

European Futures for Energy Efficiency
649342 EUFORIE

International EUFORIE Conferences
on Energy Efficiency

WP9 Deliverable D9.7

Revised version, April 17, 2019

This project has received funding from the European Commission
Horizon2020 Research and Innovation Programme
under Grant Agreement No. 649342 EUFORIE



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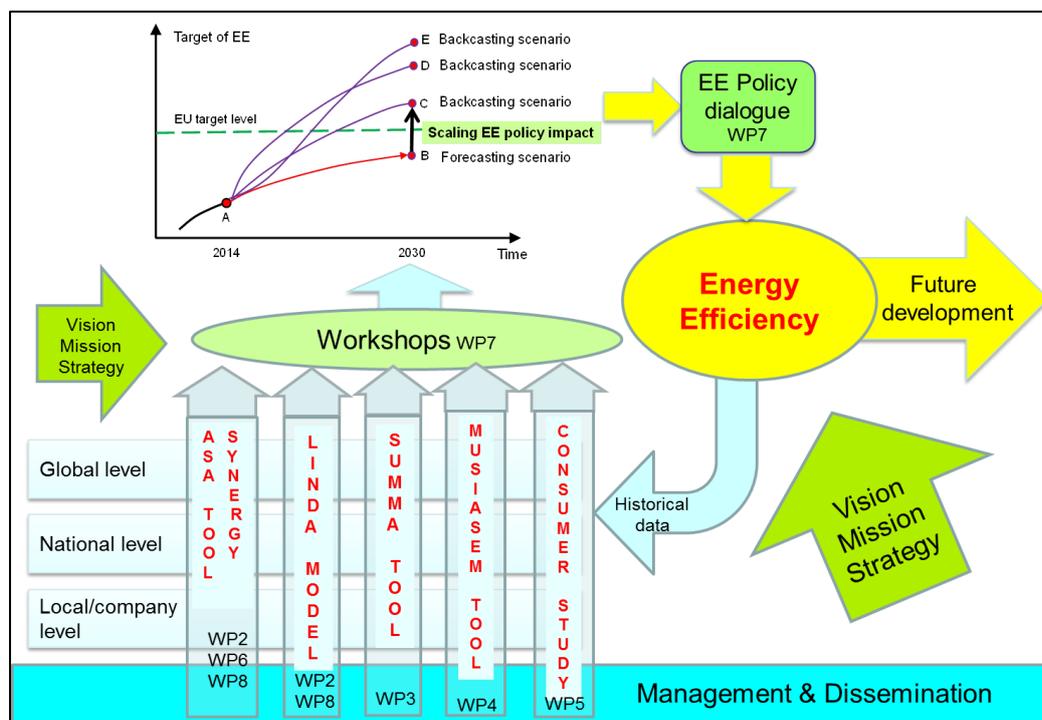
Please cite as follows: Vehmas, J. (2019). International EUFORIE Conferences on Energy Efficiency. European Futures for Energy Efficiency (649342 EUFORIE), deliverable D9.7.

The EUFORIE project

The strategic goal of the EUFORIE project is to provide useful and accurate information and knowledge in the field of energy efficiency for the EU Commission and stakeholders in the Member States. The tangible objectives are the following:

1. To provide energy and energy efficiency trends and their drivers, synergies and trade-offs between energy efficiency related policies, as well as energy efficiency scenarios (WP2).
2. To provide data about implementation of energy efficiency in specific processes, sectors and entire systems, in order to understand bottlenecks/efficiency drops and suggest improvements (WP3).
3. To carry out analyses of efficiency of provision, from making useful energy carriers from primary energy sources, and from conversion of energy carriers to end uses across macro-economic sectors (WP4).
4. To identify policy instruments and other measures leading to significant reduction in the energy consumption of households (WP5).
5. To analyse the relationship between investments and change in energy efficiency, and to develop indicators to describe changing energy efficiency at the company level (WP6).
6. To carry out participatory foresight for European stakeholders of energy efficiency with a target of providing ideas for the energy efficiency vision and strategy in the European Union (WP7).
7. To compare energy efficiency policy instruments and measures and their impacts in China and the European Union (WP8).

The EUFORIE Work Packages relate to each other. The project applies different quantitative and qualitative analysis methods to energy efficiency in the EU and its Member States at different levels and from different perspectives. These analyses provide input for foresight activities, which serve European energy efficiency vision and strategy process by generating useful information. Management (WP1) and dissemination (WP9) run in parallel with the research and innovation activities.



Executive summary

The purpose of this deliverable is to present the two conferences organised by the EUFORIE project in collaboration with other actors, and to give information about the contributions of the EUFORIE beneficiaries have made in these two conferences:

- BIWAES (Biennial International Workshop Advances in Energy Studies) 2017 conference “Energy Futures, Environment and Well-being”, organized on 25-28 September 2017 in Naples, Italy, by Parthenope University of Naples
- Futures conference 2018 “Energizing Futures – Sustainable Development and Energy in Transition”, organized on 13-14 June 2018 in Tampere, Finland, by University of Turku, Finland Futures Research Centre.

The EUFORIE project has also been presented in the European Modelling Platform for Energy (EMP-E) conference “Modelling Clean Energy Pathways” on 25-26 September 2018 in Brussels, Belgium.

The results are useful for all stakeholders (policy makers, researchers, NGOs/citizens and energy industry/companies) who are interested in research focusing on energy efficiency at different spatial, temporal and functional scales, and the energy, material and environmental performance of EU Member States, companies and different functional systems.

Tasks of this deliverable related to WP9

This deliverable D9.7 disseminates results from the EUFORIE project (WP9). It includes the websites, programmes, abstracts and proceedings available, as well as lists of EUFORIE-related presentations and other contributions in two international conferences organized by EUFORIE beneficiaries. These conferences include BIWAES 2017 on 25-28 September 2017 in Naples, Italy and Energizing Futures 2018 on 13-14 June 2018 in Tampere, Finland.

Energy efficiency has been a major theme in both conferences with a special session devoted to it, and the presentations and other contributions made by the beneficiaries have disseminated results from EUFORIE WP2, WP3, WP4, WP5, WP6 and WP8.

The EUFORIE project has also been presented in the European Modelling Platform for Energy (EMP-E) conference “Modelling Clean Energy Pathways” on 25-26 September 2018 in Brussels, Belgium. Registered participants of this conference were invited to participate in the EUFORIE roundtable discussion (WP7 task 7.5) which was held as a back-to-back event with the EMP-E conference on 27th September in Brussels, Belgium).

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Introduction

This report introduces two international conferences organized by the EUFORIE beneficiaries. Both conferences included significant dissemination activities (9 and 10 papers based on the activities carried out in the EUFORIE project). These conferences were

- BIWAES (Biennial International Workshop Advances in Energy Studies) 2017 conference “Energy Futures, Environment and Well-being”, organized on 25-28 September 2017 in Naples, Italy, by Parthenope University of Naples
- Futures conference 2018 “Energizing Futures – Sustainable Development and Energy in Transition”, organized on 13-14 June 2018 in Tampere, Finland, by University of Turku, Finland Futures Research Centre.

A general EUFORIE project presentation was also held in the conference “Modelling Clean Energy Pathways”, organized by the European Modelling Platform of Energy (EMP-E), on 25-26 September 2018 in Brussels, Belgium. Registered participants of this conference were a major target group of the EUFORIE roundtable discussion¹.

In addition, individual papers disseminating EUFORIE results have been presented in various conferences during the 45 months duration of EUFORIE project (1 March 2015 – 30 November 2018).

All results from the EUFORIE project are available in the EUFORIE webpage <http://www.euforie-h2020.eu>.

¹ See Vehmas, J. (2018). Report of the roundtable results: Foresight analyses of European energy efficiency vision and strategy. European Futures for Energy Efficiency (649342 EUFORIE), Deliverable D7.2.

EUFORIE in the BIWAES 2017 conference

The 10th Biennial International Workshop Advances in Energy Studies, “Energy futures, environment and well-being” was organised in Villa Doria D’Angri, Parthenope University of Naples on September 25-28, 2017. The EUFORIE project was acknowledged in the conference materials.

The conference website is available at

<http://biwaes.uniparthenope.it/>

The conference programme (Annex 1) is available at

http://biwaes.uniparthenope.it/wp-content/uploads/2017/09/BIWAES2017_PROGRAMME_23-September-2017.pdf

Presentations held in the conference (slides) are available at the conference website for some of the presentations.

Conference proceedings² has been published. It is available at

http://castor.tugraz.at/doku/BIWAES2017/BIWAES_2017.pdf

Special issues on papers presented in the BIWAES 2017 conference will be published later in Elsevier journals Energy, Energy Policy, Ecological Modelling, and Journal of Environmental Accounting and Management.

In BIWAES 207, on 26th September 2017 at 14:30-17:30, Panel 6 on Energy Efficiency was chaired by Dr. Jarmo Vehmas, University of Turku, Finland and Dr. Elvira Buonocore, Parthenope University of Naples, Italy. In addition, on 26th September 2017 at 11:15-13:00, thematic design-oriented working group on energy futures under theme “Implementing energy efficiency: Barriers and solutions. From theory to practice” without prepared presentations was chaired by: Mark T. Brown, University of Florida, U.S. and Silvio Viglia, Parthenope University, Italy.

EUFORIE related presentations in the conference included the following (page numbers refer to the conference proceedings above):

1. Fabiana Corcelli, Gabriella Fiorentino, Jarmo Vehmas, Sergio Ulgiati. Energy Efficiency and environmental performance indicators of papermaking from chemical pulp. A Finland case study. Pp. 184-194.

² See Ulgiati, S., Vanoli, L., Brown, M.T. & Casazza, M. (eds. 2017). BIWAES 2017. 10th Biennial International Workshop Advances in Energy Studies. Energy futures, environment and well-being. Budapest: Verlag der Technischen Universität Graz. Available at http://castor.tugraz.at/doku/BIWAES2017/BIWAES_2017.pdf.

