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Conference of Environmental
and Climate Technologies

13-15 May 2020

ONLINE

Conference Programme

Conference Topics

**Sustainability of Technology
Development**

Renewable Energy

Green Transport Systems

Biofuels and Alternative Fuels

**Smart Energy and Zero Carbon
Technologies**

Pollution Prevention

Resilience

**Heat and Power Generation, incl.
District Heating and/or Cooling**

Energy and Carbon Markets

**Energy Management, Policy and
Economics**

**Bioeconomy and Low Carbon
Development**

**Energy and Environmental
Modelling**

**System Approach Integration in
Energy Sector**

Energy Efficiency Improvement

**Resource Efficiency, Circular
Economy and Ecodesign**

Organised by:





About CONECT

CONECT – International Scientific Conference of Environmental and Climate Technologies – is organised by the Institute of Energy Systems and Environment, Riga Technical University.

Its main aim is to acquaint researchers with achievements in the area of energy systems and environmental engineering and to give the scientists, PhD students and professionals an opportunity to present and publish the results of their research.

The conference proceedings will be published in the international scientific journal “**Environmental and Climate Technologies**” and selected papers will be published as the special issue in the international scientific journal “**Environmental Management**” (ELSEVIER) and “**Journal of Cleaner Production**” (ELSEVIER). The journals are indexed in **Scopus** and **Web of Science**.

Venue

The conference will be held online from 13-15 May 2020. Conference will be held on Zoom platform. Participants will receive instructions and links for joining the conference. **Time zone - Riga (GMT+3)**.

Conference language

The official conference language is English.

Conference Registration

Wednesday, 13 May from 9:30–10:00

Thursday, 14 May from 9:30–10:00

Guidelines

Oral presentations

All presenters are kindly asked to join the Conference 10 minutes before the sessions in order to prepare for presenting and check their connection. A Technical Assistant and a Session Chair will be available online to provide the assistance.

Duration of each oral presentation in plenary session is 15-25 minutes (as scheduled in the programme) and 5 minutes for questions and discussions. Duration of each oral presentation in other sessions is 12 minutes and 3 minutes for questions and discussions.

Poster presentations

There are two poster sessions scheduled:

- SESSION I – on Wednesday, 13 May from **17:15–19:00**
- SESSION II – on Thursday, 14 May from **17:15–19:00**

Suggested template of the posters is available on CONECT web page and posters should be saved in .pdf format before presenting. Authors need to participate in the poster session to present their poster and answer questions. Each poster presenter has 3 minutes to present the research. The presentation is followed by several questions.

Scientific Committee / Editorial Board of the CONECT 2020:

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Anna Volkova, Tallinn University of Technology, Estonia
Edmunds Teirumnieks, Rezekne Academy of Technologies, Latvia
Julija Gusca, Riga Technical University, Latvia
Silvija Nora Kalnins, Riga Technical University, Latvia

WEDNESDAY, 13 MAY ONLINE

- 9.30–10.00 Registration, **Time zone - Riga (GMT+3)**
10.00–10.10 Conference opening

Plenary Session I

Moderator: Gatis Bazbauers, Riga Technical University, Latvia

- 10.10–10.40 Systemic issues with the energy transition towards carbon neutrality
Peter D. Lund, Aalto University, Finland
- 10.40–11.10 Traditional urban block moving towards positive energy block
Andra Blumberga, Riga Technical University, Latvia
- 11.10–11.40 How offshore wind can be used as multiuse platforms
Hans Christian Soerensen, SPOK ApS, Denmark
- 11.40–12.00 Break

