



International Society for Industrial Ecology

Taking Stock of Industrial Ecology

8th Biennial Conference of the
International Society for Industrial Ecology
University of Surrey, Guildford
7th - 10th July 2015

Programme of Presentations and Posters



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Tuesday, 7th July

TIME	SESSION	ROOM
09:00 - 11:00	PLENARY <i>Chair: Roland Clift, Co-Chair: Chris France</i>	Austin Pearce 1-4
09:00 - 09:15	Welcome to Surrey <i>Roland Clift and Richard Murphy</i>	
09:15 - 09:45	The Price of Everything and the Value of Nothing: Rethinking Prosperity in the Industrial Ecology <i>Tim Jackson</i>	
09:45 - 10:05	Industrial Ecology's First Decade <i>Tom Graedel</i>	
10:05 - 10:25	Industrial Symbiosis: Beyond Kalundborg <i>Marian Chertow</i>	
10:25 - 11:00	Panel Discussion A: Industrial Experiences of Industrial Ecology <i>Chair: Chris France</i>	Austin Pearce 1-2
	The Role of Science in Shaping Sustainable Business: Unilever Case Study <i>Sarah Sim (Unilever)</i>	
	Practical Implications of Product-based Environmental Legislation <i>Kieren Mayers (Sony)</i>	
	Circular Economy @ HP <i>Kirstie McIntyre (HP)</i>	
10:25 - 11:00	Panel Discussion B: Policy Applications of Industrial Ecology <i>Chair: Richard Murphy</i>	Austin Pearce 3-4
	Industrial Ecology and Portugal's National Waste Plans <i>Paulo Ferrão (IST)</i>	
	The Industrial Ecology of the Automobile <i>Roland Geyer (UC Santa Barbara)</i>	
	Thermodynamics and the price of carbon <i>Malcolm Bailey (Link2Energy)</i>	

11:00 - 11:30	COFFEE	Lecture Theatre Concourse and University Hall
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11:30 - 12:30	A1: Built Environment and Low Carbon Development I	03MS01
11:30	Plug-in vs. Wireless Charging: Enhancing Sustainability of Urban Electric Bus Systems <i>Zicheng Bi</i>	
11:45	Autonomous Vehicles: A New Solution to the Last Mile Problem? <i>Gregory A. Keoleian</i>	
12:00	Assessing the Environmental Benefits of Ride Sharing in Cities <i>Hua Cai</i>	
12:15	Life cycle assessment of focus BEV lithium-ion battery <i>Hyung Chul Kim</i>	
11:30 - 12:30	A2: The Role of Trade in Global Resource Use and Emissions	Lecture Theatre E
11:30	Construction of global nitrogen footprint model <i>Azusa Oita</i>	
11:45	WTO's Environmental Goods Agreement (EGA) and criteria for nomination and assessment of goods <i>John E Hermansen</i>	

Tuesday 7th July

TIME	SESSION	ROOM
12:00	Supply risk footprints of critical metals focusing on mining and trade risks: the case of Japan <i>Keisuke Nansai</i>	
11:30 - 12:30	A3: Critical Materials, Waste and Recycling I	Lecture Theatre F
11:30	Optimization of resource recovery from MSW by combining source separation and central sorting – a case study for Funen, Denmark <i>Ciprian Cimpan</i>	
11:45	Analytical framework for the integrated assessment of reusing WEEE <i>Nadja Von Gries</i>	
12:00	Technological, environmental and social aspects of an innovative recycling process of post-consumer absorbent hygiene products <i>Umberto Arena</i>	
12:15	Losses and efficiencies of phosphorus on a national level – a comparison of European substance flow analyses <i>Michael Jedelhauser</i>	
11:30 - 12:30	A4: Case Studies I	Griffiths Theatre
11:30	Optimizing Eco-Efficiency Across the Procurement Portfolio <i>Mo Li</i>	
11:45	An ecological assessment of food waste composting using a hybrid life cycle assessment <i>Ramy Salemdeeb</i>	
12:00	Methane production from municipal solid waste: a life cycle assessment approach <i>Carla Tagliaferri</i>	
12:15	Integrated policies to promote sustainable use of steel slag for construction – a consequential life cycle embodied energy and greenhouse gas emission perspective <i>Harn Wei Kua</i>	
11:30 - 12:30	A5: Urban Mining I	Lecture Theatre L
11:30	Landfill mining: On the economic conditions and challenges for implementation <i>Niclas Svensson</i>	
11:45	Mapping of Anthropogenic Stocks in Germany – New Perspectives for a Sound Resource, Waste and Recycling Policy <i>Felix Mueller</i>	
12:00	Weight of Cities -Material Stock and Flow Analysis based on spatial database overtime- <i>Hiroki Tanikawa</i>	
11:30 - 12:30	A6: Structure and Performance of Symbiotic Systems	Lecture Theatre M
11:30	Beyond collaboration: viability in symbiotic supply systems <i>Bart van Hoof</i>	
11:45	Understanding Structure of Industrial Symbiosis Networks and its Implications for Resilience and Sustainability <i>Vikas Khanna</i>	
12:00	Using agent-based modeling of facilitated industrial symbiosis to explore strategic selection of projects <i>Julien Beaulieu</i>	
12:15	Industrial Symbiosis for Bio-based Economies <i>Murat Mirata</i>	
11:30 - 12:30	A7: EEIO/Social Perspectives	Austin Pearce 1-2
11:30	Assessing the role of higher education in global environmental sustainability through environmentally-extended input-output and integrated assessment modelling <i>Tim Lang</i>	
11:45	Extended actor based LCA – a method that includes external actors <i>Birgit Brunklaus</i>	

Tuesday 7th July

TIME	SESSION	ROOM
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11:30 - 12:30	A8: LCA	Austin Pearce 3-4
11:30	Systematic evaluation of life cycle impact assessment methods <i>Valentina Prado Lopez</i>	
11:45	The Life Cycle of Life Cycle Assessment Data <i>Christopher Davis</i>	

12:30 – 13:30	LUNCH	Lecture Theatre Concourse and University Hall
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13:30 - 15:00	B1: Urban Metabolism and Environmental Footprints of Cities I	03MS01
13:30	A typological classification of the building stock: Lisbon case study <i>Claudia Sousa Monteiro</i>	
13:45	Using Life Cycle Assessment to Evaluate Green and Grey Combined Sewer Overflow Control Strategies <i>Sabrina Spatari</i>	
14:00	A Model Faces Reality: Energy Demand of Swiss Residential Buildings <i>Andreas Froemelt</i>	
14:15	Co-benefits of Carbon Mitigation: Impact on PM2.5 Emissions and Water Consumption in a Chinese City <i>Andrew Fang</i>	
14:30	Natural Gas as a Bridge to Distributed Residential Building and Vehicle Energy Systems <i>Dong-Yeon Lee</i>	
13:30 - 15:00	B2: Consumers and Lifestyles I	Lecture Theatre E
13:30	Consumption outpaces efficiency in driving global carbon emissions <i>Arunima Malik</i>	
13:45	Is family seasonal consumption good for the environment? Unraveling the monthly local and international trade using a MRIO <i>Maria-Angeles Tobarra-Gomez</i>	
14:00	Influence of Environmental Awareness and Trust in Environmental Information on Consumers' Product Selection <i>Emi Kikuchi-Uehara</i>	
14:15	Exploring ownership and attachment in the circular economy <i>Weston Baxter</i>	
14:30	LCA-based methodology for setting target for sustainable consumption <i>Valentina Castellani</i>	
13:30 - 15:00	B3: Linking Socio-economic Metabolism and Climate Change	Lecture Theatre F
13:30	Retrofit rethink: material flows for housing in african cities <i>Catherine de Wolf</i>	
13:45	Extreme Heat Vulnerability and Urban Energy Use <i>Mikhail Chester</i>	
14:00	Environmental and economic benefits of biochar application for resource management <i>Ghasideh Pourhashem</i>	
14:15	UK climate change strategies in cities and the LAYERS of cobalt supplies <i>Oliver Heidrich</i>	

TIME	SESSION	ROOM
14:30	Hybrid (survey and non-survey) methods for the construction of subnational input-output tables with insights for their construction for Deltaic environments <i>Ignacio Cazcarro</i>	
13:30 - 15:00	B4: Uncertainty in Life Cycle Sustainability Assessment	Griffiths Theatre
13:30	Combining uncertainty and global sensitivity analysis to improve the trust in impact assessment models <i>Jeroen Guinée</i>	
13:45	Quantification of uncertainty in the LCA of biogas systems - what is big and what is small? <i>Roosbeh Feiz</i>	
14:00	Performance of greenhouse gas equivalency metrics under an uncertain climate future <i>Morgan R. Edwards</i>	
14:15	Improving the Validity of Life Cycle Assessments: Lessons from a Meta-Analysis of Potable Water Supply Systems <i>Noa Meron</i>	
14:30	A statistical approach to deal with uncertainty due to the choice of allocation methods in LCA <i>Jeroen Guinée</i>	
13:30 - 15:00	B5: Method and Database Development in EEIO II	Lecture Theatre L
13:30	A Physical Input-Output Table Covering Global Agriculture and Forestry using FAOSTAT <i>Martin Bruckner</i>	
13:45	Material Flow Accounting and Environmentally Extended Input Output: preventive strategies to avoid Sector Aggregation Bias <i>Pablo Piñero</i>	
14:00	Disaggregated monetary IOT as an alternative to physical IOT <i>Samuel Cooper</i>	
14:15	EEIO model with internalized capital consumption <i>Ilmo Mäenpää</i>	
14:30	Developing an electricity-focused Multi-Regional Input-Output model for LCA and energy policy evaluation <i>Jorge Vendries</i>	
13:30 - 15:00	B6: Theories, Models and Mechanisms of Symbiotic Systems and Eco-Industrial Development	Lecture Theatre M
13:30	Towards a co-evolutionary framework to uncover sustainable transition of eco-industrial parks <i>Lei Shi</i>	
13:45	Industrial Symbiosis Dynamics: Empirical Studies of Three Different Dynamic Types <i>Marian Chertow</i>	
14:00	Multilevel Modeling of Industrial Ecosystem: Method and Application in YETDZ <i>Yang Li</i>	
14:15	Formalizing Universal Darwinism in IE <i>Igor Nikolic</i>	
14:30	Industrial Symbiosis Dynamics: A Comparative Framework to Move from Divergent Experiences to Joint Understanding <i>Wouter Spekkink</i>	
13:30 - 15:00	B7: IE in Developing Countries I	Austin Pearce 1-2
13:30	Closing the loop - translating best practice across regional cultures <i>Jo Williams</i>	
13:45	Using Material Flow Analysis to promote Regional Green Economy Strategies in Vietnam <i>Georg Schiller</i>	
14:00	Integrating Cleaner Production and Industrial Ecology Education in Latin America <i>Weslyne Ashton</i>	
14:15	A best practice of industrial ecology in the garment industry in China : a dashboard for small firms <i>Jean-Yves Courtonne</i>	