2. Laura Pérez Sánchez, Maddalena Ripa, Raúl Velasco-Fernández, Gonzalo Gamboa, Renato F. Rallo, Mario Giampietro. Energy performance at city level – the societal metabolism of Barcelona. Pp. 203-210.
3. Gianluca Trotta, Joachim Spangenberg, Sylvia Lorek. Energy efficiency in the residential sector: identification of promising policy instruments and private initiatives among selected European countries. Pp. 303-310.
4. Gabriella Fiorentino and Sergio Ulgiati. Towards an energy efficient chemistry. An assessment of fuel and feedstock switching. Pp. 341-348.
5. Jari Kaivo-oja, Jarmo Vehmas, Jyrki Luukkanen. Energy intensity, energy consumption and changes in energy intensity in the EU-28 countries in 1995-2014. Pp. 470-477.
6. Jarmo Vehmas, Jari Kaivo-Oja, Jyrki Luukkanen. Decomposition of total primary energy supply: Energy efficiency trends in the EU-28 Member States in 1990-2013. Pp. 478-484.
7. Juha Panula-Ontto, Jarmo Vehmas, Ying Chen, Jinxing Jiang, Jyrki Luukkanen, Jari Kaivo-oja, Mikkel Stein Knudsen. Impacts of main economic sectors on energy efficiency in the period 2015–2030 in China. Pp. 485-492.
8. Chiara Vassillo, Daniela Restaino, Remo Santagata, Silvio Viglia, Jarmo Vehmas, Sergio Ulgiati. Energy efficiency and stakeholders: Barriers, costs and benefits of implementation. The Naples case study in the EUFORIE Project. Pp. 524-532.
9. Sylvia Lorek and Joachim Spangenberg. Social innovation for energy sufficiency – methods, results and lessons learnt in the EUFORIE project. Pp. 643-650.

EUFORIE in the Energizing Futures 2018 conference

The 19th Futures Conference organized by Finland Futures Research Centre, University of Turku was organised under the title ENERGIZING FUTURES – Sustainable Development and Energy in Transition on 13-14 June 2018 in Tampere, Finland. The EUFORIE project was acknowledged in the conference materials.

The conference website is available at

<https://futuresconference2018.wordpress.com/>

The call for papers and posters is available at

<https://futuresconference2018.files.wordpress.com/2017/07/cfp-futuresconference2018.pdf>

The conference programme (Annex 2) is available at

https://futuresconference2018.files.wordpress.com/2018/05/energizing_program2.pdf

Book of abstracts is available at

<https://futuresconference2018.files.wordpress.com/2018/06/energizing-boa-web.pdf>

All presentations held (slides) in the conference are available at

<https://futuresconference2018.wordpress.com/presentations/>

A conference proceedings will be published later in the series of Finland Futures Research Centre. A special issue of selected papers presented in the Energizing Futures conference will be published later in the Springer journal European Journal of Futures Research.

Three sessions (sessions I, III and IV) on “Theory and practice of energy and resource efficiency and sufficiency were held on 13th June 2018 at 13:30-15:00 (chaired by Dr. Jarmo Vehmas) and 15:30-17:00 (chaired by Dr. Petri Tapio) and on 14th June at 13:00-14:30 (chaired by Dr. Jarmo Vehmas). An interactive workshop “Energy sufficiency: Establishing a new guiding principle to reduce total energy consumption” was held on 13th June at 15:30-17:00 (chaired by Dr. Sylvia Lorek).

EUFORIE related presentations in the conference included the following:

1. Jarmo Vehmas, Jyrki Luukkanen & Jari Kaivo-oja. Energy efficiency as a driver of CO₂ emissions in the EU.
2. Gianluca Trotta. Energy efficiency trends in the European Union: decomposition analysis and policy implications.
3. Gabriella Fiorentino, Amalia Zucaro & Sergio Ulgiati. Energy and material efficiency in chemical processes.

4. Amalia Zucaro, Remo Santagata, Gabriella Fiorentino, Fabiana Corcelli & Sergio Ulgiati. Resource efficiency and circular economy. The search for appropriate indicators.
5. Sylvia Lorek. Introduction to Workshop and the concept of energy sufficiency.
6. Jari Kaivo-oja, Jarmo Vehmas & Jyrki Luukkanen. An EU-28 trends evaluation of sustainable development goal 7 and goal 12 of energy policy: Final energy consumption in households per capita, greenhouse gas emissions intensity of energy consumption, primary energy consumption, final energy consumption and energy productivity.
7. Raúl Velasco-Fernández & Mario Giampietro. The end-use matrix: An Innovative tool for the analysis of the energy performance of the economy.
8. Jarmo Vehmas. A flexible sustainability indicator for companies.
9. Renato Rallo, Mario Casazza, Silvio Viglia & Sergio Ulgiati. Energy efficiency as an engine for development in countries characterized by energy poverty.
10. Jari Kaivo-oja, Jyrki Luukkanen & Jarmo Vehmas. Big picture of energy efficiency: Solving a complex puzzle of green economy and sustainability.

EUFORIE in the EMP-E 2018 conference

The EUFORIE project was presented in the conference “Modelling Clean Energy Pathways” organized by the European Modelling Platform for Energy (EMP-E) on 25-26 September in Brussels, Belgium. The idea was to encourage the EMP-E 2018 conference participants to participate also in the EUFORIE roundtable discussion which was organized back-to-back the EMP-E 2018 conference on 27 September 2018 in Brussels, but in a different venue from the EMP-E 2018 conference. Organizers of the EMP-E conference had granted a very short (5 min) presentation for the EUFORIE project only, and it was included in the conference programme (Annex 3).

The EUFORIE presentation included a brief presentation of the project, and a news flash about the next day’s roundtable discussion. The presentation slides are available in Annex 4 of this report. The EUFORIE presentation was placed in the closing session of the first day (25 September) of the EMP-E 2018 conference with an audience of approximately 100 persons. The presentation did not raise any questions or comments. Copies of the EUFORIE leaflet and the four EUFORIE Policy Briefs (related to the roundtable agenda³) were available for the participants of the EMP-E 2018 conference.

³ See Vehmas, J. (2018). Report of the roundtable results: Foresight analyses of European energy efficiency vision and strategy. European Futures for Energy Efficiency (649342 EUFORIE), Deliverable D7.2.

Annex 1. Programme of the BIWAES 2017 conference

Biennial International Workshop Advances in Energy Studies 2017

BIWAES 2017

WORKSHOP PROGRAMME

Version: September 23, 2017

(All events occur in the Plenary Room, unless otherwise indicated)

Sunday, 24th September

Registration of participants, from 16.00 to 19.00 - Hotel Paradiso, entrance lobby

Monday 25th September

8.00-9.00	<i>Registration and welcome coffee</i>
9.00-9.30	<i>Welcome addresses</i> Sergio Ulgiati , BIWAES workshop series founder, Department of Science and Technology, 'Parthenope' University of Napoli. Alberto Carotenuto , Rector, 'Parthenope' University of Napoli Laura Vanoli , co-Chair, DiCEM, Università degli studi di Cassino e del Lazio Meridionale
Session Chair: Riccardo Basosi , Department of Chemistry, University of Siena (Italy)	
9.30-10.15	<i>Opening lecture: Beyond growth: Economics as if the planet mattered</i> Mark T. Brown , Director of the "H.T. Odum" Center for Environmental Policy, University of Florida Sergio Ulgiati , Department of Science and Technology, 'Parthenope' University of Napoli.
10.15-10.30	<i>Questions and Comments</i>
10.30-10.45	<i>Coffee break</i>
10.45-11.30	<i>Keynote Lecture: Back to the Future</i> Gilberto Gallopin , Buenos Aires, Argentina. Independent Scholar and Associate Fellow of the Tellus Institute
11.30-11.45	<i>Questions and Comments</i>
11.45-13.30	<i>Poster Session I - Room Chapel</i> (with short Authors' presentations & questions/answers) <i>Chaired by: Massimiliano Lega</i> , Parthenope University, Napoli, Italy <ol style="list-style-type: none"> 1. Alejandro Del Amo, Amaya Martínez-Gracia, Angel A. Bayod-Rújula. Performance analysis and experimental validation of a solar-assisted heat pump fed by photovoltaic-thermal collectors. 2. Gabriella Duca. Usability of in-home energy displays and energy saving: a design case 3. Marco Raugei and Patricia Winfield. Prospective LCA of the production and EoL recycling of a novel type of Li-ion batteries for electric vehicles 4. Luis Acevedo, Javier Uche, Fernando Cirez, Sergio Usón, Amaya Martínez-Gracia, Angel A. Bayod-Rújula. Experimental analysis of a domestic trigeneration scheme feed by photovoltaic/thermal (PVT) collectors 5. Massimiliano Lega, Marco Casazza, Vincenzo Severino, Pier Luigi Accardo. Energy demand and environmental impacts of an Italian slum: a preliminary analysis. 6. Arno P. Clasen and Feni Agostinho. Energetic-environmental performance of the Brazilian offshore pre-salt oil 7. Rosa Anna Nastro, Maria Toscanesi, Fabio Flagiello, Edvige Gambino, Giacomo

	Falcucci, Michele Arienzo, Luciano Ferrara, Elio Jannelli, Marco Trifuoggi. Microbial Fuel Cells (MFCs) remediation activity of marine sediments sampled at a dismissed industrial site: what opportunities?
11.45-13.30	<p>Poster Session 2 - Room Posillipo (with short Authors' presentations & questions/answers) <i>Chaired by: Cecilia M. V. B. Almeida, UNIP-Universidade Paulista, Sao Paulo, Brazil</i></p> <ol style="list-style-type: none"> 1. Amalia Zucaro, Annachiara Forte, Angelo Fierro. The environmental impacts of wheat straw-based lignocellulosic ethanol for transport sector in a biorefinery prospective. 2. Dewei Yang. Evaluating rural developing dynamics using a combined energy and niche method in a watershed 3. Enrique Ortega, José Maria Gusman-Ferraz, Mariana Oliveira, Anna Lewandowska-Czarnecka. A reflection about the Energy Analysis of Agricultural Systems by focusing on the agroecological transition process 4. Mirtes V. Mariano, Biagio F. Giannetti, Cecilia M. V. B. Almeida. Energy Assessment as a management tool for urban parks 5. Marco Casazza, Yan Gao, Xinyu Liu, Fanxin Meng, Jinyan Xue, Gengyuan Liu, Sergio Ulgiati. Water-Energy-Food urban planning: The Urban Circular Economy Calculator (UCEC) 6. Anna Lewandowska-Czarnecka, Agnieszka Piernik, Andrzej Nienartowicz. Sustainability indicators in different type of farms. A case study from Poland. 7. Karabee Das, Greeshma Pradhan, Sanderine Nonhebel. Quantifying Human energy expenditure in cooking systems in rural areas in developing countries. 8. Vasile Dogaru, Claudiu Brandas. A real (non-pseudo) spatial index for neutral CO₂ for urban micro-zone in temperate continental climate
11.45-13.30	<p>Poster Session 3 - Room Mergellina (with short Authors' presentations & questions/answers) <i>Chaired by: Francesco Gonella, Ca' Foscari University, Venice, Italy</i></p> <ol style="list-style-type: none"> 1. Marco Casazza, Paolo de Vingo, Wim Vandewiele, Sergio Ulgiati. Environmental resources, economy, regulations: a lack of Community-Based Adaptation for two Medieval monastic communities 2. Riccardo Basosi, Angelo Facchini, Antonio Scala, Renata Mele, Maria Laura Parisi, Luca Valori. Investigation of rebound effect in energy consumption of megacities 3. Verena Helen van Zyl-Bulitta, Jamen Gien Varney-Wong, William Stafford. A mapping and navigation approach for energy system option spaces on techno-, management- and socio-scales across the Global North-South 4. Renato Francesco Rallo. Candles in the dark: a review of environmental and sustainability indicators and their criticisms 5. Francesco Spano. Resilience indicators, energy limitations and leverage points: who controls the controllers 6. Flavio Picone, Elvira Buonocore, Riccardo D'Agostaro, Stefano Donati, Pier Paolo Franzese, Riccardo Chemello. Assessing ecosystem services in the Egadi islands marine protected area: an energy perspective 7. Francesco Spano. Land requirements for Mediterranean diet: standard agriculture vs new agroecology 8. Gloria Rea, Chiara Cagnazzo, Angelo Riccio, Vincenzo Artale. Planetary boundaries in a changing climate system: how the Antarctic ozone trend responds to stratospheric dynamics?
13.30-15.00	Lunch
15.00-17.30	Parallel research-oriented panels and symposia.