Panel Session I: Energy Efficiency of Buildings

Moderator: Ingo Weidlich, HafenCity University, Germany



- 12.00–12.15 Solar Facade Module for Nearly Zero Energy Building. Extended Test Period.
Ruta Vanaga, Toms Mols, Andra Blumberga, Riga Technical University, Latvia
- 12.15–12.30 Relationship between energy demand, indoor thermal behaviour and temperature-related health risk concerning passive energy refurbishment interventions
Matxalen Etxebarria, Xabat Oregi, Olatz Grijalba, Rufino Hernandez, University of the Basque Country, Spain
- 12.30–12.45 Solar photovoltaic optimal tilt angles in public building
Marianna Rotilio, Valeria Annibaldi, Alessia Condemi, Federica Cucchiella, University of L'Aquila, Italy
- 12.45–13.00 Energy efficiency - indoor air quality dilemma in educational buildings: a possible solution
Liva Asere, Andra Blumberga, Riga Technical University, Latvia
- 13.00–13.15 Assessing the Performance Gap of Climate Change on Buildings Design Analytical Stages Using Future Weather Projections
Carlos Jimenez-Bescos, Ibrahim Alhindawi, University of Nottingham, United Kingdom
- 13.15–13.30 Proposal for prioritizing the retrofiting of residential buildings in energy poverty circumstances
Silvia Perez-Bezoz, Olatz Grijalba, Olatz Irulegi, University of the Basque Country, Spain
- 13.30–14.00 Break

Panel Session II: Renewable Energy Technologies

Moderator: Vladimirs Kirsanovs, Riga Technical University, Latvia



- 14.00-14.15 Sensitivity analysis of packed bed PCM thermal storage for domestic solar thermal system
Mikelis Dzikevics, Ivars Veidenbergs, Riga Technical University, Latvia
Kestutis Valancius, Vilnius Gediminas Technical University, Lithuania
- 14.15-14.30 Effect of N:P ratio on microalgae/nitrifying bacteria community in agro-digestate treatment
Valeria Mezzanotte, Francesca Marazzi, University of Milano-Bicocca, Italy
Micol Bellucci, Elena Ficara, Polytechnic University of Milan, Italy
- 14.30-14.45 Co-Firing of Natural Gas with Wood Dust Experimental Test Runs
Maximilian Klose, Girts Vigants, Edgars Vigants, Riga Technical University, Latvia
- 14.45-15.00 Evaluation criteria and benefit analysis of mixing process in anaerobic digesters of biogas plants
Fosca Conti, University of Padova, Italy
Abdessamad Saidi, Markus Goldbrunner, Technische Hochschule Ingolstadt, Germany
- 15.00-15.15 Renewable energy policies: bibliometric review and policy implications
Valeria Annibaldi, Alessia Condemi, Federica Cucchiella, Massimo Gastaldi, Marianna Rotilio, University of L'Aquila, Italy
- 15.15-15.30 Effect of Solar Tracking on the Economic Viability of a Large-Scale PV Power Plant
Ephraim Bonah Agyekum, Ural Federal University, Russia
Bright Kwame Afornu, Michael Nii Sanka Ansah, Tomsk Polytechnic University, Russia
- 15.30-15.45 Break

Panel Session III: Modelling Tools

Moderator: Dace Lauka, Riga Technical University, Latvia



- 15.45-16.00 Adaptation of TIMES model structure to industrial, commercial and household sectors
Dzintars Jaunzems Signe Allena-Ozolins, Ieva Pakere, Ritvars Freimanis, Andra Blumberga, Gatis Bazbauers, Riga Technical University, Latvia
- 16.00-16.15 Spatial Economic Modeling of the Waste-driven Agricultural Biogas in Lubelskie Region, Poland
Andrea Bartoli, Nosra Ben Fradj, Malgorzata Galczynska, Anna Jedrejek, Kesheng Shu, Institute of Soil Science and Plant Cultivation – State Research Institute, Poland
Stelios Rozakis, Institute of Soil Science and Plant Cultivation – State Research Institute, Poland; Technical University of Crete, Greece
- 16.15-16.30 Environmental Assessment of bio-oil transformation from thistle in the Italian context: an LCA study
Francesco Romagnoli, Riga Technical University, Latvia
Samuele Tortoioli, Luisa Paolotti, Antonio Boggia, Lucia Rocchi, University of Perugia, Italy

