

PROCEEDINGS PRODUCTION

Proceedings editors

Sophie Attali, Eliane Métreau, Mélisande Prône, Kenya Tillerson
ICE – International Consulting on Energy, Paris, France

Proceedings layout and production

(in co-operation with the editing team)

Nils Borg, Ylva Blume, Therese Lindström
Borg & Co, Stockholm, Sweden

Yrsa Westerlund
TypaText, Stockholm, Sweden

Lars Johansson
Template Publishing, Uppsala, Sweden

Cover design

Klas Björkman
Björkman & Mitchell, Stockholm, Sweden

Printing

ABA Kopiering, Stockholm, Sweden
Åtta.45, Stockholm, Sweden (cover)

Acknowledgements

eceee 2003 Summer Study

2-7 June 2003

Saint-Raphaël, France

eceee would like to thank all the authors and the panel leaders for their intense efforts to contribute to these proceedings.

We gratefully acknowledge the support of the eceee Board and each of the anonymous helpers who have assisted in rendering the June 2003 Summer Study a success.

We wish to convey a special thanks to the European Commission and to the other partners and contributors, whose support make this event possible.

PANEL LEADERS

PANEL 1. ENERGY EFFICIENCY: A STRATEGIC CHOICE FOR EUROPE

Bernard Laponche, independent consultant, France

Hans-Joachim Ziesing, German Institute for Economic Research (DIW), Berlin, Germany

PANEL 2. COMFORT AND ENERGY USE IN BUILDINGS

Vincent Berrutto, EC – Joint Research Centre, Institute for Environment and Sustainability, Italy

George Henderson, independent consultant, United Kingdom

PANEL 3. LAND USE, TRANSPORTATION AND MOBILITY

Mohamed Mezghani, International Association for Public Transport (UITP), Belgium

Dominic Stead, OTB Research Institute, Delft University of Technology, The Netherlands

PANEL 4. BUILDING THE BRIDGE FROM LAB TO CUSTOMER

Lena Neij, University of Lund, Environmental and Energy Systems Studies, Sweden

Jacky Pett, Association for the Conservation of Energy (ACE), United Kingdom

PANEL 5. MARKET-BASED INSTRUMENTS

Enzo di Giulio, Eni Corporate University – Scuola Mattei, Italy

Claudia Kemfert, Oldenburg University, Germany

PANEL 6. DYNAMICS OF CONSUMPTION

Margrethe Aune, Norwegian University of Science and Technology, SINTEF Teknologiledelse, IFIM, Norway

Mithra Moezzi, Lawrence Berkeley National Laboratory, USA

PRINCIPAL PARTNERS

Ademe, France

Danish Energy Authority

Enova, Norway

European Commission

The Research Council of Norway

PARTNERS

Energy Foundation Schleswig-Holstein, Germany

Swedish Energy Agency

Energy Saving Trust, UK

CONTRIBUTORS

VATT, Finland

ECEEE BOARD

BOARD MEMBERS

François Moisan (Chairman), Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME), France

Peter Bach (Vice Chairman), Danish Energy Authority (DEA)

Anita Eide, Enova SF, Norway

Michael Geissler, Berliner Energieagentur GmbH, Germany

Holger Krawinkel, Energiestiftung Schleswig-Holstein, Germany

Eoin Lees, (for the Energy Saving Trust, EST), United Kingdom

Egil Öfverholm, Swedish Energy Agency

Lorenzo Pagliano, Politecnico di Milano, Italy

Adriaan Perrels, National Economic Research Centre of Finland, VATT

Joanne Wade, Association for the Conservation of Energy (ACE), United Kingdom

BOARD ALTERNATES

Hans Otto Haaland, The Research Council of Norway

Bernard Laponche, independent consultant, France

Klaus Wortmann, Energiestiftung Schleswig-Holstein, Germany

ECEEE GENERAL MANAGER

Nils Borg, Borg & Co., Sweden

ECEEE ADVISORY COMMITTEE

Hans Nilsson (Chairman), FourFact, Sweden

Paolo Bertoldi, JRC (EC), Italy

Randall Bowie, European Commission

Christine Egan, CLASP, USA

Manfred Heindler, University of Graz, Austria

George Henderson, independent consultant, United Kingdom

Benoit Lebot, International Energy Agency, France

Testsuya Maekawa, Japan Facilities Solutions, Japan

Jaroslav Marousek, Seven, Czech Republic

Jan Moen, NVE, Norway

Petra Opitz, DENA, Germany

Agneta Persson, ÅF, Sweden

Hal Wilhite, University of Oslo, Norway

CONFERENCE MANAGERS

Sophie Attali & Kenya Tillerson, International Consulting on Energy (ICE), France