<p><i>Oral presentations by participants followed by open discussion on the state of the problem, solutions, research and policy priorities. Results to be summarized by the panel coordinator (each presentation, 20 minutes; then questions and comments).</i></p> <p><u>Panel 1. Mobility of passengers and freight - Room Plenary</u> <i>Chaired by: Angelo Facchini, IMT School for Advanced Studies Lucca and Shupeì Huang, China University of Geosciences, Beijing, China</i></p> <ol style="list-style-type: none"> 1. <u>Shupeì Huang, Haizhong An, Shaobo Wen, Gabriella Fiorentino, Fabiana Corcelli, Wei Fang and Sergio Ulgiati.</u> Terrestrial transport modalities in China: a survey of monetary, energy and environmental costs. 2. <u>Silvio Cristiano and Francesco Gonella.</u> On the Emergy accounting for the evaluation of road transport systems: thoughts for an Italian case study 3. <u>Amela Ajanovic and Reinhard Haas.</u> Energy and mobility: Hydrogen as fuel for mobility and storage for renewable energy 4. <u>Louisa Jane Di Felice, Maddalena Ripa, Mario Giampietro.</u> Electric vehicles in the EU: between narrative and quantification 5. <u>Angelo Fierro, Annachiara Forte, Amalia Zucaro, Roberto Micera, Mario Giampietro.</u> MuSIASEM approach to evaluate the pertinence of the second generation bioethanol production system. The case study of ligno-cellulosic <i>Arundo donax</i> feedstock for the transport sector in Campania region, Italy. <p><u>Panel 2. Energy and urban systems - Room Chapel</u> <i>Chaired by: Olga Kordas, Royal Institute of Technology, Stockholm, Sweden, and Vasile Dogaru, West University of Timisoara, Romania</i></p> <ol style="list-style-type: none"> 1. <u>Hans Schnitzer.</u> Design of a Low-Carbon energy system for a new urban area in an industrial neighborhood 2. <u>William Braham, Evan Oskierko-Jeznacki, Jae Min Lee, Barry Silverman, Nasrin Khansari.</u> E[m]ergy Model of the greater Philadelphia Region 3. <u>Oleksii Pasichnyi, Jörgen Wallin, Hossein Shahrokni, Olga Kordas.</u> Data-driven building archetypes' generation for urban building energy modelling 4. <u>Marco Molinari and Olga Kordas.</u> ICT in the built environment: drivers, barriers and uncertainties 5. <u>Elena Mazzola, Tiziano Dalla Mora, Fabio Peron, Piercarlo Romagnoni.</u> The use of integrated energetic analyses on a Venetian historic building 6. <u>Laura Pérez Sánchez, Maddalena Ripa, Raúl Velasco-Fernández, Gonzalo Gamboa, Renato F. Rallo, Mario Giampietro.</u> Energy performance at city level – the societal metabolism of Barcelona <p><u>Panel 3. Food, energy, water and commodity nexus - Room Capri</u> <i>Chaired by: Sanderine Nonhebel, University of Groningen, The Netherlands, and Rosa Anna Nastro, Parthenope University, Napoli, Italy</i></p> <ol style="list-style-type: none"> 1. <u>Sanderine Nonhebel and Winnie Leenes.</u> Why becoming a vegetarian is not going to save the world, comparing land, energy and water footprints of a Dutch dish with meat and a modern vegetarian one. 2. <u>Fanxin Meng, Gengyuan Liu, Zhifeng Yang, Yuanchao Hu, Marco Casazza, Biagio F. Giannetti, Sergio Ulgiati.</u> Tracing urban carbon flow in the global economy system: Consumption vs production perspectives 3. <u>Luis Acevedo, Javier Uche, Fernando Cirez, Sergio Usón, Amaya Martínez-Gracia, Angel A. Bayod-Rújula.</u> Exergy analysis of the transient simulation of a renewable-based trigeneration scheme for domestic water and energy supply 4. <u>Heitor F. Marinho Neto and Feni Agostinho.</u> Sustainability diagnosis of goods and services: do they work in practice?

	<p>5. Judith Rodriguez Salcedo and Marina Sanchez De Prager. Assessment of the cultural heritage, in terms of eMergy, in agroecological systems of the region Valle del Cauca - Colombia</p> <p><u>Panel 4. The changing energy basis of economies: Declining fossil availability and transition management - Room Ischia</u> Chaired by: Silvio Viglia, Parthenope University, Napoli, Italy and Robert A. Herendeen, Gund Institute for Ecological Economics, University of Vermont, VT (USA)</p> <ol style="list-style-type: none"> 1. Umberto Perna. Reserves at risk: planning with deep uncertainty and high complexity 2. Fereidoon P. Sioshansi. How innovation and disruptions are reshaping the future of the power sector 3. Reinhard Haas. How to integrate large shares of variable renewables into the electricity system. 4. Robert Herendeen. 100% renewable: does this trump carrying capacity? 5. Cristina Madrid López. Shale Gas for a Low Carbon Economy? The limitations we have to consider. <p><u>Panel 5. Energy and ecological economics. Sustainable finance. New business models for energy. - Room Posillipo</u> Chaired by: Jesus Ramos-Martin, IKIAM University, Ecuador and Xi Ji, Peking University, China</p> <ol style="list-style-type: none"> 1. Gabriella Duca and Guglielmo Trupiano. Bioeconomy and the challenge of community centered design 2. Antonio Scala, Angelo Facchini, Umberto Perna. Portfolio analysis and allocation of renewable sources 3. Alessandro Sapiro. Exporting volatility through market integration: the case of Sardinia. 4. Juha Panula-Ontto, Jarmo Vehmas, Ying Chen, Jinxing Jiang, Jyrki Luukkanen, Jari Kaivo-Oja, Mikkel Stein Knudsen. Impacts of Main Economic Sectors on Energy Efficiency in the period 2015–2030 in China 5. Chang T. Chang, Michela Costa, Maurizio La Villetta, Adriano Macaluso, Daniele Piazzullo, Laura Vanoli. Thermodynamic and economic comparison of biomass drying systems coupled with different technologies of power generation <p><i>(Coffee and more, available during the working sessions)</i></p>
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Tuesday 26th September

Session Chair: Hans Schnitzer , Professor Emeritus, Technical University of Graz, Austria	
9.00-9.45	Keynote Lecture: Sustainability and Well Being: Energy, Technology, and Complexity Joseph A. Tainter , Utah University, USA
9.45-10.00	Questions and Comments
10.00-10.45	Keynote Lecture: Smart Energy Systems and the Plans for Renewable Energy. Perspectives for more Integrated National and European Planning Henrik Lund , Department of Development and Planning, Aalborg University, Denmark
10.45-11.00	Questions and Comments
11.00-11.15	Coffee break
11.15-13.00	Thematic, Design-oriented Working Groups on Energy Futures (thematic groups are not intended for presentation of personal research results, but instead as creative brainstorming and

	<p>designing sessions on hot topics characterized by special policy interest)</p> <ul style="list-style-type: none"> • Implementing energy efficiency, barriers and solutions. From theory to practice (<i>Chaired by: Mark T. Brown</i>, University of Florida and <i>Silvio Viglia</i>, Parthenope University, Italy) - Room Plenary • Renewable and nonrenewable energies between growth and de-growth patterns (<i>Chaired by: Barney Foran</i>, Charles Sturt University, Albury, Australia and <i>Robert A. Herendeen</i>, Gund Institute for Ecological Economics, University of Vermont, VT USA) - Room Ischia • Energy and cleaner production. Innovative designs and technologies (<i>Chaired by: Cecilia M. V. B. Almeida</i>, UNIP-Universidade Paulista, Sao Paulo, Brazil) and <i>Francesco Gonella</i>, Ca' Foscari University, Venice, Italy - Room Capri
13.00-14.30	Lunch
14.30-17.30	<p>Parallel research-oriented panels and symposia. <i>Oral presentations by participants followed by open discussion on the state of the problem, solutions, research and policy priorities. Results to be summarized by the panel coordinator (each presentation, 20 minutes; then questions and comments).</i></p> <p><u>Panel 6. Energy efficiency - Room Plenary</u> <i>Chaired by: Jarmo Vehmas</i>, University of Turku, Finland, and <i>Elvira Buonocore</i>, Parthenope University, Napoli, Italy</p> <ol style="list-style-type: none"> 1. Oleksii Pasichnyi, Jörgen Wallin, Fabian Levihn, Hossein Shahrokni, Olga Kordas. Energy Performance Certificates — new opportunities for data-enabled urban energy policy instruments? 2. Gianluca Trotta, Joachim Spangenberg, Sylvia Lorek. Energy efficiency in the residential sector: identification of promising policy instruments and private initiatives among selected European countries 3. Tonino Castrichino, Federico Balsani, Claudio Ferrari, Nicola Graniglia, Duccio Tempesti. Boosting energy efficiency in Public Administration. Study case: “Palazzo della Farnesina” 4. Fabiana Corcelli, Gabriella Fiorentino, Jarmo Vehmas, Sergio Ulgiati. Energy Efficiency and environmental performance indicators of papermaking from chemical pulp. A Finland case study. 5. Jarmo Vehmas, Jari Kaivo-Oja, Jyrki Luukkanen. Decomposition of Total Primary Energy Supply: Energy Efficiency Trends in the EU-28 Member States in 1990-2013 6. Mauro Reini and Melchiorre Casisi. Constructal Law and Thermoeconomic Optimization <p><u>Panel 7. Decision making tools for energy management. Stakeholders and participatory strategies. - Room Ischia</u> <i>Chaired by: Reinhard Haas</i>, Technical University of Wien, Austria and <i>Enrique Ortega</i>, Campinas University, Brazil</p> <ol style="list-style-type: none"> 1. Jari Kaivo-Oja, Jarmo Vehmas, Jyrki Luukkanen. Energy Intensity, Energy Consumption and Changes in Energy Intensity in the EU-28 Countries in 1995-2014 2. Anders Nilsson, Olga Kordas, David Lazarevic. Influencing Household Energy Consumption: Preliminary Results from a Residential Demand Response Program in Sweden 3. Kateryna Pereverza and Olga Kordas. Sustainability through stakeholder learning: participatory backcasting for the heating sector 4. Chiara Vassillo, Daniela Restaino, Remo Santagata, Silvio Viglia, Jarmo Vehmas, Sergio Ulgiati. Energy efficiency and stakeholders: Barriers, costs and benefits of implementation. The Naples case study in the EUFORIE Project