- 16.30–16.45 The efficiency of waste sector in Italy: an application by DEA
Agnese Rapposelli, University of Chieti-Pescara, Italy
Massimo Gastaldi, University of L’Aquila, Italy
Ginevra Virginia Lombardi, University of Firenze, Italy
Giulia Romano, University of Pisa, Italy
- 16.45–17.00 Inverse Modeling of Climate Adaptive Building Shells
Toms Mols, Andra Blumberga, Riga Technical University, Latvia
- 17.00-17.15 Break
- 17.15–19.00 **Poster session I**
Moderator: Agris Kamenders, Riga Technical University, Latvia

THURSDAY, 14 MAY *ONLINE*

- 9.30–10.00 Registration, **Time zone - Riga (GMT+3)**
- 10.00–10.10 Conclusions about 1st day sessions – Best paper announcement

Plenary Session II

Moderator: Andra Blumberga, Riga Technical University, Latvia

- 10.10-10.30 Modelling transition to low carbon energy systems
Gatis Bazbauers, Riga Technical University, Latvia
- 10.30-10.50 District cooling in Tallinn: perspectives and solutions
Igor Krupenski, HeatConsult OÜ; Tallinn University of Technology, Estonia
- 10.50-11.10 Getting the most out of the plant and animal based secondary bioresources
Denis Baranenko, ITMO University, Russia
- 11.10-11.30 Self-healing Concrete for Durable and Sustainable Structures and Infrastructure
Ruben Paul Borg, University of Malta, Malta
- 11.30-11.45 Break

Panel Session IV: Heat and Power Generation including District Heating and Cooling

Moderator: Dagnija Blumberga, Riga Technical University, Latvia



- 11.45-12.00 Methodology for application of district heating climate benchmark
Ieva Pakere, Dace Lauka, Dagnija Blumberga, Riga Technical University, Latvia
- 12.00-12.15 Factors affecting the improvement of district heating. Case studies of Estonia and Serbia
Nebojsa Lukic, Novak Nikolic, Aleksandar Nesovic, University of Kragujevac, Serbia
Pavel Ruseljuk, AS Narva Soojusvork, Estonia

- Anna Volkova, Kertu Lepiksaar, Andres Siirde, Tallinn University of Technology, Estonia
- 12.15-12.30 The effect of the District heating return temperature reduction on flue gas condenser efficiency
Kertu Lepiksaar, Anna Volkova, Andres Siirde, Tallinn University of Technology, Estonia
Pavel Ruseljuk, AS Narva Soojusvork, Estonia
- 12.30-12.45 Applicable Predictive Maintenance Diagnosis Methods in Service-Life Prediction of District Heating Pipes
Pakdad Pourbozorgi Langroudi, Ingo Weidlich, HafenCity University Hamburg, Germany
- 12.45-13.00 Integrated dimensioning and operation of district heating and cooling plants for a new development area
Henrik Pieper, Anna Volkova, Tallinn University of Technology, Estonia
Torben Ommen, Brian Elmegaard, Wiebke Brix Markussen, Technical University of Denmark, Denmark
- 13.00-13.30 Break