Tuesday 7th July

TIME	SESSION	ROOM
14:30	Trade and resultant environmental problems in Small Island States: a case study of mercury in Mauritius <i>Vimi Dookhun</i>	
13:30 - 15:00	B8: Complex Systems and Resilience	Austin Pearce 3-4
13:30	Resilience in complex systems: a GIS analysis of extreme events impact on infrastructure networks <i>Sybil Derrible</i>	
13:45	Resilience, resource constraints and the neodymium magnet supply chain <i>Benjamin Sprecher</i>	
14:00	Steering a Complex Adaptive System: A complexity management methodology applied to an industrial ecosystem in the Humber Region, UK <i>Alexandra Penn</i>	
14:15	Interconnectedness and Interdependencies of Critical Infrastructures: Implications for Resilience in the U.S. Economy <i>Vikas Khanna</i>	
14:30	Core, specified, and general resilience strategies for urban areas <i>Mariko Uda</i>	

Wednesday, 8th July

TIME	SESSION	ROOM
09:00 – 10:45	PLENARY <i>Chair: Jacquetta Lee, Co-Chair: Phil Holmes</i>	Austin Pearce 1-4
09:00 - 09:20	Prospective Models of Society's Future Metabolism: What Industrial Ecology has to Contribute <i>Stefan Pauliuk</i>	
09:20 - 09:40	Intercity Carbon Footprint Networks <i>Thomas Wiedmann</i>	
09:40 - 10:00	Kicking the Habit? Understanding the Drivers of Household Carbon Dependency <i>Angela Druckman</i>	
10:00 - 10:20	Past, Present and Future of Life Cycle Sustainability Assessment <i>Jeroen Guinée</i>	
10:20 - 10:40	Material Flow Analysis and Waste Management <i>Yuichi Moriguchi and Seiji Hashimoto</i>	

10:45 - 11:15	COFFEE	Lecture Theatre Concourse and University Hall
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11:15 - 12:30	C1: Built Environment and Low Carbon Development II	03MS01
11:15	Dynamic LCA of a net-zero energy and water building and implications at the community scale <i>Cassandra Thiel</i>	
11:30	Using a dynamic segmented model to examine future renovation activities in the Norwegian dwelling stock <i>Nina Holck Sandberg</i>	
11:45	Assessing Regional Differences in Lighting Heat Replacement Effects in Residential Buildings across the United States <i>Jihoon Min</i>	
12:00	Modeling energy and GHG flows from ageing dwelling stock towards 2040 <i>Helge Brattebø</i>	
12:15	The Jevons' Paradox @ 150: Can useful work and exergy efficiency analysis finally confirm if it's true? <i>Paul Brockway</i>	
11:15 - 12:30	C2: Consumers and Lifestyles II	Lecture Theatre E
11:15	Environmental Impact Assessment of Household Consumption <i>Diana Ivanova</i>	
11:30	Lifestyles, Consumption Practices and Sustainability Transitions: towards a conceptual framework <i>Jaco Quist</i>	
11:45	Exploring the linkages between water and wellbeing: how much water do we really need? <i>Jonathan Chenoweth</i>	
12:00	End-users in a sustainable infrastructure transition: Enablers and barriers of infrastructure service provision <i>Sally Russell</i>	
12:15	Estimating the scale and potential benefits of car sharing in a metropolitan city using the case study in Beijing <i>Shuhan Hu</i>	

Wednesday 8th July

TIME	SESSION	ROOM
11:15 - 12:30	C3: Modelling of Stock and Flow Relationships I	Lecture Theatre F
11:15	Calibration of national dynamic material flow models: the example of Aluminium flows in Austria <i>Hanno Buchner</i>	
11:30	A Material Flow Analysis in the Israeli E-waste System <i>Vered Blass</i>	
11:45	Modelling metal flows in the Australian economy <i>Artem Golev</i>	
12:00	Time-series material flow and stock analysis towards sound management of fixed capital and durable goods <i>Shotaro Nakanishi</i>	
11:15 - 12:30	C4: Life Cycle Scenario Modelling Techniques I	Griffiths Theatre
11:15	Minimizing impact of allocation and associated imbalances in LCA and EEIO <i>Guillaume Majeau-Bettez</i>	
11:30	The importance of allocation methods for by-product allocation in large data systems <i>Gregor Wernet</i>	
11:45	Relevance of consequential life cycle modelling guidelines from an industry case perspective and proposal of hybrid modelling resources <i>Soul Annie Leal Meza</i>	
12:00	Capabilities for modelling of conversion processes in LCA <i>Anders Damgaard</i>	
12:15	Applying LCA results in integrated assessment modeling <i>Anders Arvesen</i>	
11:15 - 12:30	C5: Urban Mining II	Lecture Theatre L
11:15	Buildings as a material resource <i>Fritz Kleemann</i>	
11:30	Urban Infrastructure Mines: on the key challenges for realizing metal recovery from disconnected power and telecom grids <i>Niclas Sveinsson</i>	
11:45	Evaluating Anthropogenic Resources using the examples of Phosphorus and Zinc <i>Johann Fellner</i>	
12:00	Sensitivity-study of Improved Recycling Processes in the Construction Industry <i>Georg Schiller</i>	
12:15	Construction material flows and stock assessment: the case study of Paris region <i>Vincent Augiseau</i>	
11:15 - 12:30	C6: Urban Industrial Symbiosis	Lecture Theatre M
11:15	Integrated assessment of water flows and urban water networks in smart parks <i>Anna Petit-Boix</i>	
11:30	Regional Industrial Symbiosis applied at Urban Areas - Gothenburg Region Case Study <i>João Patrício</i>	
11:45	Towards regional low-carbon eco-industrial development: Modeling integrating material and energy circulation in an industrial and urban symbiosis <i>Liang Dong</i>	
12:00	Public Private Partnerships for Industrial and Urban Symbiosis <i>Murat Mirata</i>	
12:15	Assessing impacts of a regional collaboration on large-scale excess heat utilization <i>Erik Ahlgren</i>	
11:15 - 12:30	C7: IE in Developing Countries II	Austin Pearce 1-2
11:15	The potential of industrial symbiosis as an enabler of sustainable economic development in South Africa: building on the case study of the western cape industrial symbiosis programme <i>Sarah O'Carroll</i>	

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TIME	SESSION	ROOM
11:30	Development of a national industrial symbiosis programme in South Africa - from pilots to policy <i>Lauren Basson</i>	
11:45	Spatial analysis and mapping of urban resource flows: the case of Cairo <i>Phebe Dudek</i>	
12:00	Experiences from EDDiCCUT project - Environmental due diligence framework and application <i>Anders Hammer Strømman</i>	
11:15 - 12:30	C8: Design for Environment	Austin Pearce 3-4
11:15	Development of open-source chemical LCA database: Chemical Life-Cycle Collaborative <i>Joseph Bergesen</i>	
11:30	Design for sustainability by accounting for techno-ecological synergies at multiple scales <i>Rebecca Hanes</i>	
11:45	Comparative Ecological Footprinting of Polyhydroxyalkanoate Production from Industrial Residues <i>Radwa Ibrahim</i>	
12:00	Evaluating the time-dependent greenhouse gas emissions intensity of natural gas <i>Jessika E. Trancik</i>	
12:15	Design Principles for Green Energy Storage Systems <i>Maryam Arbabzadeh</i>	

12:30 – 13:30	LUNCH	Lecture Theatre Concourse and University Hall
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13:30 - 15:00	Poster Session I	Lecture Theatre Concourse and University Hall
	Please see Appendix I for Poster Session I presentation titles and presenters	

15:00 – 15:30	TEA	Lecture Theatre Concourse and University Hall
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15:30 - 17:00	D1: Urban Systems - Policy and Governance	03MS01
15:30	Prioritizing Mitigation Measures in Cities using a Three-Pronged Approach <i>Nadine Ibrahim</i>	
15:45	Evaluating the Climate Change Mitigation Potential of Personal Vehicle Technologies <i>Marco Miotti</i>	
16:00	Sustainability Tools for Cities – In Support of Global Agreements <i>Lorraine Sugar</i>	
16:15	The relevance of the driving factors to urban metabolism and the policies for sustainable urban development in Taipei <i>Yi-Shin Wang</i>	
16:30	Decision support for management of critical water flows in urban areas – student involvement in a triple helix research project <i>Ulrika Palme</i>	