A special thanks to

Mélisande Prône & Eliane Métreau, International Consulting on Energy (ICE), France

Christine Saas, Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME)

Foreword:

Time to turn on energy intelligence

Conference Managers: **Sophie Attali & Kenya Tillerson**
ICE – International Consulting on Energy, Paris, France

IN THIS VERY SPECIAL YEAR which marks the 10th anniversary of eceee, as Conference Managers we are proud of our participation in the organisation of the 2003 Summer Study.

Founded in 1993, the European Council for an Energy Efficient Economy promotes the understanding of energy efficiency in the society and contributes to making energy efficiency work in practice. The celebration of the 10th anniversary raises an obvious question: after 10 years of bringing together policy-makers, practitioners and thinkers, blending different disciplinary approaches, and balancing creative imagination with tangible results, how much progress has been made?

It would only be natural to find that members of the energy efficiency community are impatient: too little is being done too slowly. Nevertheless, looking back at the situation ten years ago, we must admit that there are several achievements to celebrate.

At European level, we can applaud the adoption of a series of Directives that aim to integrate energy efficiency into various European policies. The European Commission's Green paper "Towards a European Strategy for the security of energy supply" (2001) and the fact that it places energy demand management as a first priority for the future, is without a doubt a concrete and positive output of these last ten years of efforts from all European energy efficiency experts, many of which are members of eceee. Most Members States are following suite and have announced long term energy efficiency policies and emission reduction targets. Let us raise a toast for these important milestones attained.

Before we drink, however, we should ask ourselves are we only drinking to celebrate or are we also drinking to forget?

Forget that the future is not a bed of roses. Forget that the Kyoto protocol is only a (very) small step in the battle

against climate change. Forget that with energy demand still strongly growing, and that Europe will most probably not fulfil its global Kyoto commitments. Forget that although most countries are now announcing very ambitious energy and climate objectives for 2050, few have set in motion the policies – with financial, institutional, and social backing – that need to be implemented today in order to reach these aims. Forget that the additional challenge for Europe 25 of integrating the Candidate countries is not being met with the necessary efforts to reduce their high energy intensities (masked today by the long-lasting economic crisis). Forget that while we advocate the right to development of all the world's populations, we, in the industrialised countries, still continue to drink deeply, knowing that the barrel may soon run dry...

So, we must ask: for issues as crucial as climate change, energy security and sustainable development, is a discourse on moderation, adjustment and even – the core of our activity – efficiency enough?

The answer seems evident and these summer study proceedings are full of ideas and examples demonstrating that energy demand should and can be turned down.

This year, we present a fine new vintage of energy intelligent solutions: from supranational policies to local initiatives, via land-use planning and personal lifestyles, new technologies designed, marketed and evaluated; from standards, to agreements and to financial incentives: the broad scope of questions raised when we challenge the ever-growing energy demand are scrutinised in these three volumes, through 146 papers and posters.

Volume I is comprised of the papers presented in Panel 1: Energy efficiency: a strategic choice for Europe and Panel 2: Comfort and energy use in buildings.

Volume II presents papers on Land use, transportation and mobility (Panel 3) and those which contribute to Building the bridge from lab to customer (Panel 4).

Volume III contains papers from Panel 5 on Market-based instruments and those from Panel 6 relating to the Dynamics of consumption.

These three volumes show that energy demand can be turned down through four main paths:

- Technologies to reduce energy consumption on the demand side are constantly developing;
- Organisational aspects of policies and programmes are evolving towards a diversity of partnerships (through procurement, benchmarking, etc.);
- Tools supporting these policies are also improving: moving away from stop-and-go subsidies towards co-operation between the public and the private sectors, the redeployment of regulations and fiscal measures;
- The philosophy behind the policies is questioned: what kind of society are we aiming for? What is progress? What is the measure of comfort? What do we pursue when we speak about development? What is the role of energy policy and policy experts in making these paradigmatic changes? And so on.

What we need is a change of scale.

