

# Annual Report 2014





Brigitte Hasewend  
Director of eseia

“In the past five years eseia has grown into a truly European organisation. From this strong European base it is natural for eseia to expand its activity to new horizons in the EaP countries, China and India.”

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## Message from the President of eseia

*As President of eseia I am proud to report on the continuous growth and improvement of our organisation. In the past five years eseia has evolved from an initiative to a self-sustaining organism, functioning beyond borders and disciplines. We owe this capacity to the hard work of all former and present experts and members.*

*The past year was productive in terms of fostering and connecting knowledge and experience in renewable energy systems across countries and disciplines. Our Alliance continued to serve its main purpose, bringing professionals together and functioning as incubator for research, exchange of good practices and development of innovative approaches among members, at regional and national levels in Europe and beyond. eseia has not only strengthened its European membership but has also acquired new partners in the Eastern Partnership countries and in China.*

*I wish to thank all my colleagues in eseia GC and GA who engaged in eseia activities by bringing in expertise and taking over different responsibilities as chairpersons of working groups, contributing to writing project proposals or representing eseia in EC think tanks or at different events. I also thank the eseia staff for their professionalism and cooperative approach.*

*By working together we have successfully addressed the challenges of the future and set the bar for the credibility of eseia in providing sustainable energy solutions on a global scale.*

**Graz, December 2014**



Harald Kainz  
President of eseia

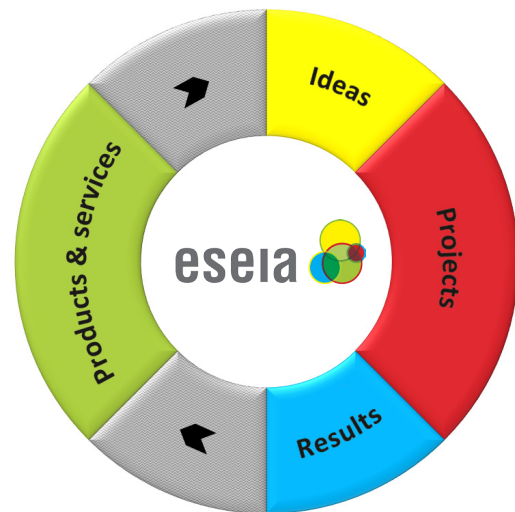
## About eseia: Vision

eseia is a European non-profit association of leading research and innovation organisations in sustainable energy including 30 members from 15 different European countries. The eseia umbrella covers all relevant fields in sustainable energy from energy provision to new technologies across research, academia, industry, and government. eseia is fostering international cooperation, managing sustainable energy innovation projects, organising expert panels, designing entrepreneurial education programmes, promoting dialogue with the public and lobbying for sustainable energy solutions on various levels.

eseia **envisions** strong innovation regions which lead by example through building on the rich diversity of Europe and utilise international leadership to contribute to sustainable global change. For regional success eseia believes that it is vital to improve the cooperation between science, industry and politics as research and innovation are key drivers of competitiveness, employment, sustainable growth and social progress.

### Aims:

- Advise and support businesses and regional decision-makers to reach their renewable energy goals for 2020 and beyond;
- Close the knowledge gap by offering practice oriented Education and Training in RES;
- Develop innovative RES concepts for implementation on a rapidly changing market;
- Contribute to enabling Europe to take the leading role as the most innovative region towards global sustainability and optimise Europe's position in competitive future markets;
- Set up full value chain international partnerships in RES.



*eseia Innovation*

## About eseia: Strategy

➤ **To set the agenda for future energy innovation** in Europe eseia experts brought their knowledge to discuss the necessary innovations focusing on the EC SET plan, Key Enabling Technologies (KETs), bioresources, smart building as well as the changes necessary to the European education system.

➤ **To accomplish excellence in capacity building**, tailored to the needs and expectations of all stakeholders eseia continued to develop its Education and Training Programme. eseia international summer schools, international professional training courses, staff exchanges, twinning exercises, and brokerage events were offered in Europe and abroad.