Panel Session V: Energy Efficiency and Energy Systems for Sustainable Future

Moderator: Anna Volkova, Tallinn University of Technology, Estonia



- 13.30-13.45 Implementation of certified Energy management system in municipality. Case study.
Anda Jekabsons, Agris Kamenders, Marika Rosa, Riga Technical University, Latvia
- 13.45-14.00 Top energy saver of the year: Results of an energy saving competition in public buildings
Jan Kaselofsky, Ralf Schuele, Wuppertal Institut, Germany
Marika Rosa, Toms Prodanuks, Anda Jekabsons, Riga Technical University, Latvia
Edina Vadovics, Kristof Vadovics, GreenDependent Institute, Hungary
Thekla Heinel, B&SU, Germany
- 14.00-14.15 Time value of energy as a low cost energy efficiency technique
Aiman Albatayneh, Obieda Abueid, Mustafa Jaradat, German Jordanian University, Jordan
Dariusz Alterman, The University of Newcastle, Australia
- 14.15-14.30 Influence of wind power production on electricity market price
Gunars Valdmanis, Gatis Bazbauers, Riga Technical University, Latvia
- 14.30-14.45 Blockchain and Smart Contracts for LBG Maritime Energy Contracting and Value Chain Management: An innovative Green Shipping Business Model for Regional Seaports
Robert Philipp, Wismar Business School, Hochschule Wismar, University of Applied Sciences: Technology, Business and Design, Germany
- 14.45-15.00 Break

Panel Session VI: Bioeconomy

Moderator: Francesco Romagnoli, Riga Technical University, Latvia

- 15.00-15.15 Education for advancing the implementation of the Bioeconomy goals: an analysis of Master study programmes in Bioeconomy
Jelena Pubule, Andra Blumberga, Antra Kalnbalkite, Dagnija Blumberga, Riga Technical University, Latvia
- 15.15-15.30 Circular economy approaches in health care waste management
Julija Gusca, Silvija-Nora Kalnins, Riga Technical University, Latvia
- 15.30-15.45 Effect of Combining Different Substrates and Inoculum Sources on Bioelectricity Generation and COD Removal in A Two-chambered Microbial Fuel Cell: A Preliminary Investigation
Michael Daramola, Joshua Marks, Johan Kirkel, Patrick Sekoai, University of the Witwatersrand, South Africa
Christopher Enweremadu, University of South Africa, South Africa
- 15.45-16.00 Waste cooking oil as substrate for single cell protein production by *Yarrowia lipolytica*
Kriss Spalvins, Zane Geiba, Dagnija Blumberga, Riga Technical University, Latvia
- 16.00-16.15 Cultivation of algae polyculture in municipal wastewater with CO₂ supply
Lara Podkuiko, Timo Kikas, Estonian University of Life Sciences, Estonia
Inga Lips, Mari-Liis Kasemets, Tallinn University of Technology, Estonia
- 16.15-16.30 Biochar from Waste Derived Fuels as Low-Cost Adsorbent for Waste Hydrocarbons
Dmitrijs Porsnovs, Linda Ansone-Bertina, Jorens Kviesis, Maris Klavins, University of Latvia, Latvia
- 16.30-16.45 Bioeconomy investments: market considerations
Lauma Zihare, Dagnija Blumberga, Riga Technical University, Latvia
- 16.45-17.00 Potential of circular design in Estonian SMEs and their capacity to push it
Markus Vihma, Estonian Academy of Arts, Estonia
Harri Moora, Stockholm Environment Institute Tallinn Center, Estonia
- 17.00-17.15 Break
- 17.15–19.00 **Poster session II**
Moderator: Dzintars Jaunzems, Riga Technical University, Latvia

FRIDAY, 15 MAY ONLINE

Discussion, additional registration is required

Moderator: Reinis Aboltins, Riga Technical University, Latvia

- 10:00-10:30 System dynamics model of COVID-19, different scenarios
Andra Blumberga, Riga Technical University, Latvia
- 10:30-12:00 Discussion - Restart and future development
Andra Blumberga, Gatis Bazbauers and all participants