To reduce by a factor of four the greenhouse gas emissions of Europe by 2050 seems to be a formidable and quite impossible challenge. But, if we look behind us at the world's energy situation in the mid twentieth century and visualise the progress achieved, we should be convinced that such an ambition is not unrealistic.

Many consider the goal of climate protection, security and sustainability as a constraint. We prefer to think it is a great opportunity, a chance to build the constituents of a new society. The message of the eceee 2003 Summer Study is definitely a positive one: Time to turn on energy intelligence.

So yes, we can drink with both enthusiasm and determination: happy anniversary eceee!

eceee Summer Study 2003 Proceedings

VOLUME 1 PROCEEDINGS

Acknowledgements	iii
Foreword	v

PANEL 1 ENERGY EFFICIENCY – A STRATEGIC CHOICE FOR EUROPE

Panel leaders: **Bernard Laponche, Hans-Joachim Ziesing**

Introduction to Panel 1	1
1,004 Innovative approaches to finance energy efficiency projects in Russia Petra Opitz	3
1,011 Australia's contribution on standby power Lloyd Harrington, Shane Holt	9
1,013 Lessons learnt from Australia's standards & labelling program Shane Holt, Lloyd Harrington	21
1,017 Advanced metering, dynamic pricing and demand response proceeding in California Arthur H. Rosenfeld	29
1,024 Implementing climate related measures: will the Kyoto mechanisms release the demand side potential? Hans Nilsson	33
1,028 Energy planning in Poland and Estonia against the background of their energy efficiency policies Katrin Blechschmidt	45
1,036 EU-Russia energy dialogue and Russia's energy strategy – the vital role of energy efficiency Bernard Laponche, Théodore Filimon, Bessarion Jghenti	57
1,040 Combining long term agreements with emissions trading: An overview of the current EU energy efficiency policies for the industrial sector and a proposal for a new industrial efficiency policy Otto Starzer, Paolo Bertoldi, Michael Sattler	67
1,045 Appliance & equipment efficiency standards in the US: Accomplishments, next steps and lessons learned Steven Nadel	75
1,067 What's wrong with energy efficiency? A comparative analysis of the barriers to municipal investments in energy efficiency in Bulgaria, the Former Yugoslav Republic of Macedonia and Hungary Silvia Lazarova, Konstantin Dimitrov	87
1,075 Energy efficiency – an integrated concept in an integrated Europe Tudor Constantinescu, Rod Janssen	101
1,078 Stimulating greenhouse gas emissions reductions in Central and Eastern economies, through EcoLinks program Violeta Kogalniceanu, Adam W. Hinge	109
1,100 Energy efficiency projects and greenhouse gas emissions in Ukrainian district heating systems Mykola Rapsun, Volodymyr Deriy, Pavlo Shestopal, Georgiy Vainshtein	113
1,111 Disseminating energy efficient technologies in emerging nations: the case for energy agencies in South Africa Barbara Praetorius, Jan W. Bleyl	117