### ➤ eseia Internationalisation

**To increase the relevance** of the Alliance as a European international organisation, eseia forged new **international strategic partnerships**. In 2014 eseia participated in capacity building activities in the Eastern Partnership countries of Armenia, Belarus, Georgia, and Moldova in the framework of the EC FP7 INCO ENEr2i project. In addition, eseia established a partnership base with emerging and energy influential economies of China and India.

The first milestone was achieved by concluding an **EU - China Memorandum of Understanding** in October 2014 that paves the way for fostering research and innovation partnerships for smart cities and regions. eseia also successfully launched cooperation with the European Business and Technology Centre EBTC. eseia supports India in setting up 100 smart cities in the next few years.



# About eseia: Organisation

## eseia GENERAL ASSEMBLY

The GA is eseia’s highest decision making body consisting of eseia members representatives, each member having one vote. The GA met twice in 2014, namely in Enschede hosted by the University of Twente and in Brussels at the eseia headquarters. The decisions taken by the GA were based on the proposals made by the GC.

## eseia GOVERNING COUNCIL



Harald Kainz  
TU Graz, AT

*President*



Teresa Ponce  
de Leão  
LNEG, PT

*Vice-President*



Brian Norton  
DIT, IE

*Vice-President*



Andrea Simoni  
FKB, IT

*Vice-President*



Ion Vlisa  
UTBv, RO

*Vice-President*



Sjoerd van  
Tongeren  
UT, NL

*Treasurer*



Brigitte  
Hasewend  
eseia, AT

*Director*

## eseia SECRETARIAT

eseia operations are coordinated by the eseia Secretariat headed by the eseia Director. The Secretariat staff:

- Coordinates large scale proposal development: provides funding screening, ‘intelligence’ on relevant calls, consortium building support, proposal design;
- Sets up Joint thematic projects and initiatives and provides a platform for sharing among members;
- Supports cooperation with international partners;
- Provides access to news from the EC grapevine;
- Exploits and disseminates project results;
- Involves eseia experts in EC policy-making.

Find more about eseia services in the eseia Service Portfolio <http://www.eseia.eu/about/>

## eseia Five Years

- **30 Members** from business, policy, education and research sectors, covering **15 EU countries** and mobilising **150 experts** in sustainable energy;
- Valuable partner and efficient coordinator of **8 projects**, amounting to more than **1 Mio EUR**;
- More than **50 events** hosting more than **1000 people** from in and outside Europe;
- eseia Education and Training Programme with more than **450 participants** to date;
- eseia Best Lecture Library with a collection of **100 top lectures** and a variety of different types of resources and materials targeting on sustainable energy systems.



Members watch the eseia Five Years video on [www.eseia.eu/members-downloads/](http://www.eseia.eu/members-downloads/)



*eseia- IGS Conference on Smart and Green Transition in Cities and Regions,  
hosted by University of Twente in Enschede, NL, 24-25.04.14*

<http://www.utwente.nl/igs/eseia/>



## eseia Expertise

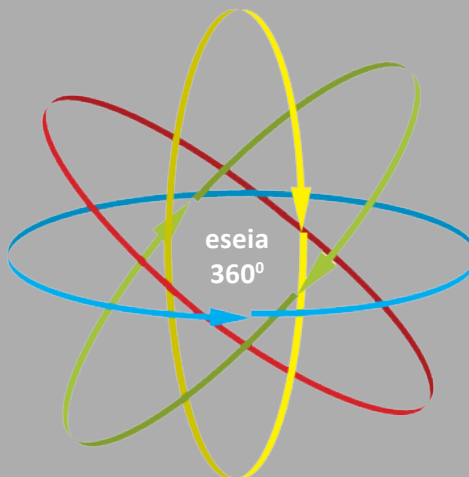
eseia's expertise, is the added value of combining competencies of the membership organisations.  
These competencies are categorised in four platforms in the following 360° view:

### PROVISION

Focuses on increasing energy efficiency and pushes innovation in both new and existing technologies.

### EFFICIENCY AND USAGE

Targets the production of clean energy through a wide range of resources and methods such as Biorefinery and Biofuels.



### INTELLIGENCE

Sets the implementation of clean energy with expertise, such as smart grids, which provide the infrastructure to distribute to the user.

### INTEGRATION

Provides the necessary parameters to integrate the energy systems in the regional environment, including policy measures and master planning.