Poster session I – 13 MAY		
P1.1	Aiman Albatayneh , Mohammad N. Assaf, Mustafa Jaradat, Dariusz Alterman	The Effectiveness of Infiltration against Roof Insulation aimed at Low Income Housing Retrofits for Different Climate Zones in Jordan
P1.2	Xabat Oregi , Inigo Rodriguez Vidal, Jorge Otaegi	Thermal comfort evaluation of offices integrated into an industrial building. Case study of the Basque Country
P1.3	Julia Guzeyeva , Aleksey Safronov, Jevgeniy Begens, Ansis Mezulis	The Innovative Technology of Hydraulic Compression and Boosting for Filling the Vehicles and Storage Systems with Natural Gas and Biomethane
P1.4	Ekaterina Myasnikova , Oleg Loktionov, Olga Kondrateva,	Analysis of the climatic factors influence on the reliability of energy facilities
P1.5	Ivars Jankovskis , Ruta Vanaga, Ritvars Freimanis, Juris Antuzs, Andra Blumberga	Positive energy block - smart energy systems
P1.6	Carlos Jimenez-Bescos , Xabat Oregi	Evaluating the Effect of different Base Temperatures to Calculate Degree Days
P1.7	Linda Ievina , Beate Zlaugotne, Reinis Azis, Dagnija Blumberga	GHG Performance Evaluation in Green Deal Context
P1.8	Sandra Sakalauskaite , Neringa Kuliesiene, Deimante Galalyte, Simona Tuckute, Marius Urbonavicius, Sarunas Varnagiris, Rimantas Daugelavicius, Martynas Lelis	Potential and risk of the visible light assisted photocatalytical treatment of PRD1 and T4 bacteriophage mixtures
P1.9	Ieva Siksnane , Ainis Lagzdins	Temporal trends in nitrogen concentrations and losses from agricultural monitoring sites in Latvia
P1.10	Oleg Bazhenov , Larissa Bozhko, Irina Turgel	The Evaluation Methodology for the Ecological and Economic Potential of the Metallurgical Cluster
P1.11	Neringa Kuliesiene , Sandra Sakalauskaite, Simona Tuckute, Marius Urbonavicius, Sarunas Varnagiris, Rimantas Daugelavicius, Martynas Lelis	TiO ₂ application for the photocatalytical inactivation of <i>S. enterica</i> , <i>E. coli</i> and <i>M. luteus</i> bacteria mixtures
P1.12	Oskars Svedovs , Mikelis Dzikevics, Vladimirs Kirsanovs	Methods for Determining the Performance and Efficiency Parameters of the Flue-gas Condenser Sedimentation Tank
P1.13	Janis Dumpis , Ainis Lagzdins	Methodology for bathymetric mapping using open-source software
P1.14	Matiss Maltisovs , Dmitrijs Pikulins	Next generation of switchable glass – bistable smectic-A liquid crystal display
P1.15	Arturs Krastins , Ruta Vanaga, Ritvars Freimanis, Juris Antuzs, Andra Blumberga	Positive energy block - RES and building energy efficiency potential in Riga historic centre block
P1.16	Aleksandre Kipiani , Mantas Pranskevicius Vladimirs Kirsanovs	Research and evaluation of pollution with particulate matter in the air of public buildings