1,128	Energy efficiency in UK energy policy: a step change towards a low carbon economy Joanne Wade, Matthew Leach	131
1,130	Energy efficiency policy instruments in Southeast European countries Zdravko G. Genchev	139
1,135	Bringing energy efficiency to the liberalised markets Stefan Thomas, Randall Bowie, Wolfgang Irrek	149
1,138	Energy conservation policy in Ukraine V. A. Zhovtyansky, E. P. Kolesnikova	159
1,139	A handbook in evaluation of energy saving activities Kirsten Dyhr-Mikkelsen, Preben Birr-Pedersen, Peter Bach	169
1,141	Greening the EU power market: Nordic perspectives on electricity disclosure Francis X. Johnson, Mattias Nordström	173
1,144	A sustainable development obligation for Wales Charlotte Gibson	185
1,145	The role of an advice infrastructure in the co-ordination and delivery of energy efficiency activity Colin Timmins, Philip Ivey	199
1,159	Implications of a deregulated electricity market on three major energy efficiency programs in Norway Ingunn Ettestøl, Hans Otto Haaland, Hans Nilsson	209
1,188	Teaching and learning made easy: strengthening of the European Sustainable Energy Education Forum (ESEEF) Laila K. Lindseth, Kåre Albrechtsen	217
1,193	Let's talk "energy efficiency + energy modesty" Albrecht Kaupp, Shashi Shekhar	221
1,203	International energy efficiency benchmarking for plants and installations – combining strategic energy management and enhanced energy efficiency Joerg Meyer, Martin Kruska, Andreas Trautmann	231
1,204	Carbon rationing, equity and energy efficiency Tina Fawcett	239
1,206	A case for self-deception in energy policy Harold Wilhite, Jorgen S. Norgard	249
1,209	Restructuring, liberalisation and EU accession: are transition economies moving towards more sustainable electricity markets? Diana Ürge-Vorsatz, László Paizs, Radmilo Pesic	259
1,219	Electricity labelling in the EU Kevin Lane	269
1,224	Reducing UK residential carbon emissions by 60% Brenda Boardman	273
1,227	European best practices in energy efficiency programmes and in supportive policies aimed at increasing economic, social and environmental benefits of energy efficiency on the demand-side Wolfgang Irrek, Stefan Thomas, Lorenzo Pagliano, Gianluca Ruggieri, Carlos Lopes	281
PANEL 2 COMFORT AND ENERGY USE IN BUILDINGS		
Panel leaders: Vincent Berrutto, George Henderson		
	Introduction to Panel 2	293
2,003	A detailed analysis of the historical role of energy efficiency in reducing carbon emissions from the UK housing stock Les Shorrocks	295
2,021	Residential building retrofit effectiveness analysis based on heat and water use data Denis Dogadin, Oleg Komarov, Boris Nekrasov	303
2,026	Is one litre enough? – tenants' satisfaction in passive houses Andreas Hermelink, Hartmut Hübner	315

2,033	Energy savings from insulation improvements in electrically heated dwellings in the UK George Henderson, Dan Staniaszek, Brian Anderson, Mark Phillipson	325
2,042	The design of a new European programme to promote energy-efficiency in non-residential buildings Vincent Berrutto, Paolo Bertoldi, Randall Bowie.....	335
2,047	CEPHEUS – measurement results from more than 100 dwelling units in passive houses Jürgen Schnieders.....	341
2,061	Towards a common European approach for energy labelling and assessment of existing dwellings? Guy Vekemans	353
2,062	Heating systems in EU dwellings and labelling issues Peter Iles	359
2,073	Labelling and other measures for heating systems – industry’s perspective Stefan Lechtenböhmer, Oliver Wagner	365
2,089	Economic optimisation of electric conductors in commercial and public buildings using methodology proposed by IEC 287-3-2 Carlos G. Tanides, María J. Cánepa, Osvaldo D. Petroni, Juliana Rizzone, Héctor L. Soibelzon.....	377
2,094	Meeting the latent demand for low carbon housing? Constraints on consumer choice of housing in the UK Heather Lovell	383
2,102	District heating management in restricted situation Catalin Daniel Galatanu.....	393
2,116	Conditions for the integration of energy-efficient technologies into households. Elements of the Portuguese experience Lívio Honório, Carlos Nascimento	399
2,123	The actual and potential impact of residential electrical equipment energy efficiency policies in the OECD Benoit Lebot, Paul Waide	407
2,126	Homespeed: the pan-European database for energy-efficient appliances, consumer electronics and office equipment Cateljne van de Moosdijk-Hendriks, Hans-Paul Siderius, Marion Bakker	413
2,134	Identifying energy saving opportunities in buildings by the analysis of time series data Vasco Ferreira, Paul Fleming, Paul Ajiboye	417
2,147	Energy efficiency indicators for high electric-load buildings Bernard Aebischer, Markus A. Balmer, Satkartar Kinney, Pascale Le Strat, Yoshiaki Shibata, Frédéric Varone.....	429
2,153	The process behind the project “houses without heating system” in Göteborg, Sweden Wiktorina Glad	441
2,155	Visualisation turns down energy demand Ole Michael Jensen	451
2,167	The impact of information and communication technologies on electricity consumption in Germany Clemens Cremer, Barbara Schломann, Michael Friedewald	455
2,168	DSM: major findings of an end-use metering campaign in 400 households of four European countries Olivier Sidler.....	467
2,189	Homes that work: practical, energy-efficient residential designs Larry Kinney.....	475
2,197	Role of insulation levels to reduce space heating demand in Japanese residential houses Fuminori Sano, Tsuyoshi Ueno, Daisuke Shimasaki, Osamu Saeki, Kiichiro Tsuji.....	479