TIME	SESSION	ROOM
15:30 – 17:00	D2: Consumers and Lifestyles III	Lecture Theatre E
15:30	Recent trend of Sustainable Consumption & Lifestyle Research: A review <i>Midori Aoyagi</i>	
15:45	Nano-Scale Silver Enabled Textiles: A Case Study in Sustainability <i>Andrea Hicks</i>	
16:00	Adapting community ecology methods to analyze sustainable production and consumption of consumer electronics <i>Callie Babbitt</i>	
16:15	Consumers' Preferences and Willingness to Pay for Electronic Waste Recycling Using Advance Discrete Choice Modelling <i>Vered Blass</i>	
16:30	Urban hunters and gatherers - an exploration into different varieties and their relevance to industrial ecology <i>Henrikke Baumann</i>	
15:30 - 17:00	D3: Scenarios for Decoupling Economic Growth and Resource Use	Lecture Theatre F
15:30	Decoupling global environmental pressure and economic growth: scenarios for energy use, materials use and carbon emissions <i>Tim Baynes</i>	
15:45	Analytical tool for supporting factor 10 at urban district level: a case study at Johanneberg district in Gothenburg, Sweden <i>Paul Gontia</i>	
16:00	Global Resource Use in 2050: Insights from Material Flow Analysis <i>Willi Haas</i>	
16:15	Future Scenarios of International Cooperation on E-waste Management and Metal Recycling in Africa: an UN expert-based Scenario Development using CIB and FSA <i>Yanzhu Zhang</i>	
16:30	Using econometrics and systems dynamics to investigate material stock accumulation <i>Tomer Fishman</i>	
16:45	Improving the global knowledge base of construction material stock and flows <i>Alessio Miatto</i>	
15:30 – 17:00	D4: Life Cycle Scenario Modelling Techniques II	Griffiths Theatre
15:30	Environmental Impacts of Using Distributed Energy Storage for Power System Reserves <i>Jeremiah Johnson</i>	
15:45	Fast screening of alternative life cycles and system optimization with the help of an open source LCA framework <i>Bernhard Steubing</i>	
16:00	Privacy and Provenance in Environmental Impact Assessment <i>Brandon Kuczenski</i>	
16:15	Brightway2-temporalis: A simple approach to temporal LCA calculations <i>Christopher L. Mutel</i>	
16:30	Water analysis tool for energy resources (water) – a modeling framework quantifying water footprint associated with multiple biofuel production pathways <i>Yiwen Chiu</i>	
16:45	Optimizing electricity generation on the basis of life cycle impacts <i>Evert Bouman</i>	
15:30 - 17:00	D5: Method and Database Development in EEIO II	Lecture Theatre L
15:30	An Open Access Environmentally Extended Input-Output Database for China <i>Ming Xu</i>	
15:45	Global decoupling of environmental impacts – historical trends and now casting <i>Richard Wood</i>	
16:00	Decomposition of learning curves for the modeling of technological changes in LCA <i>Joseph Bergesen</i>	

Wednesday 8th July

TIME	SESSION	ROOM
16:15	Methods for tracking (water) Footprints at the micro and meso scale: Application to the Spanish domestic consumption and tourism by regions and municipalities <i>Ignacio Cazcarro</i>	
16:45	Steps towards a global open source LCI database <i>Bo Weidema</i>	
15:30 - 17:00	D6: Facilitation and Networking for Industrial Symbiosis	Lecture Theatre M
15:30	Innovation Networks in Industrial Ecology - a new Framework <i>Simon Wright</i>	
15:45	REIS: an open source web-based platform combining cleaner production and industrial symbiosis <i>Guillaume Massard</i>	
16:00	Eco Industrial Heat Symbiosis in Germany – potential as a part of Green Economy <i>Susanne Hartard</i>	
16:15	Epidemic Modeling of Waste Exchange Adoption in a Facilitated Industrial Symbiosis Network <i>Julien Beaulieu</i>	
16:30	Governance of Industrial Symbiosis <i>Katrien Steenmans</i>	
16:45	Comparison between networking approaches for industrial symbiosis projects ongoing in Italy <i>Laura Cutaia</i>	
15:30 - 17:00	D7: Policy Analysis: Intervention and Planning I	Austin Pearce 1-2
15:30	Reversing the policy logic: Ancillary carbon benefits from air pollution regulation in China's manufacturing industry <i>Xiao Li</i>	
15:45	Identifying a role for industrial ecology in economic development policy: <i>Jim Petrie</i>	
16:00	A proposal to develop public policies to foster sustainable bio-based construction sectors <i>Jeremie Joubert</i>	
16:15	Policy needs (to be) covered by EE-IO capabilities <i>Theo Geerken</i>	
16:30	Adaptive dynamic decision making for energy and resource management policy <i>Katy Roelich</i>	
16:45	From Waste Management to Resource Management for Current and Future Economies in Transition- Israel as a case study <i>Amit Ashkenazy</i>	
15:30 - 17:00	D8: Circular Economy	Austin Pearce 3-4
15:30	Circular Economy Evolution in the UK <i>Julie Hill</i>	
15:45	Environmental Benefits of Industrial Waste Reuse: Evidence from Firm-Level Comprehensive Resource Utilization in Jiangsu, China <i>Junming Zhu</i>	
16:00	Localised production systems – a vehicle to deliver circular economy at local scale? <i>Elias Martinez-Hernandez</i>	
16:15	How industrial ecology research could contribute to more material efficient products: examples in EU <i>Laura Talens Peiró</i>	
16:30	Circularity and cognitive embeddedness – developing the Circularity Canvas <i>Fenna Blomsma</i>	

Thursday, 9th July

TIME	SESSION	ROOM
09:00 – 10:45	PLENARY <i>Chair: Angela Druckman, Co-Chair: Ian Christie</i>	AP 1-4
09:00 - 09:20	Industrial Ecology and Cities <i>Chris Kennedy</i>	
09:20 - 09:40	A Socio-economic Metabolism Approach to Sustainable Development and Climate Change Mitigation <i>Tim Baynes</i>	
09:40 - 10:00	Stocks and Flows in the Performance Economy <i>Walter Stahel and Roland Clift</i>	
10:00 - 10:20	Industrial Ecology in Developing Countries: Taking Stock and Gauging Flows <i>Megha Shenoy</i>	
10:20 - 10:40	The Social and Solidarity Economy: Why is it Relevant to Industrial Ecology? <i>Marlyne Sahakian</i>	

10:45 - 11:15	COFFEE	Lecture Theatre Concourse and University Hall
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11:15 - 12:30	E1: Built Environment and Low Carbon Development II	03MS01
11:15	Socio-Technical Analysis of Residential Electricity Consumption <i>Janet Reyna</i>	
11:30	Optimizing the cost performance of storage technologies for wind and solar energy <i>Joshua M. Mueller</i>	
11:45	The role of municipality planners and their networks in the diffusion of sustainable wooden multi-storey construction in Finland <i>Katja Lähtinen</i>	
12:00	Computational system based on GIS and MFA for environmental analysis of urban development: Case of construction materials in Paris <i>Laurent Georgeault</i>	
11:15 - 12:30	E2: Rebound Effects, Consumers and Lifestyles	Lecture Theatre E
11:15	How to deal with the environmental rebound effect? A policy-oriented approach <i>David Font Vivanco</i>	
11:30	The relativity of eco-innovation: Environmental rebound effects from past transport innovations in Europe <i>David Font Vivanco</i>	
11:45	An analysis of consumer's choice and its GHG implication under monetary budget and time constraint <i>Koji Takase</i>	
12:00	Personal-Metabolism (PM) Life Cycle Assessment (LCA) Model: Danish Case Study <i>Pradip Kalbar</i>	

TIME	SESSION	ROOM
11:15 - 12:30	E3: Industrial Ecology in Policy Support	Lecture Theatre F
11:15	The environmental and economic impacts of the Waste Framework Directive: a case-study of the Portuguese MSW system with environmental extended input-output analysis <i>Joao F.D. Rodrigues</i>	
11:30	Macro-constraints on the modelling of waste-based economies <i>Bo Weidema</i>	
11:45	Material flow analysis for Europe. A thermodynamic approach <i>Alicia Valero</i>	
12:00	Material Flow Analysis for Hospital Efficiency: Case Study on Surgical Attire <i>Joanne Brasch</i>	
11:15 - 12:30	E4: Case Studies II	Griffiths Theatre
11:15	Life cycle environmental impacts and risks of carbon capture and storage (CCS) technologies <i>Laura Sokka</i>	
11:30	How much biochar does gasification bioenergy need to be carbon neutral? <i>Koldo Saez de Bikuña</i>	
11:45	Modeling biogenic carbon flows and climate effects related to the use of Swiss forest wood <i>Bernhard Steubing</i>	
12:00	Technology and policy lessons from life cycle assessment of cement-reinforcing carbon nanotubes made from plant materials <i>Harn Wei Kua</i>	
12:15	Guiding technology development using LCA: The case of bio-based adipic acid production <i>Matty Janssen</i>	
11:15 - 12:30	E5: Industrial Ecology Education	Lecture Theatre L
11:15	How to communicate new knowledge and techniques from the industrial ecology field? A design process proposal for practical guides <i>Jeremie Joubert</i>	
11:30	Teaching industrial ecology for graduate students at Beijing Institute of Technology <i>Changhao Liu</i>	
11:45	Lessons learned from the Erasmus Mundus Master's Programme in Industrial Ecology <i>Ralf Aschemann</i>	
12:00	Tourism networks creation with approach on industrial ecology: educational experience inside Universidad Tecnológica de León (México) <i>Elizabeth Turcott</i>	
11:15 - 12:30	E6: Case Studies of Industrial Symbiosis and Eco-industrial Parks I	Lecture Theatre M
11:15	Green Development Index for the national economic-technology development areas in China <i>Jinping Tian</i>	
11:30	Socio-economic and anthropological factors influencing the decision-making process: a guide for implementing industrial ecology in the French context <i>Sabrina Brulot</i>	
11:45	Facilitating collaboration on Industrial Symbiosis: Public organizations as 'bridging' actors <i>Wouter Spekkink</i>	
12:00	Industrial symbiosis system in León (México) using a geographical information system, GIS <i>Denisse Navarro</i>	
11:15 - 12:30	E7: Policy Analysis: Intervention and Planning II	Austin Pearce 1-2
11:15	Sustainability Assessment of US Biofuel-Related Policies <i>Kullapa Soratana</i>	
11:30	Life cycle assessment for climate change mitigation – How to make LCA useful for the IPCC <i>Edgar Hertwich</i>	
13:45	The Big Picture: The Bandwidth and Environmental Discourses of Future Energy Scenarios <i>Gerard P.J. Dijkema</i>	