### ■ eseia Expert Database

This tool provides easy access to the eseia expert pool for eseia clients and partners. eseia members may use the eseia expert database to simplify their search for complementary competence within the eseia community. Currently, the eseia Expert Database has 150 experts.  
<http://www.eseia.eu/experts/>



## eseia Education and Training Programme (ETP)

On the basis of the rich and comprehensive expertise of its members, eseia has come closer to its goal of becoming a premier provider of practical education and training for postgraduate students and professionals in and outside of Europe.

The eseia ETP addresses business, science and politics, as well as excellent students. It combines internationally recognized research across disciplines with practical experience to provide participants with the skills and knowledge to develop innovative solutions.

[www.etp.eseia.eu](http://www.etp.eseia.eu)



*eseia International Summer School 2014 in Braşov, RO*

### **Sustainable Smart Metropolitan Regions of Tomorrow** *14 - 27 July 2014 at the Transilvania University of Braşov, Romania*

- 15 post-graduate students and young professionals from nine European countries;
- Hosted in the Solar House of the Transilvania University of Braşov and officially opened by Ion Visa, General Director of RDI of UTBv;
- Four different innovation angles of smart energy systems in metropolitan areas, namely policy governance, socioeconomics, design, and technology;
- Strong mix of interactive lectures, workshops, discussions, and specific project development;
- International lecturers included experts from eseia members UT, VGTU, LNEG, TU Graz as well as from ZSI;
- Professional visits to Avrig green city, Viessmann company, the Green Energy Campus of Transilvania University of Braşov, and Ucea de Sus Solar PV Park, in Braşov.

## eseia Working Groups

In 2014 eseia supported three Working Groups including a total of 150 eseia experts. Their aim is to provide innovation platforms to encourage joint projects and proposals, exchange ideas and promote opportunities on new sustainable energy systems and their implementation.



Michael Narodoslawsky  
TU Graz, AT



Teresa Ponce de Leão  
LNEG, PT

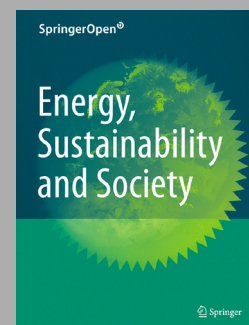


Ion Visa  
UTBv, RO

**eseia WG 1 on Bioresources** is dedicated to setting the agenda for the most appropriate use of bioresources. In 2014 the WG addressed the competition between different pathways for utilising bioresources from concrete local and regional perspectives.

**eseia WG 2 on Smart Cities and Regions** has focused expertise and plans to contribute in systematisation and implementation of the smart city concept. In 2014 the WG essentially focused on an efficiency and effectiveness culture based on intelligent management, integrated ICT, and active citizens' participation.

**eseia WG 3 on Education and Training** develops practical training and mobility programmes in order to enhance cooperation among eseia members. In 2014, the WG provided methodological guidance and quality assurance for the eseia ISS held in Braşov, Romania and for the FP7 INCO ENER2i project on capacity building.



eseia

Springer Online Journal  
[www.energysustainsoc.com](http://www.energysustainsoc.com)

*The Cities are System of systems. The WG on Smart Cities and Regions addresses this topic in order to enable decision-makers to understand the implications of various levels of choices on technical and economic performance. This approach has not been taken up thoroughly by Horizon 2020 yet.*

Teresa Ponce de Leão

In 2014 the three eseia WGs also made a selection of Horizon2020 calls they would be focusing on in 2015. A number of proposals were submitted in 2014 and more are in the pipeline.

## eseia Projects

### EC FP7 INCO ENER2i (1 Oct. 2013 – 30 Sept. 2016)

ENER2i reinforces cooperation with Eastern Partnership countries on bridging the gap between energy research and energy innovation. The project is coordinated by ZSI with partners from EU, Armenia, Belarus, Georgia and Moldova. ENER2i focuses on the need to find innovative and sustainable solutions, addressing the gap between new energy research and European industry. To date, more than 200 mobilities have been implemented. [www.ener2i.eu](http://www.ener2i.eu)



*This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 609532.*



*eseia ENER2i EU Brokerage in Brussels, Committee of the Regions, Brussels 23.06.14*

#### ■ EU Brokerage Events - 23 June and 2 December

More than 70 participants from 18 countries, including six Eastern Partnership countries.