P1.17	Francesco Romagnoli , Simone Peralacci, Lucia Rocchi, Antonio Boggia, Luisa Paolotti	Agricultural co-product management: an LCA perspective on the use of safflower oilcake from bio-oil production in Umbria Region (Italy)
P1.18	Merlin Raud , Timo Kikas	Perennial grasses as a substrate for bioethanol production
P1.19	Gatis Gaumigs , Larissa Bozhko, Irina Turgel, Eduard Biserov, Abdrakhman Naizabekov	Priorities of the state environmental policy of Russia and Kazakhstan: global agenda and regional projection
P1.20	Beate Zlaugotne , Lauma Zihare, Antra Kalnbalkite, Lauma Balode, Dagnija Blumberga	Multi-criteria decision analysis methods comparison
P1.21	Agate Veipa , Vladimirs Kirsanovs, Aiga Barisa	Techno-economical analysis of biofuel plants producing biofuels using Fisher Tropsch synthesis
P1.22	Kamel Haine , Dagnija Blumberga	Solar electricity over three continents
P1.23	Edgars Kudurs , Dagnija Blumberga	Are the industries open for renewable energy
P1.24	Evita Biezmane , Ruta Vanaga, Ritvars Freimanis, Juris Antuzs, Andra Blumberga	Positive energy block - life cycle assesment. Literature review
P1.25	Ketija Bumbiere , Agita Gancone, Vladimirs Kirsanovs, Jelena Pubule, Saulius Vasarevicius, Dagnija Blumberga	Ranking of Bioresources for Biogas Production
P1.26	Karlis Dreimanis , Zane Indzere, Dagnija Blumberga, Vaida Sereviciene	Multicriteria evaluation of efficiency in fish processing
P1.27	Francesco Romagnoli , Alessandro Thedy, Baiba Ievina	Life Cycle Assessment of an innovative open raceway pond for microalgae cultivation in the Baltic context: results from SMORP project
P1.28	Fabian Diaz , Ieva Pakere, Dagnija Blumberga, Francesco Romagnoli	Life Cycle Assessment for Pilot Energy Strategy towards the transition to Low Temperature DH: case studies of Gulbene and Ilmajoki
P1.29	Kristiana Dolge , Anna Kubule, Oskars Krievs, Dagnija Blumberga	Evaluation Methodology of Industrial Energy Efficiency Index
P1.30	Liga Rozentale , Gjermund Mo, Armands Gravelsins, Claudio Rochas, Dagnija Blumberga	System dynamics modeling of railway electrification in Latvia
P1.31	Reinis Aboltins , Dzintars Jaunzems, Jelena Pubule, Dagnija Blumberga	Analysis of influence of National Energy and Climate plan policies on the energy user through using hugs, carrot and stick approach
P1.32	Vivita Priediece , Vladimirs Kirsanovs, Toms Prodanuks, Ivars Veidenbergs, Dagnija Blumberga	Treatment of particulate matter pollution: people attitude and readiness to act
P1.33	Roberts Kakis , Dagnija Blumberga, Girts Vigants	Environmental performance of co-firing idea. Life cycle assessment

Poster session II – 14 MAY		
P2.1	Baiba Ievina , Francesco Romagnoli	The potential of Chlorella species as a feedstock for bioenergy production: A review
P2.2	Edgars Kavals , Silvija Nora Kalnins, Julija Gusca	Life cycle assessment based approach to forecast the response of Waste management policy targets to the environmental protection
P2.3	Katlin Pitman , Jaak Nerut, Merlin Raud, Timo Kikas	Characterisation of electrochemical sensor-array for utilisation in construction of BOD bioelectronic tongue
P2.4	Dace Arina , Ruta Bendere, Gintaras Denafas, Janis Kalnacs, Mait Kriipsalu	Characterization of refuse derived fuel production from municipal solid waste: the case studies in Baltic States
P2.5	Dzintra Slisane , Gatis Gaumigs, Dace Lauka, Dagnija Blumberga	Energy Sustainability Index in Statistical Regions of Latvia
P2.6	Juri Olt , Viacheslav V. Maksarov, Kaarel Soots, Tonu Leemet	Technology for the Production of Environment Friendly Tableware
P2.7	Maksims Feofilovs , Francesco Romagnoli	Assessment of urban resilience to natural disasters with a System dynamics tool: Case study of Latvian municipality
P2.8	Ivan Postnikov	Application of the Methods for Comprehensive Reliability Analysis of District Heating systems
P2.9	Zane Indzere , Dagnija Blumberga	Fish Processing Efficiency Ranking
P2.10	Agija Stanke , Valdis Kampars, Kristine Lazdovica	Synthesis, characterization and catalytical effects of Fe contents on pyrolysis of cellulose with Fe ₂ O ₃ /SBA-15 catalysts
P2.11	Tamara Grizane , Dagnija Blumberga	Recreation Fishing Impact to Climate Changes. Case of Latvia
P2.12	Ivan Postnikov , Valery Stennikov, Olga Edeleva, Tatyana Dobrovolskaya	Methodology of Indicative Analysis to Determine the Territories for Implementation of the Energy Saving Strategy by Example of Eastern Siberia Region
P2.13	Rima Dervinyte , Dainius Paliulis, Dagnija Blumberga	Application of Egg Shells to the Removal of Lead From Contaminated Water
P2.14	Indra Muizniece , Anna Kubule, Lauma Zihare, Dagnija Blumberga	Difference between bibliometric and grey data. Transdisciplinary bioeconomy research
P2.15	Pavel Zharkov , Alexander Kler, Yulia Potanina, Andrey Marinchenko, Nikolai Epishkin	The Effect of the Carbon Tax Value on the Optimal Parameters and Characteristics of Coal Power Plants
P2.16	Robert Ruzickij , Tomas Astrauskas, Raimondas Grubliauskas, Sarma Valtere	Sound absorption properties evaluation and analysis of recycled tyre textile fibre waste
P2.17	Inese Pelsa , Jana Simanovska, Nora Kibilda-Kinna	When green is really green? Case study in Latvia on the update of green public procurement for supply of the food products
P2.18	Lasma Akulova , Anna Bukina, Zanna Martinsone	Environmental management challenges and possible solutions regarding chemical pollution caused by households in Latvia: a qualitative pilot study