Thursday 9th July

TIME	SESSION	ROOM
12:00	Beyond global warming potential: A comparative application of climate impact metrics for the life cycle assessment of coal and natural gas-based electricity <i>Paulina Jaramillo</i>	
11:15 - 12:30	E8: Agent Based Modelling	Austin Pearce 3-4
11:15	Emergence of District Heating Networks; modelling infrastructure business models <i>Jonathan Busch</i>	
11:30	SIMBIOGAS – AN AGENT-BASED MODEL TO EXPLORE THE INDUSTRIAL ECOLOGY OF BIOGAS <i>Kasper Kisjes</i>	
11:45	Policy Packages for Absolute Decoupling via Servicizing: ABM Approach <i>Alma Lopez-Aviles</i>	
12:00	Balancing future demand and supply of decentralized energy systems: Trade-offs and policy implications <i>Claudia R. Binder</i>	
12:15	Informing the Development of the Renewable Energy Sector in Liberia through Industrial Ecology and Complexity <i>Jose Alfaro</i>	
12:30 – 13:30	LUNCH	Lecture Theatre Concourse and University Hall
13:30 - 15:00	Poster Session II	Lecture Theatre Concourse and University Hall
	Please see Appendix II for Poster Session II presentation titles and presenters	
15:00 – 15:30	TEA	Lecture Theatre Concourse and University Hall
15:30 - 17:15	F1: Urban Metabolism and Environmental Footprints of Cities II	03MS01
15:30	Life Cycle Assessment of Electric Fuel Cell Buses and Hydrogen Production Pathways <i>Aleksandar Lozanovski</i>	
15:45	Building-integrated metabolism systems (BIMS): LCC, LCA and CO2 emissions reduction potentials <i>Paulo Ferrão</i>	
16:00	The metabolism of megacities: Global and regional analysis <i>Chris Kennedy</i>	
16:15	Evaluating the performance of urban resource consumption <i>Tom Ravalde</i>	
16:30	Assessing the Water Stress of City-Level Trade: Operationalizing the Water Footprint Concept <i>Richard Rushforth</i>	
16:45	A Life Cycle Assessment (LCA) based design and optimisation approach: A case of resource recovery by bioelectrochemical systems from waste streams <i>Jhuma Sadhukhan</i>	
15:30 - 17:15	F2: Food Supply Chains	Lecture Theatre E
15:30	What sustains food consumption as countries get richer? <i>Michalis Hadjikakou</i>	
15:45	When the horse goes moo: Exploring intervention points to reduce food scares <i>Elizabeth York</i>	
16:00	(Un)sustainable food consumption among the middle classes in Metro Manila: from local consumption to global impacts <i>Laura Burger Chakraborty</i>	

Thursday 9th July

TIME	SESSION	ROOM
16:15	Life-cycle phosphorus demands and losses of human diets <i>Xin Liu</i>	
16:30	Environmental Impact of Food Losses from Agriculture to Consumption in Switzerland <i>Claudio Beretta</i>	
16:45	Feeding the model : assessing data collection methods for apprehending household food metabolism <i>Laura Burger Chakraborty</i>	
17:00	Firm-Specific Supply Chain Sustainability Measurement: Spatially Explicit Assessment of Corn-Intensive Supply Chains in the U.S. <i>Timothy Smith</i>	
15:30 - 17:15	F3: Critical Materials, Waste and Recycling II	Lecture Theatre F
15:30	Tracking the mass flow of Rare Earth Elements in a WEEE pre-processing plant <i>Komal Habib</i>	
15:45	Gallium: Quantification of the global system of production, manufacturing, use and recycling <i>Amund N. Løvik</i>	
16:00	Criticality of metals and its linkage with Japan's resource strategies <i>Hiroki Hatayama</i>	
16:15	Critical Materials Evaluation Model and Methodology in a Product and Industrial Level <i>Yanya Jin</i>	
16:30	Mapping tantalum provenance, production and flows <i>Steven Young</i>	
16:45	Driving forces and inhibitors of high value resource cycling <i>Graham Aid</i>	
15:30 - 17:15	F4: Different Modes of LCA: Opinions, Discussions, Confusions I	Griffiths Theatre
15:30	Backcasting life cycle sustainability assessment; incorporating technology improvement and trade <i>Sarah Postels</i>	
15:45	The implicit boundary conditions of attributional and consequential LCA <i>Bo Weidema</i>	
16:00	Evaluation methodology comparison on industrial and urban symbiosis in Kawasaki Eco Town, Japan <i>Huijuan Dong</i>	
16:15	THE CASE OF VARIABILITY IN LCSA <i>Sergio Pacca</i>	
16:30	Stochastic Rectangular-Choice-of-Technology Model for Consequential Life Cycle Assessment <i>Arne Kätelhön</i>	
16:45	Reference systems for evaluating climate effects of bioenergy <i>Kati Koponen</i>	
15:30 - 17:15	F5: Hybrid Life Cycle Assessment	Lecture Theatre L
15:30	Integrated life-cycle assessment of demand-side technologies for the mitigation of climate change <i>Joseph Bergesen</i>	
15:45	Carbon Footprint Scenarios for Renewable Electricity Generation in Australia <i>Paul Wolfram</i>	
16:00	Life-cycle comparison of greenhouse gas emissions and water consumption for coal and shale gas fired power generation in China <i>Yuan Chang</i>	
16:15	A high-resolution application of the make and use framework for analysis of the Norwegian bioenergy system <i>Tuva Grytli</i>	
16:30	Techno-Ecological Synergy for Sustainability Assessment - Application to a Soybean Biodiesel Production System <i>Varsha Gopalakrishnan</i>	

TIME	SESSION	ROOM
16:45	Stochastic optimization for biodiesel blends using waste cooking oil <i>Carla Caldeira</i>	
15:30 - 17:15	F6: Case Studies of Industrial Symbiosis and Eco-industrial Parks II	Lecture Theatre M
15:30	An empirical analysis of strategic management for establishing a local circular society: historical analysis based on rational, practical, negotiatory, and institutional aspects <i>Tomohiro Tasaki</i>	
15:45	Transition of an eco-industrial park towards an eco-city from the perspective of industrial ecology <i>Chang Yu</i>	
16:00	Exploiting Industrial Ecology for Managing Wastewaters from Shale Gas Operations <i>Sakineh Tavakkoli</i>	
16:15	Effect Evaluation of Industrial Symbiosis Techniques for Energy Conservation and Carbon Mitigation in Cement Manufacturing <i>Xin Cao</i>	
16:30	Proposal of Industrial Symbiosis as the Productive Arrangement of a Biorefinery in Brazil <i>Victoria Santos</i>	
16:45	Eco Industrial Parks and Industrial Symbiosis experiences in Brazil: 15 years of ups and downs <i>Victoria Santos</i>	
15:30 - 17:15	F7: Sustainable Resource Management I	Austin Pearce 1-2
15:30	„United nations framework classification for fossil energy and mineral reserves and resources 2009" – how do anthropogenic resources fit in? <i>Andrea Winterstetter</i>	
15:45	An eco-management approach for resources flows in industrial ecosystems <i>Xiao-Qing Shi</i>	
16:00	Strategic multi-criteria assessment of feedstock for biogas production <i>Roozbeh Feiz</i>	
16:15	The Principles of Resource Efficiency <i>Antonio Valero</i>	
16:30	Research on the Effect of Remanufacturing to China's Auto Industry from Resource Productivity's Perspective <i>Bomin Liu</i>	
16:45	Data reconciliation under fuzzy constraints applied to wood flows in Austria <i>Nada Dzubur</i>	
17:00	Structuring and characterizing databases of regional material flow analyses <i>Oliver Schwab</i>	
15:30 - 17:15	F8: Business Models and Products/Services I	Austin Pearce 3-4
15:30	Experience of product EPDs and EPD process <i>Lucia Rigamonti</i>	
15:45	Dynamic Capabilities as a Key Driver for Corporate Proactive Environmental Strategy in Context of Organizational Culture <i>Nuri Morava</i>	
16:00	Operationalizing Planetary Boundaries at the Firm Level <i>Daniel Macri</i>	
16:15	Greening trade of recyclable materials: recycling certification for improved e-waste management <i>Yasuhiko Hotta</i>	
16:30	End-of-life treatment of carbon fibre reinforced polymers: Impacts of policy on financial and environmental performance <i>Xiang Li</i>	
16:45	Globalized Urban Commodity Teleconnections: Using Big Data to Track Corporate Actors across Time-Space <i>Joshua Newell</i>	

Friday, 10th July

TIME	SESSION	ROOM
09:00 - 10:30	G1: Urban Metabolism and Environmental Footprints of Cities III	03MS01
09:00	A bottom-up model for material-energy coupled environmental assessment of the Swiss building stock <i>Niko Heeren</i>	
09:15	The Industrial Ecology of the Göteborg city region - a first appraisal <i>Maud Lanau</i>	
09:30	The Long-term spatial and temporal dynamics of urban metabolism: the case of Paris urban energy metabolism 1800-2006 <i>Eunhye Kim</i>	
09:45	Comparing a Metabolism-based and an Input-Output-based Approach for Assessing direct and indirect Resource Use and Environmental Impacts at city level - Case of Brussels (Belgium) <i>Aristide Athanassiadis</i>	
10:00	Municipal Water Cycle in China: Unraveling the Nexus of Water, Materials, and Energy <i>Tao Wang</i>	
10:15	Developing a political-industrial ecology: The case of Los Angeles's water supply metabolism <i>Joshua Cousins</i>	
09:00 - 10:30	G2: Governance of Sustainable Consumption and Production	Lecture Theatre E
09:00	Promoting CLEANTECH through public procurement – saving the environment and offering opportunities for businesses <i>Katriina Alhola</i>	
09:15	Backcasting for Sustainable Consumption & Production: framework, methods and its potential for Industrial Ecology <i>Quist Jaco</i>	
09:30	Transformation Toward Sustainable Production of Non-ferrous Industry in China <i>Ling Han</i>	
09:45	Sustainable Operations Management in Bio-refineries: Optimizing the profitability of the product portfolio while meeting the Renewable Fuels Standard <i>Rylie Pelton</i>	
10:00	EU Biofuel Policy and Impacts on Land Use Change: Investigation of Regional Mitigation Options from Good Governance <i>Liselotte Schebek</i>	
09:00 - 10:30	G3: Modelling of Stock and Flow Relationships II	Lecture Theatre F
09:00	Towards a circular economy? Modelling the global dynamics of economy-wide material stocks and flows in infrastructure and buildings, from 1900 -2010 <i>Tomer Fishman</i>	
09:15	MaTrace Global: Tracing the fate of materials across regions over time in open-loop recycling <i>Yasushi Kondo</i>	
09:30	Connecting material stocks to services: The example of steel use in UK vehicles <i>Jonathan Norman</i>	
09:45	Mapping the Anthropogenic Material Stockpile in Germany <i>Georg Schiller</i>	
10:00	The anthropogenic cycle of zinc: Status quo and perspectives <i>Grégoire Meylan</i>	