#### ■ Local Brokerage Events

14 - 15 October in Belarus and 10 - 12 December in Moldova.

#### ■ Twinning Activities

15-17 December study visit at SINTEF Energy Research in Oslo and Trondheim, Norway.

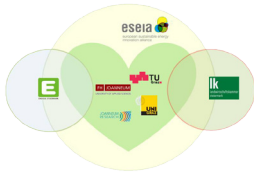
#### ■ Innovation Training Workshops

14 - 15 October in Belarus and 10 - 12 December in Moldova.

# eseia Projects

## FOCUS ON BIORESOURCES

### The Green Heart of Styria, funded by the Styrian Government (1 July 2013 – 31 Dec. 2014)



As the demand for renewable energy increases, we see a competition arising for different forms of land use, mainly from food production, crops, or energy production for industry. The objective of this project was to provide scenarios for sustainable use of bioresources in Styria. Partners in the project are Styrian Agricultural Chamber, Energy Styria, Joanneum Research, University of Graz, FH Joanneum, and TU Graz.

<http://www.eseia.eu/the-green-heart>

#### Outputs:

- eseia Discourse Book on Innovation Challenge towards Rational Use of Bioresources and Policy Brief
- Bioresources Cafe Europa (11.10.13)
- International Workshop on Rational Use of Bioresources (28.11.13)
- eseia IGS Conference on 'Smart and Green Transitions in Cities and Regions' (24-25.04.14)
- Bioresource 'Boden' Forum and Expert Forum (27.11.14 and 15.12.14)

*eseia strives to close the full innovation cycle by transforming research results into actual products and services, viable and competitive on the global market. With the rest of Europe, eseia is entering into the golden age of renewable energy development - with more than 60% of the total H2020 funding touching upon sustainable energy, the next five years will be a key growth period for eseia.*

Brigitte Hasewend, eseia Director

## FOCUS ON SMART CITIES AND REGIONS

### iEnergy Weiz-Gleisdorf, funded by the Austrian Climate and Energy Fund (1 June 2012 – 1 May 2015)



In order to secure the sustainable development of the urban region Weiz-Gleisdorf, an energy vision 'Weiz-Gleisdorf 2050' was developed. It was created on the basis of a scenario analysis with the involvement of all regional stakeholders. The planned development of the region aiming at 'zero emissions' requires people to change their way of living, in particular with regard to economy, transport and energy. Partners in this project are Energieregion Weiz-Gleisdorf, TU Graz, Weizer Energie Innovations Zentrum, Leitner, Planung & Bauaufsicht, LIM Projektentwicklungs and JOANNEUM RESEARCH.

<http://www.smartcities.at/city-projects/smart-cities-en-us/ienergy-2.0-en-us/>

## Looking to 2015

FOCUS	Nº	PROJECT / CALL	OBJECTIVE	LEAD ORGANISATION	FINANCING
1. BIORESOURCES	1	EU-China International Cooperation	Evaluate existing techniques and develop new and innovative approaches for efficient use of agro waste.	BE2020+	20 Mio. €
	2	H2020-TWINN-2015	Address networking gaps between research institutions of the low performing Member States and regions and internationally-leading counterparts at EU level.	IMP PAM LNEG	2 Mio. €
	3	RootEED	Empowering public authorities to plan finance and implement ambitious sustainable energy policies and plans, on the basis of reliable data and analyse.	Energy Agency Styria	2 Mio. €
2. SMART CITIES AND REGIONS	4	ΣHeat Recovery	Address the technological and demonstration (implementation) challenges posed by industry-scale waste heat recovery across Europe.	UCD	4 Mio. €
	5	COST PV simulation and modelling data exchange	Constituting a bridge towards the scientific communities of emerging countries.	DIT	1 Mio. €
	6	EC Structural Funding: INTERREG EUROPE	Improving regional development policies and programmes.	eseia WG 2	3 Mio. €
3. EDUCATION AND TRAINING	7	Marie Curie RISE Phoenix	International promotion and inter-sector collaboration through R&I staff exchanges, and sharing of knowledge and ideas from research to market.	ECO / BRP Powertrain/BAV	2 Mio. €
	8	Erasmus+	Raise the profile of European higher education in RES in the world.	eseia WG 3	2 Mio. €
	9	Fostering Knowledge between EU and India	Assess the energy needs of the region and provide training and capacity building for Smart Cities.	eseia WG 2	150 k €
TOTAL					36 Mio €



