources.



Transilvania University of Braşov is one of the largest universities in Romania. The focus and development strategy lies on teaching, research, training, inter-university cooperation, university deontology and social protection of the university members.



University College Dublin is Ireland's premier university and the largest university in research programmes in the country. The UCD School of Bio systems engineering has a highly active research programme in bioenergy and its environmental impacts, and also addresses sustainability within the agri-food and bioresources sectors.



The **University of Hamburg Centre for Wood Sciences** is closely linked to the Thünen Institut (TI) regarding research, tuition, and premises. The university seriously takes into account sustainability and places great emphasis on innovation.



University of Pannonia is a significant Hungarian institution of higher education in the Transdanubian region. It performs R&D activities and offers programmes in the areas of engineering, economics, information technology, humanities and agricultural sciences.

University of Twente is an entrepreneurial research university which offers education and research in areas ranging from public policy studies and applied physics to biomedical UNIVERSITY OF TWENTE. technology. The University is committed to making an economic and social contribution to the region of the Netherlands where it is based.

University of Zagreb is the biggest university in South-Eastern Europe. The University excels not only in teaching but also in research, contributing with over 50 percent to the annual research output in Croatia and 80 percent of scientific productivity of all Croatian Universities.

Vienna University of Technology is Austria's largest scientific technical research and educational institution developing scientific excellence and wide-ranging competence. Its research focus point 'Energy and Environment' comprises more than 80 research groups from all eight faculties.

Vilnius Gediminas Technical University includes eight faculties and is a member of the Lithuanian Green Building Council, which regroups industrial partners on the topic of smart sustainable buildings.

> "ELES has found exceptional project partners among eseia members and in eseia itself. We especially value the knowledge and expertise eseia has in the area of EU financial programs and the extended network." Maša Repež, Investment Planning and Analysis Specialist, ELES











My Year at eseia



Vera Veleva joined eseia at the end of 2014 and had the chance to take part in the positive development of the alliance last year. On this page, Vera Veleva shares her personal experience in working for eseia.

I am grateful to the Director Brigitte Hasewend and my colleague Catherine Bilger for choosing me among all the other applicants, making my experience at the alliance full with challenges and worth while. After all it is by constantly challenging ourselves that we learn and grow.

My year at eseia broadened my horizons and met me with amazing people at great places, all joined in a cause to make Europe more educated, energy independent and sustainable.

The "polyvalence" of the position gave me the opportunity to be involved in every aspect of the functioning of the alliance, from project generation activities together with the extremely knowledge-able Richard Wheeler, through the actual management and work contribution in H2020 projects, the various aspects of setting up meetings and training events, to the marketing and media of the alliance.

eseia gave me the floor to continue developing my potential, to test my strong and weak sides, to see where my limits were and where my efforts for improvement should focus. I received a lot of valuable lessons during my time at eseia. One is that you should never place items you will need for work in your checked-in luggage when you fly with connecting flights. But this is not all. I've learned that before taking any decisions or give suggestions you should always know why, be convinced in them and be ready to bear their consequences. I also learned that you should not take the previous accomplishments as status quo but try to constantly reevaluate and improve them. I came to understand that it is better to overdo sometimes things than not do enough. This also one of the reasons that eseia has grown in scope and in reputation in such a short time.

I've learned how to take direction and criticism, and no matter how difficult or overwhelming work was at the end with the effort from the whole team and with one small step at a time it turned out all good. Being a part of a team is a lot more than just sharing work and credit. A team effort takes compromise. When you are on a team you have to at times lead, follow, and very often meet in the middle.

Thank you once again for making me part of your team. I wish you great success. I know that with all your hard work and dedication eseia will become essential to its members.

I look forward to continuing working together on future opportunities such as H2O2O Teaming from my position as Project Manager in Bulgaria and eventually strengthening our link with a new EU member.

eseia Project Assistant



Looking to 2016

Focus	No	Call	Торіс	Lead	Funding
Smart Cities and Regions	1	MG-4.5-2016 (RIA)	New ways of supporting development and implementation of neighbourhood-level and urban-district level transport innovations.	eseia	€ 3 Mio
	2	CIRC-03-2016 (CSA)	Smart Specialisation for systemic eco-innovation/circular economy.	UT	€ 1,5 Mio
	3	SCC-03-2016 (RIA)	New governance, business, financing models and economic impact assessment tools for sustainable cities with nature-based solutions, urban renaturing.	UT	€ 7,5 Mio
	4	INFRAIA- 02-2016 (RIA)	Integrating Activities for Starting Research Infrastructure Communities in sustainable energy solutions.	eseia	€5 Mio
	5	ENG-GLOB- 08-2016 (CSA)	EU-China large scale science-industry cooperation on sustainable urbanisation.	eseia	€ 1,5 Mio
Smart Energy Materials	6	COST Action	Constituting a bridge towards the scientific communities of EC Third and Associated Countries in smart energy materials.	TU Graz	€1 Mio
	7	NMBP-19- 2017 (RIA)	Development of cost-effective materials for "power-to- chemical" technologies.	eseia	€4 Mio
	8	NMBP-20- 2017 (IA)	Promising high-performance materials for optimizing next generation CO2 capture technologies.	eseia	€7 Mio
SET-Plan	9	H2020- LCE-2017 (RIA)	European Common Research and Innovation Agendas (ECRIAs) in support of the implementation of the SET Action Plan.	eseia	€ 2,5 Mio
	10	Research Tender	A Europe-wide study on the energy efficiency-related competences available and the opportunities to develop them to a new context.	eseia	€ 0,5 Mio
	11	WIDEPREAD- 04-2016 (CSA)	Teaming Phase 1: Supporting the creation or upgrading the existing centres of excellence in low R&I performing countries.	UTBv/ IMP PAN	€ 0,4 Mio
				Total	€ 34 Mio



eseia Services

- Close contact to the EC facilitated by our desk in Brussels, contacts to funding agencies and know-how of funding programmes.
- Knowledge building and dissemination through eseia projects, the eseia journal (<u>energsustainsoc.com</u>) and the eseia EC-SET Plan Education and Training Programme.
- Long term cooperation with international and cross-sector organisations working in the area of renewable energies.
- Support for consortium building and the coordination and management of large scale proposals and projects.
- Information sharing through interactive workshops, business meetings and quarterly newsletters including news from the grapevine of EU policy regarding renewable energies.



eseia Headquarter

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