TIME	SESSION	ROOM
09:00 - 10:30	G4: Different Modes of LCA: Opinions/Discussions/Confusions II	Griffiths Theatre
09:00	Integrated life-cycle technology assessment model for sustainable chemical production <i>Yuan Yao</i>	
09:15	Multiscale life-cycle techno-economic assessment model for advanced manufacturing technologies <i>Runze Huang</i>	
09:30	Brightway2: A new contribution to open source IE <i>Christopher L. Mutel</i>	
09:45	Empirical verification of the importance of consequential modelling using the Ecoinvent database <i>Bo Weidema</i>	
10:00	Method to assess geopolitical related supply risk of raw materials in life cycle sustainability assessment framework: the case of electric vehicles <i>Steven Young</i>	
10:15	Life cycle thinking and assessment to SMEs and start-ups - development of LCA clinics concept <i>Jachym Judl</i>	
09:00 - 10:30	G5: Carbon and other Footprints of Consumption I	Lecture Theatre L
09:00	Constructing the national sustainability matrix <i>Zhu Liu</i>	
09:15	Complementary uses of EE-IOA and MFA based assessment of impacts <i>Samuel Cooper</i>	
09:30	How much for your shirt? Implications of Paying BRIC Workers a Living Wage <i>Simon Mair</i>	
09:45	Three accounts for regional carbon emissions from both fossil energy consumption and industrial process <i>Huijuan Dong</i>	
10:00	Resource footprints and their ecosystem consequences <i>Francesca Verones</i>	
09:00 - 10:30	G6: Case Studies of Industrial Symbiosis and Eco-industrial Parks III	Lecture Theatre M
09:00	Industrial Symbiosis among Small and Medium Scale Enterprises: Case of Muzaffarnagar, India <i>Elsa Olivetti</i>	
09:15	Industrial Metabolism of Chlorine in Chemical Industrial Parks: the Chinese Cases <i>Lei Ma</i>	
09:30	Symbiotic technology-based benchmark capability on energy saving: a case study in China's iron and steel industrial parks <i>Jinjing Xu</i>	
09:45	Promoting industrial symbiosis: Empirical observations of waste-to-resource innovations in the Humber region, UK <i>Anne Velenturf</i>	
10:00	Energy use and energy-related greenhouse gas emissions in a Chinese eco-industrial park <i>Wei Liu</i>	
10:15	Comparing environmental strategies with life cycle assessment on the industry cluster level – green raw materials versus energy integration <i>Frida Røyne</i>	
09:00 - 10:30	G7: Sustainable Resource Management II	Austin Pearce 1-2
09:00	Embracing complexity: how to deal with the water-food-energy nexus <i>Cristina Madrid López</i>	

Friday 10th July

TIME	SESSION	ROOM
09:15	Comparative Material Flow of Medical Supplies and Waste from Cataract Surgery in Southern India and the United States <i>Cassandra Thiel</i>	
09:30	MFA as a tool to improve local resource management in populated area with high ecological value: the case of Santa Cruz Island (Galapagos) <i>Andrea Cecchin</i>	
09:45	How should national resource productivity be compared? – A proposal of two approaches <i>Seiji Hashimoto</i>	
10:00	Resource efficiency in the steel supply chain <i>Jonathan Cullen</i>	
09:00 - 10:30	G8: Business Models and Products/Services II	Austin Pearce 3-4
09:00	The Environmental Impact of Servicizing Agriculture: the Case of Servicized IPM in the Arava Region <i>Tzruya Chebach</i>	
09:15	Resource Productivity of an Aluminum Plant in China: Creating Long-term Public and Private Benefits <i>Junming Zhu</i>	
09:30	Challenges and opportunities in circular business model innovation for clothing from a retailer perspective <i>Nancy Bocken</i>	
09:45	On the attractiveness of product recovery - What are the forces that shape reverse markets? <i>Dennis Stindt</i>	
10:00	Agent Based Modelling Approach for Cell Phone End-of-Use Management <i>Vered Blass</i>	
10:15	Decentralized Biogas Storage and Renewables Integration in Local Energy Systems: A Modeling Approach <i>Gerard P.J. Dijkema</i>	

10:30 - 11:00	COFFEE	Lecture Theatre Concourse and University Hall
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11:00 - 12:30	H1: Urban Metabolism and Environmental Footprints of Cities IV	03MS01
11:00	Environmental footprint of cities and extended carbon emission inventories <i>Valentina Castellani</i>	
11:15	Urban Mitigation of Lifecycle GHG Emissions from the Food System <i>Eugene Mohareb</i>	
11:30	Assessment of regions: A new indicator for monitoring non-recyclable material flows <i>Ulrich Kral</i>	
11:45	Urban metabolism profiles of cities: An empirical analysis of material flow characteristics of 3 metropolitan areas in Sweden <i>Leonardo Rosado</i>	
12:00	A Typology of African Urban Resource Consumption <i>John Fernandez</i>	
12:15	Direct gas emissions in urban sewer networks. Case study of two climatic regions <i>Xavier Gabarrell Durany</i>	
11:00 - 12:30	H2: Sustainable Business Models and Value Networks	Lecture Theatre E
11:00	Household water efficiency: can servicizing business models help overcome barriers to the uptake of household water efficiency systems? <i>Alma Lopez-Aviles</i>	
11:15	The State of Scope 3 Carbon Emissions Reporting <i>Charles Corbett</i>	

Friday 10th July

TIME	SESSION	ROOM
11:30	The energy-level of food consumption since the 19th century taking France as a reference case <i>Petros Chatzimpiros</i>	
11:00 - 12:30	H3: Modelling of Stock and Flow Relationships III	Lecture Theatre F
11:00	Estimation of in-use steel stock in Europe <i>Daryna Panasiuk</i>	
11:15	Aluminum Flow Network in 2007 U.S. Economy <i>Weiqiang Chen</i>	
11:30	Options to supply the UK steel demand and meet the CO2 targets <i>André Cabrera Serrenho</i>	
11:45	Assessing impacts of tungsten carbide: A substance and particle flow analysis <i>Anna Furberg</i>	
12:00	Empirical dynamic material flow analysis model for tungsten in the USA <i>David Vaccari</i>	
12:15	Future nanowaste outflows from Key Enabling Technologies: the case of recyclability of nanoproducts <i>Mauricio Cote</i>	
11:00 - 12:30	H4: Case Studies II	Griffiths Theatre
11:00	Life cycle sustainability assessment of a residential building <i>Pierluca Vitale</i>	
11:15	Life-cycle Sustainable Assessment in the Evaluation of a Controversial Policy: the Use of Coal-based Synthetic Natural Gas for Haze Prevention in China <i>Zengbo Chen</i>	
11:30	LCA is only relative – Experiences from the quantification of overall dispersions around aquaculture LCI results <i>Jeroen Guinée</i>	
11:45	Combining LCA, Risk Assessment and Benefit-cost Analysis: Case study of carbon capture and storage <i>Eric Williams</i>	
12:00	Varying methods of allocating energy use in a multi-product dairy processing system: What are the implications for energy benchmarking? <i>Remy Briam</i>	
12:15	Solar photovoltaic development in Australia – a life cycle sustainability assessment study <i>Man Yu</i>	
11:00 - 12:30	H5: Carbon and Other Footprints of Consumption II	Lecture Theatre L
11:00	What can single environmental footprints tell us? <i>Moana Simas</i>	
11:15	How many environmental footprints do we need? Principal Component Analysis on the EEIO database from the DESIRE project <i>Zoran Steinmann</i>	
11:30	Global biodiversity impacts of EU consumption <i>Harry Wilting</i>	
11:45	Modeling carbon consequences of pro-environmental behaviors of consumers in Spain <i>Rosa Duante</i>	
12:00	The Carbon Footprint of Norwegian Households 1999-2012 <i>Kjartan Steen-Olsen</i>	

Friday 10th July

TIME	SESSION	ROOM
11:00 - 12:30	H6: Social Sciences Methods and Theories in the Service of Industrial Ecology	Lecture Theatre M
11:00	The Environmental Impact of Human Needs <i>Konstantin Stadler</i>	
11:15	Transition of the energy system: an integrative analysis <i>Claudia R. Binder</i>	
11:30	Time and Taste: understanding Middle class food consumption practices and patterns in Bangalore and Metro Manila <i>Marlyne Sahakian</i>	
11:45	What can social practice theory bring to household metabolism studies? An argument for social reflexivity in MFAs <i>Loïc Leray</i>	
12:00	Using Historical LCA as a new methodological approach for assessment of small hydro power sites <i>Beatrix F. Becker</i>	
11:00 - 12:30	H7: Sustainable Resource Management III	Austin Pearce 1-2
11:00	Life cycle assessment as decision support tool in early stage development of a new technology for wastewater resource recovery <i>Martin Rygaard</i>	
11:15	Material and energy dissipation in the contemporary use of elements <i>Luca Ciacci</i>	
11:30	Multi-Material Criticality Assessment: The Case of Thin-Film Photovoltaics <i>Christoph Helbig</i>	
11:45	A multi-regional soil phosphorus balance for exploring secondary fertilizer potentials – the case of Norway <i>Ola Stedje Hanserud</i>	
12:00	Quantifying the potential of biorefinery in fixing carbon within the anthroposphere <i>Frédéric Meylan</i>	
11:00 - 12:30	H8: Agri-food-bioenergy Systems I	Austin Pearce 3-4
11:00	4-D Mapping of Urban Biomass Potential <i>Mithun Saha</i>	
11:15	Environmental Impacts of Multistage Pyrolysis-Derived Biofuels: Connecting Experimental Studies with Systems-Level Analysis <i>George G. Zaines</i>	
11:30	Assessing the Contribution of Ecological Goods and Services in Microalgal Biofuel Life Cycles <i>George G. Zaines</i>	
11:45	Greenhouse gas payback times for crop-based biofuels <i>Mark Huijbregts</i>	
12:30 – 13:30	LUNCH	Lecture Theatre Concourse and University Hall
13:30 - 15:00	I1: Built Environment and Urban Systems	03MS01
13:30	An integrated framework for regional energy symbiotic design by locational suitability analysis of technologies: de-carbonization planning system for Fukushima revitalization <i>Takuya Togawa</i>	