5. **Sylvia Lorek and Joachim Spangenberg**. Social innovation for energy sufficiency – methods, results and lessons learnt in the EUFORIE project

Panel 8. Matter and energy flows in the biosphere and human economy – Room Capri

Chaired by: **Pier Paolo Franzese**, Parthenope University of Napoli, Italy, and **Gilberto Gallopin**, Tellus Institute, Argentina - Room Capri

1. **Pier Paolo Franzese, Elvira Buonocore, Flavio Picone, Giovanni F. Russo**. Using environmental accounting to operationalize the Planetary Boundaries framework at local scale in marine ecosystems
2. **Marco Casazza, Joseph A. Tainter, Massimiliano Lega, Silvio Viglia, Gengyuan Liu, Sergio Ulgiati**. Energy features of human Socio-Ecological Systems relevant to the future of civilization
3. **Angelo Riccio, Antonino Staiano, Angelo Ciaramella, Francesco Camastra, Elena Chianese, Efisio Solazzo, Stefano Galmarini**. Ozone production and flows in the boundary layer and its impact on crop yields: an optimal ensemble estimation
4. **Ludmila Skaf, Elvira Buonocore, Stefano Dumontet, Roberto Capone, Pier Paolo Franzese**. Environmental costs and impact of food security in a changing world: The case of Lebanon
5. **Fabiana Zollo, Michela Del Vicario, Walter Quattrociochi, Antonio Scala**. The Climate Change debate on Facebook: a clash of contrasting narratives beyond rationality
6. **Rony Parra, Mario Giampietro, Louisa Di Felice, Anderson Castro**. Evaluation of energy metabolism in the oil extraction in Ecuador from the application of Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism (MuSIASEM)

Panel 9. Transition to low-carbon and renewable energies - Room Posillipo

Chaired by: **Maddalena Ripa**, Autonomous University, Barcelona, Spain and **Marco Raugei**, Oxford Brookes University, UK.

1. **Verena van Zyl-Bulitta, Enrique Kremers, Ralf Otte**. Temporal mechanisms for energy system balancing across different socio-technical scales aligned to the current electricity grid state
2. **Marco Raugei, Enrica Leccisi, Gonzalo Ramirez, Rodrigo Escobar Moragas, Vasilis Fthenakis**. Net energy availability and environmental performance of the Chilean electric grids: potential improvements and opportunities
3. **Angel A. Bavod-Rújula, Luis Acevedo, Javier Uche, Amaya Martínez-Gracia**. Improved management of battery and RO demand in grid connected PVT systems in dwellings
4. **Mateusz Szubel, Beata Matras, Szymon Podlasek, Mariusz Filipowicz**. Development of air manifold for straw – fired batch boiler using experimental and numerical methods
5. **Charlie Gullstrom, Olga Kordas, Marco Molinari**. Sharing Spaces in the Sharing Economy: to save energy, increase well-being or boost innovation? How do new initiatives align with energy transition?
6. **Jaime Cevallos and Jesus Ramos-Martin**. Spatial assessment of the potential of renewable energy: the case of Ecuador

(Coffee and more, available during the working sessions)

19.00-22.00

Social Dinner and Concert

Wednesday 27th September

Session Chair: Olga Kordas , Royal Institute of Technology, Stockholm, Sweden	
9.00-9.45	Keynote Lecture: Optimized resource management through circular economy patterns: Challenges in free-market contexts Andrea Genovese , Logistics and Supply Chain Management Research Centre, Management School, The University of Sheffield, UK
9.45-10.00	Questions and Comments
10.00-10.45	Keynote Lecture: Advanced renewable polygeneration systems producing electricity, heat, cool and water: dynamic simulations and thermo-economic optimization. Francesco Calise , University Federico II – Naples, Italy
10.45-11.00	Questions and Comments
11.00-11.15	Coffee break
11.15-13.00	Thematic, Design-oriented Working Groups on participatory tools and roadmaps for energy futures (thematic groups are not intended for presentation of personal research results, but instead as creative brainstorming and designing sessions on hot topics characterized by special policy interest). <ul style="list-style-type: none"> • Internet of things and the energy sector in urban and industrial systems (chaired by: Raffaele Montella, Parthenope University, Napoli and Marco Molinari, KTH, Stockholm, Sweden) - Room Capri • Socio-economic variables in designing local energy policies (chaired by: Joachim Spangenberg, SERI, Sustainable Europe Research Institute, Germany and Maddalena Ripa, UAB, Barcelona, Spain) - Room Plenary • Stakeholders and energy planning (chaired by: Sylvia Lorek, SERI, Sustainable Europe Research Institute, Germany and Kateryna Pereverza, KTH, Stockholm, Sweden) - Room Ischia
13.00-14.30	Lunch
14.30-17.30	Parallel research-oriented panels and symposia. <i>Oral presentations by participants, followed by open discussion on the state of the problem, solutions, research and policy priorities. Results to be summarized by the panel coordinator (each presentation, 20 minutes; then questions and comments).</i> <p>Panel 10. Energy and industrial cleaner production – Room Plenary <i>Chaired by: Hans Schnitzer</i>, Technical University of Graz, Austria, and <i>Amalia Zucaro</i>, Federico II University, Napoli, Italy - Room Plenary</p> <ol style="list-style-type: none"> 1. Jingyan Xue, Gengyuan Liu, Marco Casazza, Mark T. Brown. LCA-based Energy Analysis of the Aluminum Production Chain in China 2. Mikkel Stein Knudsen and Jari Kaivo-Oja. Lessons from European Energy Research and Energy RIs: Towards a European Science of Research Organizations? 3. Francesco Calise, Simona Di Fraia, Adriano Macaluso, Nicola Massarotti, Laura Vanoli. Wastewater sludge dryer coupled with an ORC system powered by geothermal energy. 4. Ashraf A. M. Abdelrahim and Ali M. A. Seory. Wind turbine aerodynamics analysis 5. Krzysztof Sornek, Mariusz Filipowicz, Maciej Żołądek, Radosław Kot, Małgorzata Mikrut. Comparative analysis of selected thermoelectric generators operating with small scale heating appliances. <p>Panel 11. Energy related airborne emissions, air quality and monitoring tools – Room Chapel <i>Chaired by: Fereidoon P. Sioshansi</i>, Menlo Energy Economics, CA USA, and <i>Marco Casazza</i>, University of Naples ‘Parthenope’ - Room Chapel</p> <ol style="list-style-type: none"> 1. Massimiliano Lega, Dan Jaffe, Marco Casazza, Sergio Ulgiati. Complex source

components assessment: Criteria for 3D environmental scenario analysis in the case of an urban port area, Naples (S Italy)

2. **Xi Ji, Yixin Yao and Xianling Long**. What causes PM2.5 pollution? Cross-economy empirical analysis from socioeconomic perspective
3. **Wei Fang, Haizhong An, Xiangyun Gao, Huajiao Li, Shupe Huang**. Urban energy consumption and CO2 emissions by means of energy and system dynamics model: Taking Beijing as a case
4. **Angelo Facchini**. The urban metabolism of Lima: perspectives and policy indications for GHG emission reductions
5. **Giuseppina De Luca, Salvatore Fabozzi, Nicola Massarotti, Laura Vanoli**. Optimization criteria to evaluate the switching process from an individual heating to a district heating strategy for the city of Pompei.

Panel 12. Innovative concepts and frameworks for effective energy strategies - Room Capri

Chaired by: **Francesco Gonella**, Ca' Foscari University, Venice, Italy and **Hossein Shahrokni**, KTH, Stockholm, Sweden - Room Ischia

1. **Massimo Zucchetti and Raffaella Testoni**. Most advanced technological innovation as a part of simple solutions for the world energy problem.
2. **Corrado Giannantoni**. "Energy, Economy, Environment, Wellbeing". The Role of Formal Languages for Finding and Implementing Solutions.
3. **Enrique Ortega, José Maria Gusman-Ferraz, Mariana Oliveira, Ana Carolina Assis, Gilmar Barreto, Rosana Corazza, Paulo Fracalanza, Luciana T. de Almeida**. Energy and Wellbeing in Latin America: Political and Cultural issues
4. **Aram Mäkivierikko, Hossein Shahrokni, Olga Kordas**. Overcoming the Engagement Barrier in Demand-side Management with Social Influence
5. **Vasile Dogaru**. Segmentation of urban energy using Roegenian partial processes with borders
6. **Maddalena Ripa, Raúl Velasco-Fernández, Michele Manfroni, Mario Giampietro**. A closer look at national energy metabolism: multiscale integrated analysis of energy end uses

Panel 13. Biomass for energy and bio-based materials – Room Ischia

Chaired by: **Angelo Fierro**, Federico II University, Napoli, Italy and **Gabriella Fiorentino**, Parthenope University of Napoli, Italy - Room Capri

1. **Elvira Buonocore, Natasha Nikodinoska, Alessandro Paletto, Pier Paolo Franzese**. Life cycle assessment of wood-based bioenergy production: A case study in Northern Italy.
2. **Michelle M. Arnold, Joseph A. Tainter, Deborah Strumsky**. Productivity of Innovation in Biofuel Technologies
3. **Gabriella Fiorentino and Sergio Ulgiati**. Towards an energy efficient chemistry. An assessment of fuel and feedstock switching.
4. **Paola Di Donato, Ilaria Finore, Annarita Poli, Barbara Nicolaus, Licia Lama**. Extremophiles' relevance for the production of second generation bioethanol
5. **Ciro Florio, Rosa Anna Nastro, Fabio Flagiello, Mariagiovanna Minutillo, Domenico Pirozzi, Stefano Dumontet, Vincenzo Pasquale, Angelo Ausiello, Giuseppe Toscano, Elio Jannelli**. Biohydrogen production from Solid Phase-Microbial Fuel Cell (SPMFC) spent substrate: a preliminary study

Panel 14. Developed and Developing economies in the energy market. New actors and new strategies – Room Posillipo

Chaired by: **Tommaso Luzzati**, University of Pisa, Italy, and **Verena Helen van Zyl-Bulitta**, University of Leipzig, Germany - Room Posillipo