2,200	Networks for energy management in the Tertiary Building Sector – replication of the successful Norwegian Building Networks program Thea Marie Mørk	485
2,231	European Window Energy Rating System, EWERS: the future European, national or international standard? Diana Avasoo, Arne Andersson	493

VOLUME 2 PROCEEDINGS

PANEL 3 LAND USE, TRANSPORTATION AND MOBILITY

Panel leaders: **Mohamed Mezghani, Dominic Stead**

	Introduction to Panel 3	503
3,008	Emissions trading in international aviation: Possible design options for an emissions trading scheme and their impact on climate change and the aviation industry Odette Deuber, Martin Cames	505
3,018	Decoupling the link between economic growth, transport growth and transport energy consumption in Europe Dominic Stead, David Banister	515
3,022	Comparison of the environmental impact from aircraft and high-speed train operation Moshe Givoni	527
3,031	Transportation and environment in Mexico city: reviving a bus system or giving in to the auto? Lee Schipper, Aaron Golub	539
3,034	Sometimes, economic arguments are better for achieving efficiency in transport: A remarkable new market based approach on Commuter Mobility Management makes accessibility and energy efficiency go hand in hand Henk van Elburg	549
3,069	Urban form and greenhouse gas emissions in Finland Irmeli Harmaajärvi	555
3,074	ECO-DRIVING Europe – building the frame for a European market for eco-driving Willy Raimund, Stephan Fickl	565
3,079	UK tax policies to control CO₂ emissions from motor vehicles – early impacts and lessons for other European countries Neil Wallis	569
3,118	The Planning System and its impact on sustainable urban form and energy demand Maarten Wolsink	575
3,121	Smart infrastructure solutions implemented in Stockholm – systematic approach on transports pays off in many ways Agneta Persson	587
3,146	Is compact urbanisation the best way to reduce travel? – a theoretical approach Kees Maat	593
3,199	Motorization and energy consumption in large cities in the OECD and Asia – tax incentives and public transportation for greater fuel efficiency Keiko Hirota, Kiyoyuki Minato	601
3,237	The SEA BUS – a biogas driven commuter ferry for public transportation Mats Dryselius	609

PANEL 4 BUILDING THE BRIDGE FROM LAB TO CUSTOMER

Panel leaders: **Lena Neij, Jacky Pett**

	Introduction to Panel 4	613
4,005	“Efficient compressed air” – a successful campaign for energy efficient compressed air systems in Germany Annegret-Claudine Agricola, Peter Radgen	617

4,019	Evaluation of the pilot procurement project in Germany Katrin Ostertag	623
4,030	Creating markets for efficient technologies by establishment of strategic niche markets Clas-Otto Wene, Hans Nilsson	631
4,046	Market transformation in the “New World”: what’s worked, what hasn’t Jennifer Thorne, Steven Nadel, Harvey Sachs, Bill Prindle, Neal Elliott.	639
4,048	Distributed generation – institutional change in the UK 2000-2003 Andreas Biermann.	653
4,049	Forecasting model for the Danish domestic sector Troels Fjordbak Larsen, Malene Hein Nybroe, Mikael Togeby	663
4,053	Creating the market for innovative approaches to delivering the best locally appropriate low carbon solution Matthew Knight	667
4,054	The result from EKO-energi in Sweden, a voluntary agreement for energy efficiency in industries Ulrika Ugglå	671
4,055	The future of Energy Star and other voluntary energy efficiency programs Alan Meier.	675
4,056	Using government purchasing power to reduce equipment standby power Jeffrey Harris, Emily Bartholomew, Joan Glickman, Alison Thomas, Alan Meier, Michelle Ware	681
4,063	The language of energy efficiency – industry vs energy freaks. Experiences from case studies Erik Gudbjerg, Agneta Persson.	693
4,064	Extending certification to energy management systems: a contribution to improve energy efficiency in industry Denis A. Coelho, João Carlos de Oliveira Matias, António Espírito Santo	703
4,071	Mid-market transformation programs: programs to promote best practices in system specification and installation Mitchell Rosenberg	709
4,077	Remote metering of electricity as a tool for the promotion of energy efficiency Aníbal T. de Almeida, Paula Fonseca, Carlos Parente Rodrigues, Artur Barros Andreas Jahn, Michael Broege.	719
4,083	Energy efficiency in commercial offices: who can transform the market? Jacky Pett , Lotte Ramsay	729
4,093	Who should administer energy-efficiency programs? Carl Blumstein, Charles Goldman, Galen L. Barbose.	741
4,099	Pilot Tailoring via Internet, a strategy to promote energy efficiency within Dutch households Iemy Brand, Jessica Dirks	751
4,106	Energy Premium Scheme (EPR) for domestic appliances in the Netherlands Hans-Paul Siderius, Annemie Loozen	755
4,107	Energy+ cold appliances beyond the A label, thanks to pan-European procurement L. Wijshoff, Sophie Attali.	761
4,108	How are new technologies brought into energy efficiency programmes? Zoltan Zavody	765
4,114	Scenarios for the integration of renewables in a European cities network P.H. Webber, D. Lack, M. Pardo	775
4,120	Perspectives on performance and policy in industry – environmental and quality concerns to enhance energy efficiency Joakim Nordqvist, Gabriel Somesfalean.	783
4,127	Joining forces – a market transformation network for pushing white LED-technology in North Rhine-Westphalia Claus Barthel, Stephan Ramesohl.	791