P2.19	Ilze Vamza , Karlis Valters, Dagnija Blumberga	Multi criteria analysis of lignocellulose substrate pre-treatment
P2.20	Pavel Zharkov , Elina Tyurina, Aleksandr Mednikov	Clean coal technologies for electricity and synthetic liquid fuel production for distributed generation
P2.21	Karina Balina , Kaspars Ivanovs, Francesco Romagnoli, Dagnija Blumberga	Biorefinery Potential and Extraction Technologies for Seaweed-based systems: a review for Easter Baltic seaweeds
P2.22	Sintija Kalna , Dace Lauka, Dagnija Blumberga	Blind spots of energy transition policy - case study of Latvia
P2.23	Egle Dobilaite , Rasa Vaiskunaite, Julija Gusca	Research and Evaluation of Biodegradability of Compostable Bags for Food Waste
P2.24	Olga Piterina	Comparison of regional carbon footprints of multinational HSR projects: the case of the Rail Baltica project
P2.25	Ivonna Berzina , Ieva Pakere, Dace Lauka, Dagnija Blumberga	Cooling systems. Potential in Latvia
P2.26	Jorge David Bolanos Calvo , Marina Valentukeviciene, Karlis Valters	Effect of selected pharmaceuticals in wastewater quality
P2.27	Zamira Kazizova , Saulius Vasarevicius, Dace Lauka	Evaluation of Municipal Solid Waste Incineration fly ash composition
P2.28	Kriss Spalvins , Zane Geiba, Dagnija Blumberga	Single cell oil production from potato processing and dairy residues by <i>Labyrinthulomyces</i>
P2.29	Tomas Astrauskas , Raimondas Grubliauskas	Method to recycle paper sludge waste: production of panels for sound absorption applications
P2.30	Andrea Jonathan Pagano , Francesco Romagnoli, Emanuele Vannucci	Insurance against natural hazards: critical elements on the risk premium evaluation in the Italian context
P2.31	Zane Indzere , Kevin D. Manzano Martinez, Tereza Bezrucko, Marta Delle, Ivars Veidenbergs, Dagnija Blumberga	Energy Efficiency Improvement in Thawing
P2.32	Andrea Jonathan Pagano , Francesco Romagnoli, Emanuele Vannucci	Quantitative and financial aspects of Resilience bonds in the context of recursive insurance contracts. A cost benefit analysis
P2.33	Rudite Vesere , Silvija Nora Kalnins, Dagnija Blumberga	Circular Economy Analysis. Ranking of Energy Resources from Waste
P2.34	Elina Racko , Dagnija Blumberga, Kriss Spalvins	Ranking of By-products for Single Cell Oil Production. Case in Latvia