	<ol style="list-style-type: none"> 1. Tommaso Luzzati, Gianluca Gucciardi, Marco Orsini. A multiscale analysis of the EKC for energy use and CO₂ emissions 2. Kamia Handayani, Yoram Krozer, Tatiana Filatova. Assessment of the renewable energy expansion in the Java-Bali Islands, Indonesia 3. Silvio Cristiano and Francesco Gonella. Building within environmental boundaries, between need and choice: low-energy, frugal technologies. Learnings from vernacular solutions – a Sudanese case study. 4. John Polimeni and Raluca Iorgulescu. An Analysis of Energy Poverty in Romania 5. Kateryna Pereverza, Oleksii Pasichnyi, Olga Kordas. Strategic energy planning in different contexts: a modular approach to the participatory backcasting <p><i>(Coffee and more, available during the working sessions)</i></p>
21.00	Guided tour to underground Napoli (Tunnel Borbonico, Vico del Grottone, 4, Napoli – close to Piazza Plebiscito)

Thursday 28th September

Session Chair: Sanderine Nonhebel , Center for Energy and Environmental Sciences, University of Groningen, The Netherlands	
9.00-9.45	Keynote Lecture: Energy in wastewater treatment: consumption, benchmarking, performance assessment and improvement of efficiency Nicola Massarotti , Department of Engineering, University of Naples 'Parthenope' and Laura Vanoli , DiCEM, Università degli studi di Cassino e del Lazio Meridionale
9.45-10.00	Questions and comments
10.00-10.45	Keynote Lecture: Energy and food, between complexity and fragility. Sanderine Nonhebel , Center for Energy and Environmental Sciences, University of Groningen, The Netherlands.
10.45-11.00	Questions and comments
11.00-11.15	Coffee break
11.15-12.00	Keynote Lecture: Energy and Urban Systems: How smart, how big, how sustainable? Olga Kordas , Royal Institute of Technology, Stockholm, Sweden
12.00-12.15	Questions and comments
12.15-13.00	Summing up, Conclusions and Proposal for a final Workshop statement. Sergio Ulgiati , Parthenope University of Napoli, Italy
13.30	Farewell buffet

Annex 2. Programme of the Energizing Futures 2018 conference



PRELIMINARY PROGRAM

TUESDAY 12 JUNE

- 18:00–20:00 Pre-registration to the conference
Possibility to visit the Lenin Museum, situated in the same building
Guided tours to Lenin museum at 18:15 and 19:00 (admission fee)

WEDNESDAY 13 JUNE

- 08:30 Registration & Coffee
- 09:30 Opening of the Conference
Adjunct Professor **Jyrki Luukkanen**, Finland Futures Research Centre, University of Turku
Introduction to the Conference Theme
Adjunct Professor **Jarmo Vehmas**, Finland Futures Research Centre, University of Turku
- 10:00 Keynote speech: "Energy transition between acceptance and "nimbyism". The case of wind energy in Germany"
Senior Researcher **Maria Rosaria Di Nucci**, Environmental Policy Research Centre of the Freie Universität Berlin, Germany
- 10:30 Comment speech and discussion
Adjunct Professor **Jarmo Vehmas**, Finland Futures Research Centre, University of Turku
- 11:00 Break
- 11:30 Keynote speech: "Energy Foresight using Artificially Intelligence Futures"
Dr. **Michael Jackson** Shaping Tomorrow, United Kingdom
- 12:00 Comment speech and discussion
Professor **Sirkka Heinonen**, Finland Futures Research Centre, University of Turku
- 12:30 Lunch
- 13:30 Workshop session I
- 15:00 Coffee break
- 15:30–17:30 Workshop session II
- 19:00 Conference Dinner, Museum restaurant Valssi, Tampere



THURSDAY 14 JUNE

08:30	Morning coffee
09:00	Keynote speech: "100% Renewable Europe" Professor Olav Hohmeyer , Europa-Universität Flensburg, Germany
09:30	Comment speech and discussion Adjunct Professor Jyrki Luukkanen , Finland Futures Research Centre, University of Turku
10:00	Short break
10:15	Workshop session III
12:00	Lunch
13:00	Workshop session IV
14:30	Coffee break
15:00	Chaired Poster session
15:45	Keynote speech: "Can citizens' practices change energy systems?" Professor Eva Heiskanen , University of Helsinki
16:15	Comment speech and discussion Director Sylvia Lorek , SERI, Sustainable Europe Research Institute Germany e.V
16:45-17:00	Closing of the Conference Director Juha Kaskinen , Finland Futures Research Centre, University of Turku

See updates on the Conference website: www.futuresconference.fi/2018

The 19th International Conference of the Finland Futures Research Centre and the Finland Futures Academy, University of Turku in co-operation with European Commission's Horizon 2020 project: "European Futures of Energy Efficiency (EUFORIE)"

Venue:

The conference will be organised in Tampere Congress & Culture Centre Puistotorni

Address: Hämeenpuisto 28, 33200 Tampere.

ENERGIZING FUTURES
– Sustainable Development and Energy in Transition

13-14 June 2018, Tampere, Finland

WORKSHOP PROGRAMME

The Main Conference Programme has been published at the webpages

www.futuresconference.fi/2018

DAY 1: Wednesday 13 June

Venue:	Konserttitali	Väinö Voionmaa	Yrjö Mäkelin	Unto Kanerva	Kirjasto	Jenny Matin-aho	Eino Salmelaisen lämpiö
13:30–15:00 Session I	Theory and practice of energy and resource efficiency and sufficiency	Methods and methodology of futures research and sustainability	Renewable energy policies and sustainability in Europe and the World	Future prospects of carbon-neutral economy and its production structure and consumption patterns	Challenges and opportunities for future energy governance	Energy “fantasies” and socio-technical imaginaries	Interactive Workshop: Energy Landscapes
15:30–17:30 Session II	Theory and practice of energy and resource efficiency and sufficiency	Renewable energy policies and sustainability in Europe and the World	Future prospects of carbon-neutral economy and its production structure and consumption patterns	Challenges and opportunities for future energy governance	Energy sufficiency: Establishing a new guiding principle to reduce total energy consumption	Energy “fantasies” and socio-technical imaginaries	The Future Reinvented: Radical Energy Solutions - An Interactive Scenario and Storytelling Workshop

DAY 2: Thursday 14 June

Venue:	Konserttisali	Väinö Voionmaa	Yrjö Mäkelin	Unto Kanerva	Kirjasto	Jenny Matinaho	Eino Salmelaisen lämpiö
10:15–12:00 Session III	Special Millennium Project Session with a Keynote Speech by Jerome C. Glenn	Theory and practice of energy and resource efficiency and sufficiency	Future prospects of carbon-neutral economy and its production structure and consumption patterns	Technology foresight of sustainable energy systems	Challenges and opportunities for future energy governance	Methods and methodology of futures research and sustainability	Interactive Workshop: Futures people/crafting persona in four different urban futures
13:00–14:30 Session IV	Theory and practice of energy and resource efficiency and sufficiency	Future prospects of carbon-neutral economy and its production structure and consumption patterns	Challenges and opportunities for future energy governance	Energy transitions in the Global South	Energy foresight as a cognitive tool for action: a discussion on the design processes of scenarios and on their performativity in the political arena		Workshop on the seeds of transformation and disruption related to carbon-neutral energy systems

15:00-15:45 Chaired Poster Session at Konserttisali

WEDNESDAY 13 JUNE 2018

Session I at 13:30–15:00

Theory and practice of energy and resource efficiency and sufficiency

Time: Wednesday 13 June at 13:30–15:00

Room: Konserttisali

Chair: Adjunct Professor Jarmo Vehmas

Energy efficiency as a driver of CO2 emissions in the EU

Jarmo Vehmas, Jyrki Luukkanen & Jari Kaivo-oja

Finland Futures Research Centre, University of Turku, Finland

Energy efficiency trends in the European Union: decomposition analysis and policy implications

Gianluca Trotta

Energy Economics, University of Vaasa, Finland and Sustainable Europe Research Institute, Germany

Energy and material efficiency in chemical processes

Gabriella Fiorentino^a, A. Zucaro^a & S. Ulgiati^{a,b}

^aDepartment of Science and Technology, Parthenope University of Naples, Naples, Italy

^bSchool of Environment, Beijing Normal University, Beijing, China

Resource efficiency and circular economy. The search for appropriate indicators

A. Zucaro^a, R. Santagata^a, G. Fiorentino^a, F. Corcellii^a, S. Ulgiati^{a,b}

^a Department of Science and Technology, Parthenope University of Naples, Naples, Italy

^b School of Environment, Beijing Normal University, Beijing, China

Renewable energy policies and sustainability in Europe and the World

Time: Wednesday 13 June at 13:30–15:00

Room: Yrjö Mäkelin

Chair: Dr. Ville Luttamäki

Developing a collective vision for community led energy transition

Rosemary Byrne, Susan Byrne, Anne Bennett & Bernadette O'Regan

University of Limerick, Ireland

Public values for a low material future

Catherine Cherry & Nick Pidgeon

Cardiff University, UK

Sustainability regionalized? Arctic, energy and the elusive Social

Hanna Lempinen

Aleksanteri Institute, University of Helsinki, Finland

The external dimension of renewable energy policy – Analysing perceptions of EU-Maghreb renewable energy cooperation between 2007–2015

Sarah Kilpeläinen

University of Tampere, Finland

Future prospects of carbon-neutral economy and its production structure and consumption patterns

Time: Wednesday 13 June at 13:30–15:00

Room: Unto Kanerva

Chair: Dr. Sari Puustinen

CO2 reduction costs and benefits in transport: socio-technical scenarios

Heikki Liimatainen, Markus Pöllänen & [Riku Viri](#)

Transport Research Centre Verne, Tampere University of Technology, Finland

Electric Vehicle - prosumer policy mix for sustainable mobility - a case study in Finland

Kirsi Kotilainen^a, Matti Kojo^a, Pami Aalto^a, Jussi Valta^b & Antti Rautiainen^b

^aUniversity of Tampere, Finland

^bTampere University of Technology, Finland

The role of H2 by woody biomass gasification on reaching the Finnish Gov. renewable transport fuel targets for 2030

Anna Pääkkönen^a, Tiina Keipi^b, Henrik Tolvanen^a & Jukka Konttinen^a

^aLaboratory of Chemistry and bioengineering, Tampere University of Technology, Finland

^bValmet Technologies

The application of a national imaginary in local contexts - a comparative case study of public transportation in Linköping and Malmö

Amelia Mutter

Linköping University, Sweden

WS: Challenges and opportunities for future energy governance

Time: Wednesday 13 June at 13:30–15:00

Room: Kirjasto

Chair: Adjunct Professor Osmo Kuusi

The future of political globalisation and the nation state, and its impact on sustainable development / energy, based on an assessment of macro patterns in change

Michiel Jonker

Grant Thornton, South Africa

Competing sets of citizen visions for European futures - Implications and further potential

Petteri Repo, University & Kaisa Matschoss

University of Helsinki, Finland

Conceptualizations of Energy Community based on Place, Social Groups and Social Imaginings