4,133	The need for a better approach to business energy management: engaging decision makers Jonathan Jutsen, Shel Feldman	799
4,137	The power of the public purse: energy efficiency in Europe's public sector can save 12 billion euro/year Nils Borg, Ylva Blume, Stefan Thomas, Wolfgang Irrek, Andrew Pindar	807
4,140	Web site for energy efficiency – a tool for sound investments Margot Bratt, Lotta Bångens, Anna Forsberg	819
4,178	Energy-efficient distribution transformers: a hidden opportunity for large scale energy savings Benoit Lebot, Hans De Keulenaer, Patrick Hurens	825
4,180	Marginal costs, cost dynamics and co-benefits of energy efficiency investments in the residential buildings sector Martin Jakob, Sharon Nutter	829
4,192	Agreed performance criteria for efficient housing solutions Hans Westling, Ingvar Andreasson, Ronny Bergens	843
4,194	Energy audits – best practice and decision support Kari Aamodt Espegren	847
4,214	What's the problem with non-conventional technology? The Stockholm Local Investment Programme and the eco-cycling districts Jonas R. Bylund	853
4,215	How to achieve energy efficiency actions as an alternative to grid reinforcement! Håvard Nordvik, Per Edvard Lund	863
4,216	Measures and tools for energy efficient public buildings Andrew Pindar, Stefan Thomas	873

VOLUME 3 PROCEEDINGS

PANEL 5 MARKET-BASED INSTRUMENTS

Panel leaders: **Enzo Di Giulio, Claudia Kemfert**

	Introduction to Panel 5	877
5,002	Japan's energy-saving policy and first ESCO Project on private fund undertaken by local government Etsuo Shito	881
5,020	Present condition of ESCO business for carrying out climate change countermeasures in Japan Chiharu Murakoshi, Hidetoshi Nakagami,	885
5,029	Emission trading north – benefits for the economy and the environment Katja Barzantny, Michael Hahn, Martin Kruska, Michael Klein	893
5,037	CDM-JI potential and energy efficiency: an application to Italy Enzo Di Giulio, Stefania Migliavacca, Alessandro Vaglio	897
5,041	How are EU ESCOs behaving and how to create a real ESCO market? Paolo Bertoldi, Vincent Berrutto, Mario de Renzio, Jerome Adnot, Edward Vine	909
5,043	Design of a new scheme for tradable certificates for renewable electricity and energy efficiency Thomas Huld, Paolo Bertoldi	917
5,052	New market based price regulation on combined heat and power in Denmark Jesper Koch, Marianne Nielsen, Anders B. Hansen, Henrik Lawaetz	925
5,060	Allocation of CO₂ allowances and competitiveness: a case study on the European iron and steel industry Philippe Quirion	931
5,066	How much market do market-based instruments create? An analysis for the case of "white" certificates Ole Langniss, Barbara Praetorius	943