Friday 10th July

TIME	SESSION	ROOM
13:45	Examining the role of intermediary organisations in the development of district heating in the UK <i>Ruth Bush</i>	
14:00	Taiwan's Recycling Policy: Lessons and Revolution <i>Su-Chen Yuan</i>	
13:30 - 15:00	I2: Managing Sustainable Supply Chains	Lecture Theatre E
13:30	Energy-climate-food nexus: lessons from the global supply chains of European food industries <i>Murat Kucukvar</i>	
13:45	Utilization of Wood Resources in a Logistics Network for Wood Products <i>Mohammad Sadegh Taskhiri</i>	
14:00	Risk stratification and assessment in the environmental management of multinational firms: a case study <i>Nathaniel Tindall</i>	
14:15	Improving the life cycle performance of renewable-integrated electricity through transmission loss improvements <i>Sabrina Spatari</i>	
14:30	Urban bio-waste to energy: project evaluation, energy and emissions potential estimation and policy suggestion for China <i>Fan Fei</i>	
13:30 - 15:00	I3: Critical Materials Waste and Recycling III	Lecture Theatre F
13:30	Are vehicles a source of secondary scarce metals? <i>Maria Ljunggren Söderman</i>	
13:45	Systematic evaluation of uncertainty in material flow analysis illustrated via a case study on palladium resource flows in Austria <i>David Laner</i>	
14:00	Added values of multi-year studies in MFA: the phosphorus budget in Austria from 1990 to 2011 <i>Helmut Rechberger</i>	
14:15	Metals production growth required for large-scale photovoltaics deployment <i>Goksin Kavlak</i>	
14:30	Environmental assessment of packaging waste prevention activities in Lombardia region (Italy) <i>Lucia Rigamonti</i>	
13:30 - 15:00	I4: Case Studies IV	Griffiths Theatre
13:30	Life Cycle Assessment of Direct Air Capture of CO ₂ <i>Aleksandar Lozanovski</i>	
13:45	Interpreting life cycle assessment for decision-making on emerging materials <i>Sophie Parsons</i>	
14:00	Life cycle cost implications of urban rainwater harvesting in hot-arid areas <i>M. Violeta Vargas-Parra</i>	
14:15	Comparing the Environmental Impact of Primary and Secondary Production of Indium and Neodymium <i>Patrick Wäger</i>	
14:30	The Environmental Impact of Alternative Energy Sources for Private Transportation in Israel in 2020 <i>Vered Blass</i>	

TIME	SESSION	ROOM
13:30 - 15:00	I5: Carbon and Other Footprints of Consumption III	Lecture Theatre L
13:30	Prefecture-level economic activities and emissions responsibilities in Japan: Application of a multi-regional waste input-output approach <i>Makiko Tsukui</i>	
13:45	Scarcity and Resource Costs: Tracking Payment Flows in the Global Economy <i>Stephen Levine</i>	
14:00	Labour and social footprints in Industrial Ecology <i>Moana Simas</i>	
14:15	Western Cape Regional Resource Flow Model: Relative Resource Intensity of Different Sectors based on an Environmentally Extended Input Output Analysis <i>Pieter Frederik Janse van Vuuren</i>	
13:30 - 15:00	I6: Social Sciences Perspectives	Lecture Theatre M
13:30	Managerial attitudes to energy efficiency – Testing the Theory of Interpersonal Behaviour in an organisational context <i>Rupert Zierler</i>	
13:45	Energy Policy Landscape Governance: A Framework for Analyzing the Multi-Level and Multi-Resource Stocks and Flows of Hydraulic Fracturing <i>Jennifer Baka</i>	
14:00	Industrial Ecology Principles and Industrial Practice – Exploring the Linkage <i>Sudhir Rama Murthy</i>	
13:30 - 15:00	I7: Sustainable Resource Management IV	Austin Pearce 1-2
13:30	How to implement the circular economy in the beer packaging sector through eco-efficiency- and eco-effectiveness- based solutions <i>Monia Niero</i>	
13:45	Closing industrial material loops: Potentials for industrial waste reuse and recycling in the United States <i>Jonathan S. Krones</i>	
14:00	Effects of water quality differentiation in water supply systems on material and energy consumption <i>Sébastien Dente</i>	
14:15	Value in Sustainable Materials Management Strategies for Open Economies - Case of Flanders (Belgium) <i>Maarten Christis</i>	
14:30	Assessment of Secondary Copper Reserves in the Anthroposphere <i>Kyaw Nyunt Maung</i>	
14:45	Complex Value Optimisation for Resource Recovery: stocks and flows of waste and value <i>Jonathan Busch</i>	
13:30 - 15:00	I8: Agri-food-bioenergy Systems II	Austin Pearce 3-4
13:30	Food losses and food waste in china: a first estimate <i>Gang Liu</i>	
13:45	The Stock and Use Efficiency of Phosphorus in the Rice Production System in Taiwan <i>Yi-Shin Wang</i>	
14:00	Life cycle energy demand from algal biofuel generated from nutrients present in the Dairy waste <i>Raja Chowdhury</i>	

Friday 10th July

TIME	SESSION	ROOM
14:15	Gasification technology in the waste treatment cascade as part of a sustainable energy transition <i>Jan H. Miedema</i>	
14:30	Life Cycle Assessment of peat substitution cascaded use: a case study for Italian horticulture nurseries <i>Francesco Castellani</i>	

15:00 – 15:30	TEA	Lecture Theatre Concourse and University Hall
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15:30 - 17:00	CONCLUDING PLENARY	Austin Pearce 1-4
	<i>Chair: Chris Kennedy</i>	
	President's Address	
	Awarding of Society Prize and Laudise Prize	
	Announcement of ISIE Conference in 2017	

Appendix I: Poster Session I Presentations

Board	Poster Session I	University Hall
1	Environmental Abatement Costs of Greenhouse Gas Reduction Technologies for Water Distribution System <i>Arpad Hovath</i>	
2	HOW CAN BUILDINGS IMPROVE CITIES? <i>Clinton Andrews</i>	
3	Low-carbon buildings: How representative are LCA results at early design stages? <i>Diego Peñaloza</i>	
4	Critical factors for improving life cycle energy use and environmental impact in road infrastructure planning <i>Helge Brattebø</i>	
5	Low carbon development of urban water utilities in China <i>Qian Zhang</i>	
6	Assessing the Environmental Impacts from Housing and Land-Based Mobility Demand of Households on a Regional Level <i>Andreas Froemelt</i>	
7	Quantify Urban Foodprints and Mitigation Opportunities <i>Benjamin Goldstein</i>	
8	Rooftop farming: an opportunity towards urban sustainability? <i>Esther Sanyé-Mengual</i>	
9	Projection of Waste Amounts from the Building Activities in Oslo <i>Hrefna Run Vignisdottir</i>	
10	Material Across Scales: Coupling LCA and MFA to Develop New Material Assessment Criteria for Design <i>Irmak Turan</i>	
11	Urban Universities as Small-Scale Urban Systems: A Metabolism Study of University of Illinois at Chicago <i>Ning Ai</i>	
12	Estimating Electricity Waste in Commercial Buildings Due to Over-Cooling in the US <i>Sybil Derrible</i>	
12b	Regional differentiation of railway infrastructure and related material stocks in Japan <i>Feng Shi</i>	
13	Establish the reserve and extractability based evaluation method for future urban mine planning <i>Kunag-Ly Cheng</i>	
14	Benefits of hybrid LCA for implementation of industrial symbiosis. Application to the future metropolitan area of Aix-Marseille-Provence (France) <i>Guillaume Junqua</i>	
15	Research on Analytical Methodology to Quantitatively Evaluate Urban Symbiosis: A Case Study in Suzhou, China <i>Xiaoyan Meng</i>	
16	What are the central issues for future research towards the promotion of sustainable consumption and lifestyles in Asia? <i>Aya Yoshida</i>	
17	Governance for sustainable development - a comparative analysis of national mineral policy approaches in the European Union <i>Andreas Endl</i>	
18	Claiming Sustainability – Requirements and Challenges <i>Bhavik Bakshi</i>	
19	Food retailing – a comparative analysis of handling organic and conventional food products <i>Birgit Brunklaus</i>	

20	A preliminary study about the role played by sustainability issues in the business models and initial strategies adopted by sustainability-driven business startups <i>Marcio De Lazzari</i>
21	How Can Environmental Input–Output Analysis Contribute to Screening Potential Foreign Hotspots of Different Impact Categories? <i>Jun Nakatani</i>
22	Designing sustainable systems with a multi-scale techno-economic modeling framework <i>Rebecca Hanes</i>
23	Income-based GHG emissions of nations <i>Zeqi Zhu</i>
24	A multi-criteria decision model for selecting a portfolio of sustainable phosphorus management strategies in different regions <i>Annika Weiser</i>
25	Human appropriation of net primary production in a village territory in the West African savannah <i>Melanie Blanchard</i>
26	Mine waste or potential future resource? Integrating industrial ecology thinking into a mining project. <i>Eleonore Lebre</i>
27	Analyzing the optimal size and shape of Japanese cities for material and carbon intensity <i>Keijiro Okuoka</i>
28	Anthropogenic Disturbance of Nations with Geomorphologic Change <i>Keisuke Yoshida</i>
29	The future of copper in China-a perspective based on analysis of copper flows and stocks <i>Ling Zhang</i>
30	Scenario analysis of the future demand and supply and associated energy, water and environmental impacts <i>Ayman Elshakaki, Barbara Reck</i>
31	Modelling energy flow in urban districts: MFA characterization of technical and economic constraints <i>Guillaume Massard</i>
32	Current status and future perspectives for rare earths recycling <i>Artem Golev</i>
33	Modeling in-use stocks of consumer durables to forecast generation of end-of-life products and fluorocarbons potential in Asian countries <i>Atsushi Terazono</i>
34	Future Sewage Sludge Generation and Sewer Pipeline Extension in the Developing ASEAN Countries <i>Cherry Myo Lwin</i>
35	Open Loop Recycling and Disposal Options for Lead Glass from Cathode Ray Tubes <i>Eliette Restrepo</i>
36	Economics of End-of-Life Materials Recovery – A Study of Small Domestic Appliances in Portugal Through a Dynamic Material Flow Analysis <i>Elsa Olivetti</i>
37	Determining the influence of scrap quality on operational parameters in steel recycling <i>Stefanie Hellweg</i>
38	Losing critical metals: tracking dissipative losses from material production to end-of-life <i>Till Zimmermann</i>
39	Towards Sustainability Assessment of Recycling Systems: From Evaluation of Home Appliance Recycling in Japan to International Comparison <i>Yasuhiko Hotta</i>
40	Beyond waste – an examination of municipal waste management practices in the Maltese Islands using comparative material flow accounting and carbon footprint assessment to analyse current and the future planned scenarios <i>Xavier Gabarrell Durany</i>
41	Sensitivity of Input-Output-based Water Consumption Analysis to Uncertainty in Green Water Availability: A Case Study of Five Provinces in China <i>Daqian Jiang</i>
42	Endogenising capital in MRIO models - the environmental impacts associated with capital formation <i>Carl-Johan Södersten</i>