John Whitton & Ioan Charnley-Parry

University of Central Lancashire, UK

Review of alternative future approaches to sustainable electricity/energy access for rural communities in Lesotho

Leboli Z. Thamae, Moeketsi Mpholo & Molibeli B. Taele

Energy Research Centre, Department of Physics & Electronics, National University of Lesotho, Roma, Lesotho

Energy “fantasies” and socio-technical imaginaries

Time: Wednesday 13 June at 13:30–15:00

Room: Jenny Matinaho

Chair: Dr. Riel Miller

Anticipating the energy transition: Hotspots and blindspots

Christopher Groves^a, Karen Henwood^a, Fiona Shirani^a, Erin Roberts^a & Nick Pidgeon^b

^aSchool of Social Sciences, Cardiff University, UK

^bSchool of Psychology, Cardiff University, UK

Japan’s pursuit of a hydrogen society: Tensions and divergences between national and regional socio-technical imaginaries

Gregory Trencher

Tohoku University, Japan

Shaping smart energy futures through the mobilization of demonstration projects

Fredrik Envall

Linköping University, Sweden

Futures Literacy and Socio-Technical Imaginaries: Integrating Novelty and Not-Doing

Riel Miller

Social and Human Sciences Sector, UNESCO, France

Methods and methodology of futures research and sustainability

Time: Wednesday 13 June at 13:30–15:00

Room: Väinö Voionmaa

Chair: Professor Rafael Popper

Common framework for the assessment and management of sustainable innovations (CASI-F): A methodology of futures research on sustainability

Rafael Popper^a, Monika Popper^b & Guillermo Velasco^c

^aVTT Technical Research Centre of Finland, Finland, ^bFutures Diamond, UK

^cUniversity of Manchester, UK

Hungary 2050 - Horizon Scanning Methodology in Practice

Éva Hideg^a, Judit Gáspár^a, Barbara Mihók^b & András Báldi^b

^aCorvinus University of Budapest, Hungary

^bCentre for Ecological Research, Hungarian Academy of Science, Hungary

Constructing comprehensive scenarios – The GHH framework for a comprehensive approach and its application in futures research

Liisa Haapanen^a, Annika Nuotiomäki^b, Risto Willamo^b, Leena Helenius^b, Charlotta Holmström^b, Vilma Sandström^b, Essi Huotari^b, Katariina Kaarre^b, Ulla Värre^b, Jenni Happonen^b & Liisa Kolehmainen^b

^aFinland Futures Research Centre, University of Turku, Finland

^bEcosystems and Environmental Research Program, University of Helsinki, Finland

Four local scripts based on four alternative images of the future

Maya Van Leemput^a, Martine Delannoy^b & Joris Wauters^b

^aApplied Futures Research Centre | Open Time, Belgium

^bForesight team Digipolis Ghent, Belgium

Interactive Workshop: Energy Landscapes

Time: Wednesday 13 June at 13:30–15:00

Room: Eino Salmelaisen lämpiö

Chair: Dr. Josefin Wangel and Maja Frögård

This workshop invites to an intense and playful exploration of energy ‘fantasies’ from timescapes and landscapes perspective, i.e. exploring energy systems as temporally, spatially, materially, and socially situated energyscapes. Through crafting alternative narratives the workshop also provides a short-version-test of how research- through-design might contribute to understanding different energyscapes.

Session II at 15:30-17:30

Theory and practice of energy and resource efficiency and sufficiency

Time: Wednesday 13 June at 15:30–17:30

Room: Konserttisali

Chair: Professor Petri Tapio

How innovation in advanced power electronics can make distributed energy storage attractive?

Iliana Ilieva^a & Sanket Puranik^a & Andreas Sumper^b

^aSmart Innovation Norway, Norway

^bUniversitat Politècnica de Catalunya, Spain

Energy and matter optimization. A prototype tool for optimization of costs and benefits

R. Santagata^a, A. Zucaro^a, G. Fiorentino^a, F. Corcelli^a, S. Ulgiati^{a,b}

^a Department of Science and Technology, Parthenope University of Naples, Naples, Italy

^b School of Environment, Beijing Normal University, Beijing, China

Coherent organizational transformation: A case study in energy conservation behavior change in the department of defense and department of education in Hawaii

Tyler W. Mongan

HAKU.global, USA

Developing a Decision Support Tool (DST) to facilitate community led energy saving strategies in Irish urban areas

Anne Bennett, Rosemary Byrne & Bernadette O'Regan

University of Limerick, Ireland

Renewable energy policies and sustainability in Europe and the World

Time: Wednesday 13 June at 15:30–17:30

Room: Väinö Voionmaa

Chair: Dr. Juha Kaskinen

The policy robustness and resilience profiles of renewable energy leaders - Analysing the promotion of solar power in Germany, wind energy in Denmark, and bioenergy in Finland

Annukka Berg^a, Kimmo Ollikka^b & Jani Lukkarinen^a

^aFinnish Environment Institute - SYKE, Finland,

^bVATT Institute for Economic Research, Finland

Redesigning transition arenas for mid-range governance and country context specificities

Sampsa Hyysalo^a, Tatu Marttila^a, Karoliina Auvinen^a, Raimo Lovio^a, Armi Temmes^a, Sofi Perikangas^a,

Allu Pyhälampi^a, Kaisa Savolainen^a, Louna Hakkarainen^a, Jani Lukkarinen^b, Paula Kivimaa^b, Mikko

Rask^c, Kaisa Matchoss^c & Janne Peljo^d

^aAalto University, Finland

^bFinnish Environment Institute, Finland

^cUniversity of Helsinki, Finland

^dThe Finnish Innovation Fund Sitra, Finland

Low Carbon Transition: Synergies, Trade-offs, and Barriers for the State of Qatar

Sayed Mohammed

Queensland University of Technology, Australia

Uncertainty analysis about the potentials of renewable energy sources in a simulation model

Ignacio de Blas Sanz, Luis Javier Miguel & Carlos de Castro

Valladolid University, Spain

Future prospects of carbon-neutral economy and its production structure and consumption patterns

Time: Wednesday 13 June at 15:30–17:30

Room: Yrjö Mäkelin

Chair: Adjunct Professor Jari Kaivo-oja

'Sustainable wellbeing' in the EU of 2050: Consumption Scenarios for transition

Tadhg O'Mahony & Jyrki Luukkanen

Finland Futures Research Centre, University of Turku, Finland

Effect of demographics on formulation and development of local economic and community plans for low carbon transitions

Susan Byrne, Rosemary Byrne & Bernadette O'Regan

University of Limerick, Ireland

Towards sustainable household consumption? - Time-series analysis of carbon footprint household consumption in Finland

Hannu Savolainen^a, Marja Salo^a, Ilmo Mäenpää^b, Ari Nissinen^a & Juha Nurmela^c

^aFinnish Environment Institute - SYKE, Finland

^bOulu Business School, University of Oulu, Finland

^cStatistics Finland, Finland

An EU-28 Trends Evaluation of Sustainable Development Goal 7 and Goal 12 of Energy Policy: Final Energy Consumption in Households Per Capita, Greenhouse Gas Emissions Intensity of Energy Consumption, Primary Energy Consumption, Final Energy Consumption and Energy Productivity

Jari Kaivo-oja, Jarmo Vehmas & Jyrki Luukkanen

Finland Futures Research Centre, University of Turku, Finland

Challenges and opportunities for future energy governance

Time: Wednesday 13 June at 15:30–17:30

Room: Unto Kanerva

Chair: Dr. Burkhard Auffermann

Dynamics and structures for emergent building energy ecosystems in Finland?

Mika Nieminen & Maria Åkerman

VTT Technical Research Centre of Finland, Finland

Representing disruption and discontinuity in energy models and scenarios

Richard Hanna

Imperial College London, UK

Envisioning low-carbon energy security

Sakari Höysniemi^a & Matti Minkkinen^b

^aAleksanteri Institute, University of Helsinki, Finland

^bFinland Futures Research Centre, University of Turku, Finland

Can agile energy institutions mitigate for future shocks?

Joni Karjalainen^a & Stephen Karekezi^b

^aFinland Futures Research Centre, University of Turku, Finland,

^bAfrepren/FWD – Energy, Environment and Development Network for Africa, Kenya

Energy “fantasies” and socio-technical imaginaries

Time: Wednesday 13 June at 15:30–17:30

Room: Jenny Matinaho

Chair: Adjunct Professor Katriina Siivonen

The art of letting go: the role of augmented reality in creating a post-consumption society

Monica Porteanu & Stan Ruecker

University of Illinois at Urbana-Champaign School of Fine and Applied Arts, Department of Art and Design, USA

Transformation of everyday culture towards sustainability in museums

Katriina Siivonen, Satu Tuittila & Marjukka Parkkinen

Finland Futures Research Centre, University of Turku, Finland

Magnetism will inaugurate the new era of humanity - Analytical trilogy applied to the Keppe motor technology

Sari Koivukangas

Faculdades Trilógicas Keppe & Pacheco, Brazil

Comparative analysis of the future-oriented educational practices in different regions: methodological issues

Tatiana Yakubovskaya

Scientific-Educational Center for Foresight-competence development, Nation Research Tomsk State University, Russia

Interactive Workshop: Energy sufficiency: Establishing a new guiding principle to reduce total energy consumption

Time: Wednesday 13 June at 15:30–17:30

Room: Kirjasto

Chair: Dr. Sylvia Lorek

Where eco-efficiency is concerned with production based on using fewer resources, eco-sufficiency follows the premise that we should limit what is produced or consumed in absolute terms. Sufficiency thus essentially implies being satisfied with less material goods than usually consumed today, and being satisfied means the no loss of quality of life is implied: needs are to be satisfied in a different way, and conspicuous consumption is to be avoided. Profound discussion on sufficiency and limits, however, are only in their beginning. To inspire debate there will be two introductory presentations. The main share of the time, however, is devoted to collect sufficiency examples from the participants' (in their respective home countries) and to brainstorm about necessary and possible policy instruments to support energy sufficiency.

Introduction to Workshop and the concept of energy sufficiency

Sylvia Lorek

SERI, Sustainable Europe Research Institute Germany e.V. & Horizon 2020 project “European Futures of Energy Efficiency (EUFORIE), Germany

Acceptability of eco-sufficient policy measures among regime members in Finland

Sanna Ahvenharju

Finland Futures Research Centre, Finland

The Future Reinvented: Radical Energy Solutions - An Interactive Scenario and Storytelling Workshop

Time: Wednesday 13 June at 15:30–17:30

Room: Eino Salmelaisen lämpiö

Chairs: Chief Operating Officer Steve Wells, Foresight Director Alexandra Whittington, Researcher April Koury, and Researcher Helena Calle – Fast Future

The workshop content will focus on energy trends and challenges, how to effectively integrate renewable energy sources in to the power system, how to improve the power system efficiency and leadership. The workshop will start by touching upon the drivers changing the future, then move through an overview of changes in the power systems. Lastly the workshop will engage participants in a process to envision scenarios we could and should formulate to successfully reinvent the future of energy.