5,072	Price responsive load programs: U.S. experience in creating markets for peak demand reductions Miriam L. Goldberg, Thomas Michelman, Mitchell Rosenberg	953
5,080	How to dismember a potent instrument – the intractability of the emission trade proposal of the European Commission Juha Honkatukia, Heikki Kemppi, Adriaan Perrels	965
5,081	The resurgence of DSM and the role of branding in power markets Adriaan Perrels, Philip Lewis	975
5,109	Pay for load demand – electricity pricing with load demand component Jurek Pyrko, Kerstin Sernhed, Juozas Abaravicius, Victoriano Pérez Mies	987
5,119	Building up a market for Third Party Financing in Upper Austria Christiane Egger, Christine Öhlinger	999
5,142	Emissions trading: decades of existence. Big Future? Popovych Olena	1005
5,158	Energy performance contracting: success in Austria and Germany – dead end for Europe? Friedrich Seefeldt	1013
5,165	Simulating emissions trading in Southwest Germany Joachim Schleich, Regina Betz, Karl-Martin Ehrhart, Christian Hoppe, Stefan Seifert	1023
5,166	Barriers to energy efficiency – an econometric analysis of determinants Edelgard Gruber, Joachim Schleich	1033
5,177	Energy performance contracting will improve climate and business Hans Westling	1041
5,195	From volatility to value: analysing and managing financial and performance risk in energy savings projects Evan Mills, Steve Kromer, Gary Weiss	1049
5,228	The Italian energy saving obligation to gas and electricity distribution companies. Scenario and case studies calculations show high environmental and economic benefits to actors (DISCOs, ESCOs, customers) and society Lorenzo Pagliano, Pierluigi Alari, Gianluca Ruggieri	1059
PANEL 6 DYNAMICS OF CONSUMPTION		
Panel leaders: Margrethe Aune, Mithra Moezzi		
	Introduction to Panel 6	1069
6,006	Reducing consumption through communal living Horace Herring	1073
6,009	Options and potentials of energy diaries: Energy diaries as a tool for identifying potential energy savings through behavioural changes Martin Cames, Bettina Brohmann	1079
6,010	Home owners partnerships and “Mulokot” centres – a dialog in search of ways to implement the turn down energy demand strategy in housing sector of Uzbekistan Rano Baykhanova, Said Inogamov	1091
6,023	User-led innovations, participation processes and the use of energy technologies Michael Ornetzeder, Harald Rohrer	1099
6,035	A dynamic structuration approach to information for end-user energy conservation David L. Goldblatt	1111
6,039	Individual demand for energy services Roland Menges	1123
6,050	Beyond households: discovering the collective consumer Corinna Fischer	1135
6,051	Bill me this way! – customer preferences regarding electricity bills in Sweden Kerstin Sernhed, Jurek Pyrko, Juozas Abaravicius	1147
6,065	From motivation and cognition theories to everyday applications and back again: the case of product-integrated information and feedback L. T. McCalley	1151

6,076	Long term effects of an energy efficiency advertising campaign Klaus Wortmann, Werner Möhring-Hüser	1159
6,088	Learning about smart systems for comfort management and energy saving in office buildings Jaap Jelsma, René Kamphuis, Wim Zeiler	1171
6,097	Barriers to efficient use of energy in public higher education buildings – a case study A. Gomes Martins, Simão Paredes	1181
6,122	Evaluating energy efficiency campaigns targeted at children: towards a best practices methodology Heming Bjørnå, Kirsten Dyhr-Mikkelsen	1191
6,129	Social obstacles in curbing residential energy demand Per Anker-Nilssen	1195
6,150	Hard to Reach and Hard to Help: bringing energy efficiency to elusive audiences Lotte Ramsay, Jacky Pett	1205
6,157	Making sense of energy advice Sarah Darby	1217
6,173	Energy efficiency as environmental justice: promoting urban sustainability through energy efficiency improvements in multi-family housing in Latvia Guntra Aistara	1227
6,184	A socio-anthropological approach to energy-related behaviours and innovations at the household level Françoise Bartiaux	1239
6,202	Learning by having fun Liv R. Lindseth	1251
6,210	Turning down demand through electricity disclosure: are consumers ready? A survey of Hungarian residences and businesses Réka Soós, Diana Ürge-Vorsatz	1261
6,220	Energy savings in Scandinavian households: an assessment of 25 years development Fridtjof Unander, Ingunn Ettestøl, Mike Ting	1273
6,230	Information technology meets energy efficiency: a fruitful combination Peter T. du Pont, Henrik Rytter Jensen, Frantz Longhi	1281
	Indexes	
	Author index	1287
	Keyword index	1291