43	Life Cycle Assessment of Food Loss Associated with Current U.S. Consumption Compared to the Recommended USDA Food Patterns <i>Daesoo Kim</i>
44	Performance Analysis of a Cement Plant <i>Daniel Summerbell</i>
45	An Open Source Software Framework in Industrial Ecology: Toward a New Level of Modelling Quality and Transparency <i>Guillaume Majeau-Bettez</i>
46	Greenhouse Gas Emission of Biomass Power Generation in China: System Boundary and Results Comparison <i>Changbo Wang</i>
47	Life cycle assessment of rapeseed methyl ester addressing alternative cultivation practices and incorporating uncertainty <i>Fausto Freire</i>
48	Effects of cycle-life on the life cycle of EV traction batteries <i>Hanjiro Ambrose</i>
49	A Holistic Assessment of Electric Energy Storage Systems <i>Joule Bergerson</i>
50	Sensitivity analysis of environmental process modeling in a life cycle context– case study of the use of hemp sourced material in the building <i>Anne Ventura</i>
51	Non-Energy Benefits of Energy-Efficient Residential Lighting <i>Matthew Eckelman</i>
52	Data quality assessment in LCA: Concept, approach and case example <i>Bhawna Singh</i>
53	How can a dynamic Life cycle inventory data repository learn from open data approaches in other fields? <i>Henrikke Baumann</i>
54	Life Cycle Environmental and Socio-economic Sustainability Aspects of Small-scale Pyrolysis Products <i>Ghasideh Pourhashem</i>
55	Life cycle costing of a supercapacitor in early development stage for automotive application <i>Hanna Dura</i>
56	Steel-versus-Concrete Debate Revisited – Global Warming Potential and Embodied Energy Analyses based on a Consequential Life Cycle Perspective <i>Harn Wei Kua</i>
57	Green Feedstocks vs. Green Energy in U.S. Plastics Production <i>I. Daniel Posen</i>
58	A simplified life cycle inventory data collection process for confectionery products: Challenges and recommendations for the food industry <i>Jamal Miah</i>
59	The size and range effect: life cycle greenhouse gas emissions of electric vehicles <i>Linda Ager-Wick Ellingsen</i>
60	Comparative LCA of Virgin and Recycled Toilet Paper in Thailand <i>Lisa Veliz</i>
61	A comparative analysis of the environmental impacts of plastic medical device disposal in England <i>Madeleine Yates</i>
62	Dealing with multifunctionality in LCA of wastewater-based microalgae biodiesel <i>Érica Castanheira</i>
63	Towards dynamic LCA: Insights from coupling a dynamic building-energy model with time-specific inventory data <i>Maria Hecher</i>
64	The Plant: industrial symbiosis as a business model for incubating sustainable urban agriculture <i>Weslyne Ashton</i>
65	A comparative study of industrial symbiosis between China and the United Kingdom <i>Yinjie Zhou</i>
66	Sketching a Network Portrait of the Humber Region <i>Alexandra Penn</i>

67	Information Synergy of Industrial Symbiosis – An Open Data View of Industrial Waste Flows <i>Ben Zhu</i>
68	Mexican network of industrial ecology: achievements and challenges <i>Elizabeth Turcott</i>
69	Symbiotic Bio-Energy Port Integration with Cities by 2020 (EPIC 2020) <i>Murat Mirata</i>

Board	Poster Session I	Lecture Theatre Concourse
70	Sustainable agro technological cluster in México: the case of Penjamo as a model for agroindustrial symbiosis systems <i>Isabel Sanchez Luna</i>	
70b	Synthesis and Assessment of a Biogas-Centred Agricultural Eco-Industrial Park in British Columbia <i>Roland Clift</i>	
71	Study of Typical Eco-Industrial Park's Evaluation Index System Based on Material Flow Analysis <i>Lei Zhang</i>	
71b	Analysis of coal-based industrial symbiosis system in China <i>Xiaoyang Zhang</i>	
72	Structural transformation issue in industrial ecology: Implications from economic studies <i>Xiao Li</i>	
73	Dataquality assessment for LCA – a management science approach <i>Tereza Bicalho</i>	
74	Extending the Circular Economy: Power Dynamics & Organizational Influence <i>Geraldine Brennan</i>	
74b	Linking Socio-Economic Indicator with Food Related Nitrogen and Phosphorus Consumption in Taiwan. <i>Yi-Shin Wang</i>	
75	Evaluating a Product Service System for Mobile Phones <i>James Suckling</i>	
76	Analysis of a European closed-loop supply chain network for WEEE – an OEM perspective <i>Christian Nuss</i>	
77	Circular economy and LCA analysis of recycling single-use consumer batteries <i>Edis Glogic</i>	
78	Structure of conditions for recycling from urban mine <i>Ichiro Daigo</i>	
79	Advanced Method to Quantify Global Flows of Used Products <i>Masaaki Fuse</i>	
80	Effect of infrastructure export to economy and carbon dioxide reduction <i>Tomoyo Toyota</i>	
81	Towards End-of-Life Material Recovery Potential Assessment in the Built Environment <i>Matan Mayer</i>	
82	Resilience and Complexity: A Bibliometric Review and Prospects for Industrial Ecology <i>Sara Meerow</i>	
82b	Important Sectors of the Global Virtual Water Network <i>Ming Xu</i>	
83	Multi-agent simulation of recycling behaviour for recyclables with longer life-span <i>Akiyuki Masuda</i>	
84	Could the history of Kalundborg have been foreseen? Agent-based simulation tool to experiment with industrial symbiosis models <i>Carmen Ruiz</i>	
85	Target Oriented Robust Optimization in the Design of Industrial Ecosystems <i>Anthony Chiu</i>	
86	Macro-Inventory of Processes and Value Paths for Organic By-products <i>Christopher Davis</i>	
87	Climate change effect of long rotation forest bioenergy in Sweden - insights from stand and landscape level assessments <i>Olivia Cintas</i>	

88	Irrigation management as a major driver for life cycle greenhouse gas emissions and energy use in California orchards <i>Elias Marvinney</i>
89	Life Cycle Assessment of biomass production - a regionalized approach for Ukraine <i>Karoline Wowra</i>
90	Global demand for agricultural and forest land and its saving potential <i>Kento Tamura</i>
91	Variability in energy demand and greenhouse gas emission in algal biofuel production resulted from nutrient recycling <i>Raja Chowdhury</i>
92	Using Industrial Ecology Tools to Create the Appropriate Policy Package <i>Amit Ashkenazy</i>
92b	Recognizing and rewarding improvements in material reuse as a qualifying carbon reduction strategy of the proposed UN Climate Change Agreement <i>Marian Chertow</i>
93	Promoting industrial symbiosis: The role of governmental organisations <i>Anne Velenturf</i>
94	Reduction of ecological impact in Dutch chemical industry 1990-2012: Between self-organization and regulation <i>Frank Boons</i>
95	Recovering E-metals from Legacy Wastes: Implications for Governance and Industrial Symbiosis <i>Helen Baxter</i>
96	Technology portfolios to mitigate methane emissions from energy technologies <i>Mandira Roy</i>
97	Assessing technology and innovation interventions in the metabolism of Greater London <i>Oliver Heidrich</i>
98	Regional Variation in Social Dimensions Affecting the Ambitions Of Local Renewable Energy Initiatives and the Potential of Biogas <i>Gerard P.J. Dijkema</i>
99	Collaboration patterns in industrial ecology research: 2015 update <i>Jonathan S. Krones</i>

Appendix II: Poster Session II Presentations

Board	Poster Session II	University Hall
1	Impacts of regional economic development with industrial symbiosis on shifting low carbon energy systems in municipality scale in Japan: Case Study in North Coastal Area of Fukushima Prefecture <i>Hiroto Shiraki</i>	
2	Integrating user transportation in the life-cycle assessment of buildings <i>Joana Bastos</i>	
3	Assessing the environmental impact of governmental resettlement housing in northern Africa — Moroccan “Cities without Slums” program <i>Khadija Benis</i>	
4	Dynamic Type-Cohort-Time Approach for the Analysis of Energy Reductions Strategies in the Building Stock <i>Luis Felipe Vasquez Correa</i>	
5	Dynamic scenario modelling of the Norwegian dwelling stock with energy analysis and LCA impacts <i>Magnus Inderberg</i>	
6	Cross-sectional Technology Assessment at the quarter level <i>Matthias Spielmann</i>	
7	Development of regional sustainability indicators focusing on stocks <i>Hideaki Kurishima</i>	
8	A framework for analyzing and improving resilience at the neighbourhood scale <i>Mariko Uda</i>	
9	Carbon Footprint Hotspots in a Swiss Municipality <i>Andreas Froemelt</i>	
10	Experimental and prediction modeling study on MSW fluidized bed gasification characteristics under N ₂ /CO ₂ /Steam atmosphere <i>Jun Dong</i>	
11	Comparing Apples to Apples: An Ontology That Can Help Urban Metabolism Researchers Better Understand, Share, and Compare Data About Cities <i>Lorraine Sugar</i>	
12	Urban metabolism and the informal city – concepts and methods <i>Louise Guibrunet</i>	
13	The Fractal Analysis, a quantitative spatial tool to measure the urban system <i>Pierre-Alexandre Guillemette</i>	
14	Assessment of regions by monitoring non-recyclable material flows <i>Ulrich Kral</i>	
15	Phosphorus flow analysis upon different scenarios in socioeconomic system: The case of Stockholm, Sweden <i>Jiechen Wu</i>	
16	Innovative Modelling and Monitoring Research Initiative for Eco-cities and Regions <i>Tsyoshi Fujita</i>	
17	Assessing access to water at the consumer level – a case study for Indian households <i>Julie Clavreul</i>	
18	Effect of household characteristics and behavior on life cycle environmental impact of household consumption <i>Naoki Yoshikawa</i>	
19	Food waste and the modernization of Korea’s grocery retail sector <i>Keith Lee</i>	
20	Towards Sustainable Development: A Network Approach <i>Nasir Ahmad</i>	
21	Sustainable Manufacturing: the next steps <i>Daniel Cooper</i>	
22	Influence of the spatial configuration of land expansion on biodiversity, carbon storage <i>Carina Mueller</i>	
23	Merging Carbon reporting and EEIO analysis for Scope 3 reporting metrics <i>Jennifer Schmitt</i>	