THURSDAY 14 JUNE 2018

Session III at 10:15-12:00

Special Millennium Project Session with a Keynote Speech

New great electrification as Cultural Revolution for post-oil era - Everybody on board!

Time: Thursday 14 June at 10:15–12:00

Room: Konserttisali

Chair: Professor Sirkka Heinonen

Provocation for peer-to-peer energy culture

Sirkka Heinonen & Joni Karjalainen

Finland Futures Research Centre, University of Turku, Finland

Future Self-Actualization Economy for sustainable and energy efficient society

Keynote Speech by Jerome C. Glenn, The Millennium Project

After the special keynote by Jerome Glenn, the Director of the Millennium Project, the participants will break out in small groups to work co-creatively and to deepen the key related questions emerging from the topic. The participants will report back to the session, and will get feedback and comments from their analysis from Jerome Glenn.

Theory and practice of energy and resource efficiency and sufficiency

Time: Thursday 14 June at 10:15–12:00

Room: Väinö Voinmaa

Chair: Dr. Maria Höyssä

Saving cooperative energy: Key learnings from a cross-cutting European agro-food energy efficiency project with particular focus on Danish dairy SMVs

Mikkel Stein Knudsen^{a,b} & Kasper Bruun Knudsen^a

^aDanish Agriculture & Food Council, Denmark

^bFinland Futures Research Centre, University of Turku, Finland

Unlocking energy efficiency in the tea industry: An assessment of KTDA tea factories

Edward Mungai^a, Izael Da Silva^b & Geoffrey Ronoh^c

^aKenya, Climate Innovation Centre

^bStrathmore University, Kenya

^cStrathmore Energy Research Centre, Strathmore University, Kenya

The futures and options of milk farming

Susanna Lahnamäki-Kivelä

JAMK University of Applied Sciences, Finland

Developing visionary concepts for the water sector

Jukka Laitinen & Tarja Meristö

Laurea University of Applied Sciences, Finland and FuturesLab CoFi, Finland

Future prospects of carbon-neutral economy and its production structure and consumption patterns

Time: Thursday 14 June at 10:15–12:00

Room: Yrjö Mäkelin

Chair: Adjunct Professor Vilja Varho

Biogas enables the resource efficient use of raw materials in a circular economy

Erika Winquist, Pasi Rikkinen & Vilja Varho

Natural Resources Institute Finland - LUKE, Finland

The forerunners' business opportunities in the biogas business branch – new paths for the future?

Pasi Rikkinen, Erika Winquist & [Vilja Varho](#)

Natural Resources Institute Finland - LUKE, Finland

Waking sleeping giants; Engaging futures of the bioeconomy

Amos Taylor

Finland Futures Research Centre, University of Turku, Finland,

Woodchips as an energy source in Finland – Potential futures

Marjukka Parkkinen^a, Nina A. Nygrén^a, Marileena Mäkelä^a & Jari Lyytimäki^b

^aFinland Futures Research Centre, University of Turku, Finland

^bFinnish Environment Institute - SYKE, Finland

Technology foresight of sustainable energy systems

Time: Thursday 14 June at 10:15–12:00

Room: Unto Kanerva

Chair: Professor Markku Wilenius

Scenarios for a sustainable Scottish energy system

Michael Child, Roope Ilonen, Mihail Vavilov, Mikko Kolehmainen & Christian Breyer

Lappeenranta University of Technology, Finland

Future smart energy software houses

Petri Kettunen & Niko Mäkitalo

University of Helsinki, Finland

Sociotechnical scenarios of heating and the future of ground-source heat pumps in Finland

Ville Lauttamäki

Finland Futures Research Centre, University of Turku, Finland

What does the future hold? Study on the perceptions of the opportunities and challenges for the Finnish energy sector

Jukka-Pekka Bergman, Argyro Almpantopoulou, Päivi Karhu & Kirsimarja Blomqvist

Lappeenranta University of Technology, Finland

Challenges and opportunities for future energy governance

Time: Thursday 14 June at 10:15–12:00

Room: Kirjasto

Chair: Dr. Burkhard Auffermann

Future governance of individual energy consumption behavior change – Challenges and opportunities of bottom-up approaches

Annika Sohre & Iljana Schubert

University of Basel, Switzerland

Future Energy Governance in Anglesey, North Wales: effective stakeholder dialogue, social priorities, and perceived social impacts of new nuclear build at the community-level

Ioan Charnley-Parry & John Whitton

University of Central Lancashire, UK

Present and future challenges and opportunities for South Africa's energy governance

Andrew Lawrence

Vienna School of International Studies, Austria

Governance and/of practices? Towards a definition and outline of a practice-sensitive approach to sustainability governance

Mattijs Smits

Environmental Policy Group of Wageningen University and Research, The Netherlands

Methods and methodology of futures research and sustainability

Time: Thursday 14 June at 10:15–12:00

Room: Jenny Matinaho

Chair: Adjunct Professor Jyrki Luukkanen

Present and future of the electric energy consumption of the residential sector in Cuba: Some collective responses of its use

Reineris Montero Laurencio

Higher Metallurgical Mining Institute of Moa, Cuba

The future in sustainability transitions – Interlinkages between the multi-level perspective and futures studies

Noora Vähäkari, Ville Lauttamäki, Petri Tapio, Jarmo Vehmas & Marko Ahvenainen

Finland Futures Research Centre, University of Turku, Finland

Capacity building for renewable energy foresight in Cuban electric sector

Miguel Castro Fernández, Miriam Lourdes Filgueiras Sainz de Rozas, Miriam Vilaragut Llanes & Ariel Santos Fuentesfría

Electric Test and Research Centre (CIPEL), Facultad de Ingeniería Eléctrica, Universidad Tecnológica de La Habana "José A. Echeverría", Cujae, Cuba.

AXIOM approach in high-level expert-elicited modeling of an energy system

Juha Panula-Ontto, Jyrki Luukkanen, Jarmo Vehmas & Jari Kaivo-oja

Finland Futures Research Centre, University of Turku, Finland

Interactive Workshop: Futures people/crafting persona in four different urban futures

Time: Thursday 14 June at 10:15–12:00

Room: Eino Salmelaisen lämpiö

Chair: Foresight Specialist Joris Wauters

Facilitators:

Martine Delannoy^a, Maya Van Leemput^b & Cornelia Daheim^c

^aDigipolis Ghent, Belgium

^bApplied Futures Research Centre | Open Time, Belgium

^cFuture Impacts Consulting, Germany

Digipolis and AFRC|OT developed four scenarios on the future of the City of Ghent in 2040. The topics 'sustainability', 'social cohesion', 'impact of technology' and 'government as a facilitator' were given attention into every scenario (albeit in different forms); as they reflect our participants' visions of preferred futures.

These scenarios will be the starting point for a creative workshop in Tampere, wherein participants together develop one or more persona in the different scenarios. For the sake of usability, the references to Ghent will be replaced so the scenarios become more generic. The added value of crafting persona is this: by imagining what people potentially do, feel, aspire, dream, fear... in different futures, futures can be understood differently when compared to the more quantitative facts used in dry descriptions (e.g. 'sea level will rise 102 cm' or 'the amount of NOx in the air will have tripled by 2040' etc.). We understand that the four futures are made more real and imaginable by adding a touch of fiction and allow for a deeper engagement with the possibilities outlined in the scenarios.

Session IV at 13:00-14:30

Theory and practice of energy and resource efficiency and sufficiency

Time: Thursday 14 June at 13:00–14:30

Room: Konserttisali

Chair: Adjunct Professor Jarmo Vehmas

Insights on the plan for the adaptation to the impacts of climate change

Miki Kuribayashi

National Institute of Science and Technology Policy (NISTEP), Japan

The end-use matrix: An Innovative tool for the analysis of the energy performance of the economy

Raúl Velasco-Fernández^a & Mario Giampietro^{a,b}

^a Institut de Ciència i Tecnologia Ambientals (ICTA), Universitat Autònoma de Barcelona, Spain

^b Catalan Institution for Research and Advanced Studies - ICREA, Barcelona, Spain

A flexible sustainability indicator for companies

Jarmo Vehmas
Finland Futures Research Centre, University of Turku, Finland

University – Industry interaction: Cuban study case at the electric sector

Miguel Castro Fernández, Miriam Vilaragut Llanes, Miriam Lourdes Filgueiras Sainz de Rozas & Ariel Santos Fuentes
Electric Test and Research Centre (CIPEL), Faculty of Electrical Engineering, Technological University of Havana, Cuba

Future prospects of carbon-neutral economy and its production structure and consumption patterns

Time: Thursday 14 June at 13:00–14:30
Room: Väinö Voionmaa
Chair: Adjunct Professor Jari Kaivo-oja

Energy efficiency as an engine for development in countries characterized by energy poverty

R. Rallo^a, M. Casazza^a, S. Viglia^a, S. Ulgiati^{a,b}
^aDepartment of Science and Technology, Parthenope University of Naples, Naples, Italy
^bSchool of Environment, Beijing Normal University, Beijing, China

Cuban electricity sector development. Challenges of increased intermittent renewable production

Jyrki Luukkanen^a, Anaely Saunders^b, Irina Salazar^c, Luis Vazquez^c, Yrjö Majanne^d, Ariel Santos^e & Mika Korkeakoski^f
^aFinland Futures Research Centre, University of Turku, Finland
^bCubaEnergia, Cuba
^cUniversidad de Oriente, Santiagp de Cuba, Cuba
^dTampere University of Technology, Finland
^eUniversidad Tecnológica de La Habana “José Antonio Echeverría”, Cujae, Cuba

What is a Green economy? Case study on Cambodia and Laos on the transition towards a greener future.

Vuola, M.^a, Korkeakoski, M.^a, Vähäkari, N.^a, Dwyer, M.^b, Hogarth, N.^c, Kaivo-oja, J.^a, Luukkanen, J.^a, Chea, E.^d & Nanthavong, K.^e
^aFinland Futures Research Centre, University of Turku, Finland
^bUniversity of Colorado
^cViikki Tropical Resources Institute (VITRI), Department of Forest Sciences, University of Helsinki
^dRoyal University of Phnom Penh (RUPP)
^eNational University of Laos, Faculty of Engineering

Big Picture of Energy Efficiency: Solving a Complex Puzzle of Green Economy and Sustainability

Jari Kaivo-oja, Jyrki Luukkanen & Jarmo Vehmas
Finland Futures Research Centre, University of Turku, Finland

Challenges and opportunities for future energy governance

Time: Thursday 14 June at 13:00–14:30

Room: Yrjö Mäkelin

Chair: Professor Petri Tapio

Urban energy futures: a comparative analysis

Graeme Lang

City University of Hong Kong, Canada

Resource adequacy in EU Law – A delicate balance between market-driven solutions and state intervention

Kaisa Huhta

University of Eastern Finland, Finland

Citizens' views on the future of decentralized renewable energy

Anna Pulkka^a, Annukka Vainio^b, Riikka Paloniemi^a, Vilja Varho^b & Petri Tapio^c

^aFinnish Environment Institute - SYKE, Finland

^bNatural Resources Institute Finland - LUKE, Finland

^cFinland Futures Research Centre, University of Turku, Finland

How have framing and discourse approaches contributed to analysing energy transitions?