## eseia Membership

*eseia brings together a diverse range of organisations involved in energy research and innovation. It provides a unique forum for the development of new collaborative projects and the development of networks and partnerships.*

Brian Norton, eseia Vice-President, DIT, IE

**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, 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.

bioenergy2020+

**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.





**Kyminlaakso 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, ultra-light and light aircraft.



**SINTEF Energy Research** is a member of the SINTEF Group. Its R&D activities are focused on power production and energy conversion, transmission, distribution, and the end use of energy, including industrial processes and products.



**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 Leoben** is an internationally renowned Centre of Excellence in Mining, Metallurgy and Materials. The core competencies range from raw material extraction to manufacturing, recycling and disposal, considered as central tasks for future sustainability.



**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 technology. The University is committed to making an economic and social contribution to the region of the Netherlands where it is based.

UNIVERSITY OF TWENTE.

**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.



# eseia Finances



Sjoerd van Tongeren  
UT, NL  
*eseia Treasurer*

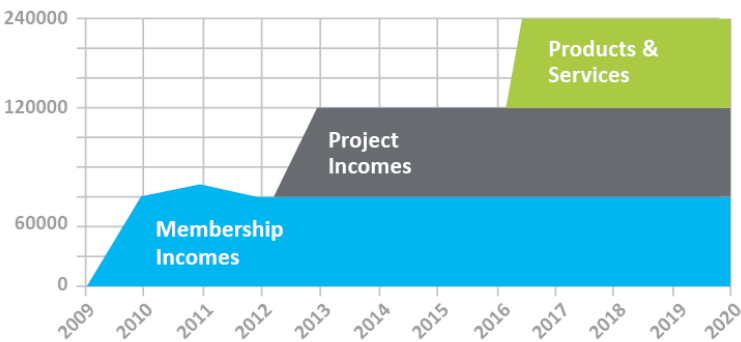
The eseia financial strategy is based on the principles of increasing relevance and sustainability of the organisation in terms of EU membership coverage, development of the services of the organisation and attracting international investments from associate membership, partnership agreements and service contracts.

In 2014 the eseia financial structure was stable and conform with previous planning. Membership fees essentially covered basic expenses for management and improving the visibility of the organisation and partly also for project acquisition.

As Treasurer of eseia, I am thankful to the members for all their effort, which has led to a successful financial year.



*eseia Approach*



*eseia Income Table*

## Brussels Links

The eseia Secretariat offered a wide range of services to members including access to news from the European Commission grapevine. The Alliance actively participated in EC funded projects and set up international partnerships with major European networks. In order to update members on recent policy and programme trends, in 2014 eseia received a series of speakers from the European institutions, including from the European Commission and the European Committee of the Regions, to the eseia Brussels Hub.

Among the guest speakers were:

- Mercedes Bresso, Vice-President of the Committee of the Regions;
- Dimitri Corpakis, EC, DG R&I, Head of Unit Innovation Union and the ERA;
- Nicholas Deliyannis, EC, DG R&I, Deputy Head of Unit, KET Strategy;
- Thierry Devars, EC, DG Research & Innovation, International Relations Officer, Project Officer;
- Katalin Alföldi, Policy Officer for Inclusiveness and Excellence at the COST Association.



*eseia FP7 Ener2i EU Brokerage in Brussels, 23.6.14  
Committee of the Regions Vice-President M. Bresso and  
eseia Director B. Hasewend*



*eseia FP7 Ener2i EU Brokerage in Brussels, 2.12.14  
K. Alföldy presenting the COST Association.*



*eseia Business Meetings in Brussels, 3.12.14  
From left to right: D. Corpakis and N. Deliyannis*

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[www.etp.eseia.eu](http://www.etp.eseia.eu)

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