24	A Simultaneous Pickup and Delivery Green Vehicle Routing Problem with Backhauls and Time Windows for Minimizing Energy Consumption and Operational Costs <i>John Steven Lee</i>
25	Integrating Time Aspects into the Assessment of Sustainable Resource Management <i>Annika Weiser</i>
26	Modeling Food Waste Generation for Neighborhood-Based Sustainable Practice <i>Ning Ai</i>
27	Value chain analysis of China's iron and steel industry based on substance flow analysis <i>Qiang Yue</i>
28	Can carbon nanomaterials help avoiding resource scarcity? <i>Rickard Arvidsson</i>
29	The pathway to circularity: An assessment of material flows and loops in the EU and the world in 2005 <i>Willi Haas</i>
30	Achieving sustainable waste management in Belo Horizonte City, Brazil <i>Witold-Roger Poqanietz</i>
31	What is the Effective Countermeasure to Reduce Material Stock and Demand? A case study of steel <i>Reina Kawase</i>
32	Evaluating the amount of residential waste likely to be caused by great earthquakes along the Nankai Trough: The case of Mie prefecture, Japan <i>Sao Hiroshi</i>
33	Forecasting urban metabolism: a horizon scanning approach <i>Tom Ravalde</i>
34	Mercury Flow Analysis: Case of Mercury-contained Lamp Products in South Korea and France <i>Yanya Jin</i>
35	Assessment of Resource efficiency of a metal working process <i>Alessio Camitelli</i>
36	How dynamic MFA can contribute to assess the availability of critical raw materials for emerging technologies <i>Hanna Dura</i>
37	Estimating tonnage and composition of non-hazardous industrial waste in the United States <i>Jonathan S Krones</i>
38	EPR for emerging technology: a case study on photovoltaic modules <i>Mo Li</i>
39	Closing the material flow loop based on the criticality of material used in mobile phones <i>Rajib Sinha</i>
40	Spatial Simulation and Environmental Analysis on the Improvement of the Waste Plastics Recycling System in Tianjin <i>Richao Cong</i>
41	Criticality of water – aligning water and mineral resources assessment <i>Stefanie Hellweg</i>
42	Byproduct metals and the limitations of substitution <i>Tom Graedel</i>
43	Analysis of the energy generation potential of municipal solid waste incineration plants and the future outlook of energy supplies from waste <i>Tomohiro Tabata</i>
44	Direct air capture a good alternative for post combustion capture? <i>Coen Van der Giesen</i>
45	Optimized paths of penetration and replacement of consumer durables in line with gains in energy efficiency <i>Tomohiro Tasaki</i>
46	Making data-intensive life cycle frameworks policy-relevant <i>Thomas Gibon</i>
47	Applicability of consumption-based indicators in regional assessments of resource efficiency <i>Maija Mattinen</i>
48	Carbon footprint indicator for household consumption in Finland <i>Marja Salo</i>

49	Exploring interregional transfer of ferrous metal within China: an iron and steel consumption network designed by a multiregional input-output model <i>Xiaoyang Zhang</i>
50	Combining Consequential LCA and a Merit-Order-Model to analyse substitution effects of Co-Firing <i>Steffi Weyand</i>
51	Amended Life Cycle Assessment on Co-Benefits of Recycling Organic Wastes for Practice <i>Yu Qi</i>
52	Using uncertainty analysis to guide LCA system boundary selection: Passenger vehicle GHG emissions as case study <i>Lindsay Price</i>
53	Predicting life cycle greenhouse gas emissions of individual gas-fired and oil-fired electricity plants on a global scale <i>Mara Hauck</i>
54	The benefits of using natural gas for road transportation - a county-level analysis of reduced criteria air pollutants from natural gas use for light duty and heavy duty vehicles <i>Paulina Jaramillo</i>
55	Impact of User Behavior Variation on the Life Cycle Assessment of Building Cooling Systems <i>Stephen Ross</i>
56	A systematic approach using the sensitivity analysis in life cycle thinking context for a decision aiding – case study of hemp-based insulation products for buildings <i>Tristan Senga Kiessé</i>
57	Comparison of three international standards on product carbon footprint accounting <i>Zhen Wang</i>
58	Life Cycle Assessment of Power-to-Liquid production <i>Aleksandar Lozanovski</i>
59	LCA on organic waste-to-energy value chains for Norway and Poland <i>Helge Bratlebø</i>
60	Optimal use of grid-scale energy storage to meet greenhouse gas emissions targets in an off-grid configuration <i>Maryam Arbabzadeh</i>
61	Life Cycle Assessment of Admission Process at the University of Chittagong, Bangladesh <i>Muhammed Hossain</i>
62	National Level LCA of Potable Water Supply System - Key Challenges and Solutions in Data Collection <i>Noa Meron</i>
64	Quantifying cumulative energy demand and life cycle greenhouse gas emissions in early road planning stages: A case study of the Oslo fjord crossing in Norway <i>Reyn O'Born</i>
65	Life Cycle Environmental Release of AgNPs Based on MFA in China <i>Sha Chen</i>
66	Environmental impact throughout Life cycle of Krathong made from bread and its comparison with Krathongs made from banana tree and polystyrene foam <i>Sureerat Thomasirigul</i>
67	Eco-efficiency analysis on utilization strategies of MSW from a life cycle perspective: A case study from China <i>Wei Zhao</i>
68	Carbon Vision?: A Meta-study on Environmental Systems Analyses of Biofuel Production <i>Michael Martin</i>
69	The application of “ecoputation” to assessing the life cycles of products and services and their social implications – case studies in the heating of buildings <i>Philip Sinclair</i>
70	The introduction of electric vehicles in the Portuguese car fleet – a dynamic fleet-based life-cycle approach <i>Rita Garcia</i>

Board	Poster Session II	Lecture Theatre Concourse
71	The ontology and epistemology of Industrial Symbiosis <i>Ben Zhu</i>	
72	SymbioSys: a platform-web to facilitate and promote resource efficiency in industrial and urban systems <i>Carmen Ruiz</i>	
73	Smart eco-industrial city supported by apparent energy upgrade and innovative monitoring <i>Minoru Fujii</i>	
74	Energy Recovery from Biomass Waste by Collaboration of Environmental Infrastructures <i>Noboru Yoshida</i>	
75	Scaling up and Mainstreaming of Eco-industrial park program in Korea <i>Hung suck Park</i>	
76	Utility Companies as Catalysts for Industrial Symbiosis Developments – The case of E.ON Sweden <i>Murat Mirata</i>	
77	Effect evaluation of construction of industry link in industrial parks <i>Qiang Li</i>	
78	Participatory Development and Analysis of a Fuzzy Cognitive Map of the Establishment of a Bio-based Economy in the Humber Region <i>Alexandra Penn</i>	
79	A review of social norms in organisational settings and presentation of an intervention approach for analysis <i>Peter Bradley</i>	
80	Populating the life cycle perspective: methods for analyzing social and organizational dimensions of product chains for management studies <i>Henrikke Baumann</i>	
81	The influence of the personal value frame in LCA <i>Rita Vasconcellos Oliveira</i>	
82	Life cycle engineering of a self-chilling beverage can <i>Noemi Arena</i>	
84	An argument for attributional LCA in environmental declarations based on a comparison with type I environmental labels and country-of-origin labels <i>Kristian Jelse</i>	
85	Categorization of substances contained in End-of-Life Television Sets and Personal Computers in China <i>Jun Nakatani</i>	
86	Eco-efficient management of recyclable waste for sporting events: a case study from marathons <i>Marcio De Lazzari</i>	
87	Consumers' behavior on waste batteries collection and recycling in China: a case study Yutao Wang	
88	Circular Economy Evaluation System for Taiwan's Steel Cycle <i>Wan-Ting Hsu</i>	
89	Product Space, Complexity Index and Path towards Sustainability: a Novel Investigation of China's Regional Economy <i>Yang Li</i>	
90	Capturing the Sustainability of Urban Systems using Fisher Information: Application to Public Transport <i>Sybil Derrible</i>	
91	An Agent-based Model to Explore the World's Inter-Connected Energy Regions <i>Gerard P.J. Dijkema</i>	

92	Adopting Servicized Crop Protection Management in the Agri-food Sector: Agent Based Modelling Approach <i>Tzruya Chebach</i>
93	Multicriteria Assessment of Agricultural Resources for Energy and Material Use <i>Meike Schmehl</i>
94	Toward sustainable phosphorus management: A potential of livestock waste streams for phosphorus recovery <i>Nikolinka Shakhrmanayan</i>
95	Towards Sustainable Pig Diets in the US <i>Daesoo Kim</i>
96	Water demand estimation of algal biofuel production with special emphasis on evaporative water losses estimation <i>Raja Chowdhury</i>
97	Investigation of the potential of rice husk-based power plants and a pre-feasibility assessment of possible plants in the An Giang Province, Vietnam <i>Thu Trang Nguyen</i>
98	Determining the feasibility of a Material Flow Analysis in Cape Town <i>Paul Hoekman</i>
99	Bridging Monitoring Reporting Verification (MRV) with the Concepts of Social Monitoring and Participatory approaches <i>Remi Chandran</i>
100	The Influence of Geographical Scale in Life Cycle Assessment <i>Sarah McLaren</i>
101	The empirical research on deliberative democracy applied in Strategic environmental assessment <i>Yenyu Wu</i>
102	Individual policy intervention to implement Industrial Symbiosis: A comparison between UK and China <i>Yuan Tao</i>
103	Industrial Ecology Education in Estonia <i>Janet Peda</i>
104	Climate impact assessment of biomass gasification CHP plants with carbon capture <i>Gabriel David Oreggioni</i>
105	Concrete use in the housing sectors of Great Britain and Thailand <i>Napaporn Tangtinthai</i>
106	Taking the stock of industrial ecologists <i>Gang Liu</i>
107	Role of urban green infrastructure in regulating local microclimate and human comfort: integrating field measurements, numerical modeling and social surveys <i>Yafei Wang</i>