A critical review of empirical cases

Karoliina Isoaho & Kamilla Karhunmaa

University of Helsinki, Finland

Energy transitions in the Global South

Time: Thursday 14 June at 13:00–14:30

Room: Unto Kanerva

Chair: Dr. Juha Kaskinen

Assessing the impact of climate entrepreneurship programs in renewable energy transition:

A case study of Kenya Climate Innovation Centre (KCIC)

Edward Mungai^a, Izael Da Silva^b & Sarah Makena^a

^aKenya Climate Innovation Centre (KCIC), Kenya

^bStrathmore University, Kenya

Radical solar energy pioneers in Kenya and Tanzania

Joni Karjalainen^a & Rob Byrne^b

^aUniversity of Turku, Finland Futures Research Centre, Finland,

^bUniversity of Sussex, Science Policy Research Unit, SPRU, UK

Towards energy security and the protection of consumers' right in Bangladesh

AKM Monowar Hossain Akhand

Bangladesh Energy Regulatory Commission, Ministry of Energy and Mineral Resources, Government of Bangladesh, Dhaka, Bangladesh

Off-grid power quality and its effects on commonly used appliances: A case study of Nepal

Anna-Kaarina Seppälä, Mathias Bottheim & Stephan Baur

Technische Universität München, Germany

Energy foresight as a cognitive tool for action: a discussion on the design processes of scenarios and on their performativity in the political arena

Time: Thursday 14 June at 13:00–14:30

Room: Kirjasto

Chair: Adjunct Professor Katriina Siivonen

Integrating social dimensions in energy scenarios

Grégoire Wallenborn

Université libre de Bruxelles, Center for Studies on Sustainable Development (IGEAT), Belgium

Towards policy-relevant low-carbon scenarios: discourses analysis of the actors involved in the long-term policy process for mitigation in Wallonia (Belgium)

Aurore Fransolet

Université libre de Bruxelles, Center for Studies on Sustainable Development (IGEAT), Belgium

Epistemic communities, foresight and change in energy policy: a case for two scenario-design processes in Wallonia

Vincent Calay & Jean-Luc Guyot

Walloon Institute for Evaluation, Foresight and Statistics (IWEPS), Belgium

Interactive Workshop: Workshop on the seeds of transformation and disruption related to carbon-neutral energy systems

Time: Thursday 14 June at 13:00–14:30

Room: Eino Salmelaisen lämpiö

Chair: Dr. Mikko Dufva

The main objective of this workshop is to explore and elaborate the implications of scaling up emerging solutions for carbon-neutral energy systems. What would the world look like if the solution would be adopted widely? This includes considering the hurdles of implementation as well as political, economic, social, technological, environmental and cultural aspects. The goal is to come up with compelling narratives of change, which also take into account possible disruptions and assess the resilience of the new system.

Chaired Poster Session at 15:00-15:45

Sustainable development – international framework – overview and analysis in the context of forests and forest products – sustainable approaches with the CSR in the markets

Annika Hyytiä
University of Helsinki, Finland

Enhancing public administration – Geoenergy permissions in Finnish municipalities

Pirjo Majuri & Timo Vuorisalo
University of Turku, Finland

Relation of selected classes of uncertainty to the types of the future in foresight methodological approach – the context of a sustainable economy

Andrzej Magruk
Bialystok University of Technology, Poland

Surface modification of carbon cloth electrodes for microbial fuel cells by coating candle soot

Shih-Hang Chang, Bor-Yann Chen, Yuan-Ting Tsao & Bo-Yen Huang
National I-Lan University, Taiwan

Collaborative foresight – Insights from a renewable energy cluster in Germany

Reimo Jahn, Hans Koller & Michael A. Zeng
Helmut Schmidt University, Germany

How Do We Explore Our Futures?

Presenting a new publication of The Finnish Society for Futures Studies
Sirikka Heinonen, Osmo Kuusi & Hazel Salminen
The Finnish Society for Futures Studies, Finland

The EU project Radical Innovation Breakthrough Inquirer RIBRI

Osmo Kuusi & Marjukka Parkkinen
Finland Futures Research Centre, University of Turku, Finland

Transforming the Future: Anticipation in the 21st Century.

Riel Miller
Social and Human Sciences Sector, UNESCO, France

Annex 3. Programme of the EMP-E 2018 conference



Agenda



Energy Modelling Platform for Europe 2018 (EMP-E 2018)

Modelling clean energy pathways

September 25 – 26th, 2018

EC headquarters, Brussels 21 rue du champ de Mars – Marsveldstraat, 1050 Brussels

Day 1: Plenary sessions – September 25th: Plenary location: DG RTD, CDMA Building, SDR1 and SDR2

08:30 - 09:30	Arrival and set-up / Installation of posters, <i>Atrium</i>
09:30 - 10:00	Welcome & introduction
Speakers:	Gustav Resch (TU Wien) Patrick Van Hove (European Commission, Directorate General Research & Innovation)
10:00 - 11:30	Plenary session I: Innovation in the energy transition
Session chair:	Konstantinos Sakellaris (EC, DG Clima)
Speakers:	Paul Durrant (IRENA): 'The landscape of innovations for a renewable-powered future' Martin Junginger (Utrecht University): 'Riding down the experience curves: how technological learning may shape the energy transition' Tobias Fleiter (Fraunhofer ISI): 'Innovations for deep decarbonisation of industry'
11:30 - 12:00	Poster sneak peek I/II
12:00 - 13:30	Lunch break / Poster session, <i>Atrium</i>
13:30 - 15:00	Plenary session II: Integrated modelling of energy and resource efficiency
Session Chairs:	Dr. Kenneth Karlsson, Energy Systems Analysis group, Technical University of Denmark Dr. Rainer Friedrich, Institut für Energiewirtschaft, University of Stuttgart: 'Integrating air pollution impacts into energy modelling'
Speakers:	Dr. Floor Brouwer, Wageningen University and Research: 'The Nexus concept for a resource efficient Europe: challenges for energy modelling' Dr. Paul Durrant, Renewable Energy Innovation, IRENA: 'Collaborative efforts to improve long-term decision making in energy and the need for a cross-sectorial approach'
15:00 - 15:30	Poster sneak peek II/II
15:30 - 16:00	Coffee break, <i>Atrium</i>
16:00 - 17:30	Plenary session III: Modelling of behavioural aspects
Session Chairs:	Davide Natalini and Kat Buchmann, Global Sustainability Institute, Anglia Ruskin University
Speakers:	Nici Zimmermann (University College London): 'Pitch for System Dynamics modelling' Wander Jager (University College Groningen): 'Pitch for Agent-Based modelling' Martin Baumann (Austrian Energy Agency): 'Pitch for Linear Optimisation modelling'
17:30 - 18:00	Closing session: Miscellaneous, discussion of topics for next year
Speakers:	Jarmo Vehmas (University of Turku): 'European Futures for Energy Efficiency' Francesco Gardumi, KTH Royal Institute of Technology: 'Collaborative efforts: EMP-E Special Issue 2017 and EMP-E model matrix' Jordi Sole, CSIC: 'EMP-E 2019'
19:00 - 23:00	Conference dinner: <i>On the basis of reservations</i> Location: <i>Orangerie Terrace of the Leopold Hotel, Leopold Brussels EU, Rue du Luxembourg 35, 1050 Brussels.</i>

Day 2: Focus Groups – September 26th

08:30 - 09:00	Arrival and set-up / Installation of posters, <i>Atrium</i>
09:00 - 10:45	Focus groups: Parallel session I 1A: Open databases, <i>SDR1</i> 1B: Energy, Climate and Macroeconomic Relationships, <i>SDR2</i> 1C: Technological Learning, <i>room 044</i>
10:45 - 11:15	Coffee break, <i>Atrium</i>
11:15 - 13:00	Focus groups: Parallel session II 2A: Open Energy system Models, <i>SDR1</i> 2B: Modelling of behavioral aspects, <i>room 044</i> 2C: Infrastructure prerequisites - upcoming network challenges & internal energy market, <i>SDR2</i>
13:00 - 14:30	Lunch break / Poster session, <i>Atrium</i>
14:30 - 16:15	Focus Groups: Parallel session III 3A: Regional vs national vs Europe-wide modelling, <i>SDR1</i> 3B: Engaging with policy makers, <i>room 044</i> 3C: Energy modelling and the water-energy-food nexus conundrum, <i>SDR2</i>
16:15 - 16:30	Conclusion and wrap-up, <i>Atrium</i>



Annex 4. EUFORIE presentation slides in the EMP-E 2018 conference



EUFORIE objectives

- analyze patterns of energy and material efficiency in Europe at different temporal, spatial and functional scales, in order to understand possible interpretations, potential benefits and risks of failure in the use of the concept of efficiency to formulate policies
- understanding and enhancing the role of stakeholders in the deliberation of more effective policies in terms of energy and material resource use

Efficiency – more from less?

$$\text{Efficiency} = \text{Output} / \text{Input}$$



From Physics to Policy: Overcoming Misperceptions in Energy Policy - Agenda

- 9:00 Opening and introduction of participants
- 9:15 From energy efficiency to energy performance: The end-use matrix
Mario Giampietro, Autonomous University of Barcelona
- 10:00 Towards an online energy performance calculator, in support to policy scenarios
Sergio Ulgiati, Parthenope University of Naples
- 10:45 Break and refreshments
- 11:00 Policy options supporting efficiency and sufficiency in household energy consumption
Joachim Spangenberg, SERI Germany
- 11:45 A Flexible indicator for energy, material and environmental performance
Jarmo Vehmas, University of Turku
- 12:30 Conclusions and follow-up
- 13:00 End of the event / Lunch



Location of the venue

EU RTD/JRC
headquarters
Rue du Champ
de Mars 21
B-1050 Brussels



Turku-Southwest Finland
European Office
Avenue Palmerston 26
B-1000 Brussels



This project has been funded by the
Horizon 2020 Research and
Innovation Programme under Grant
Agreement No. 649342 EUFORIE



Thank you for your attention!

Further information:

Dr. Jarmo Vehmas
University of Turku
Finland Futures Research Centre

jarmo.vehmas@utu.fi

Tel. +358 50 342 3912

<http://www.euforie-h2020.eu>

