

# Report on the 6th IAMC Annual Meeting



photo by Mr. Masami Daito

National Institute for Environmental Studies  
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This is the report on the “6th Integrated Assessment Modeling Consortium (IAMC) Annual Meeting” held at National Institute for Environmental Studies (NIES), Tsukuba, Japan, from 28th to 30th October 2013.

This meeting was supported by the Environment Research and Technology Development Fund (2A-1103) of the Ministry of the Environment, Japan, and Climate Change Research Program of NIES. This report was written by Dr. Hancheng Dai, Dr. Shinichiro Fujimori, Dr. Tomoko Hasegawa, Dr. Mikiko Kainuma, Dr. Chan Park, Dr. Diego Silva, Dr. Xuanming Su, Ms. Akemi Tanaka, Dr. Rui Xing, and Dr. Toshihiko Masui.

## Opening Plenary

Chaired by John Weyant

### Welcome

Akimasa Sumi

The 6th IAMC Annual Meeting was opened with the welcome speech by the president of NIES, Dr. Sumi. He introduced the activities in NIES related to climate change issues and stressed the importance of modeling.

### Introduction

John Weyant

This session discussed the last one year's activities mainly related to IAM community, and provided updated information about the broad issues within IAMs and between CM and IAV communities. First, the recent model inter-comparison projects were introduced. The main topics, participants and results were briefly summarized for each project. It was revealed that many projects made thousands of scenarios and published hundreds of papers which are going to be cited in AR5. Second, the diagnostics and validation working group progress was shown. Only the diagnostics framework was prepared at this stage and other issues such as how to design the hindcasting process have not yet been clearly represented. However, it is expected to be carried out in the next ADVANCE project. Third, the next sets of scenario design were shown. A key point was about the types of information which should be provided to climate modeling community. IAM will make some scenarios combining RCP and SSP, but CM community has requirements particularly for non-Kyoto forcing gases and land use change pattern.

### Lessons from Recent Model Comparison Exercises

Massimo Tavoni, Elmar Kriegler, John Weyant

This presentation showed the results of EMF27, APMERE, RoSE, and LIMITS exercises. In addition, the results of EMF 24, 28, 29 studies were also shown.

### New scientific working group on evaluation and diagnostics: presentation and moderated discussion

Elmar Kriegler, Jae Edmonds, John Weyant

This presentation discussed how the study about Diagnostics & Validation would be designed.

### Update on the Scenarios

Detlef van Vuuren, Brian O'Neill, Jae Edmonds

This session showed next scenario framework beyond individual RCP and SSP processes. Main focus was on how to provide information to CMIP6.

## Parallel Session: Modeling Impacts and Adaptation in Integrated Assessment

Chaired by Kate Calvin, Juan Carlos Ciscar, Tom Kram

In this session, the presenters showed the impacts of climate change, and the modeling approach of impact assessment. Most of them took into account the impacts on multiple sectors, and they considered both climate change and socioeconomic change. Some of the presenters introduced their study projects.

### Determinants of uncertainty in population exposure to climate-related extremes

Brian O'Neill

O'Neill presented the future risk of heat impacts on the population, due to both changes in population and changes in climate. He used 8GCM-RCM simulations under SRES A2 scenario for the US region. The outcome measures were hazard and exposure. He showed that projected climate change and population changes are of similar importance in influencing increases in exposure to extreme heat.

### Reversal of the land biosphere carbon balance under climate and land-use change explored with IMAGE-LPJ

Tom Kram

Kram presented the feedback of climate change and land use change on terrestrial carbon sequestration. Using IMAGE (IAM) and LPJmL (DGVM) he analysed 2 emission scenarios (RCP baseline and SRES A2), 7 climate sensitivities (from 2.0 to 5.0), and 16 climate change patterns. The results showed that terrestrial carbon flux up to 2100 has wide range, but many cases showed terrestrial carbon reversal (i.e., from sink to source). The study indicates that risk of terrestrial carbon reversal is substantial.

### A scenario analysis on adaptation to impacts of precipitation on crop harvests in China

Taoyuan Wei

Wei estimated the impacts of precipitation on crop yield with a regression analysis and a CGE analysis based on GRACE model. In the CGE analysis, he simulated three extreme-precipitation scenarios taking account of autonomous adaptation. The results showed that the impact at national level with adaptation was modest on rice yield and wheat yield, and it was observable on maize yield.

### Assessing environmental feedbacks on economic growth and the benefits (and trade-offs) of policy action: OECD-CIRCLE

Elisa Lanzi

Lanzi introduced the Costs of Inaction and Resource Scarcity: Consequences for Long-term Economic Growth (CIRCLE) project. The objectives of the project are to quantify the economic impacts of changes in environmental quality, climate change, and degradation and scarcity of natural resources, and to assess direct benefits, co-benefits, and trade-offs associated with policy responses to these

environmental challenges. Three areas, climate change, air pollution, and initial analysis on water-land-energy “nexus” were considered.

#### Climate impacts in Europe: an integrated assessment

Peter Russ

Russ introduced the JRC PESTA II project. The research questions of the project were: what are the climate impacts, what are the distributional implications of climate impacts, how much adaptation can reduce climate impacts, and whether spatial (cross-country) spillovers are significant. In the project three stages (modeling future climate, modeling physical impacts, and modeling economic impacts) were integrated. He showed preliminary results of biophysical impacts and economic impacts.

#### Climate Change Impacts in Latin American: A Multi-Model Analysis

Kate Calvin

Calvin estimated the impacts of climate change in Latin America, focusing on agriculture, building energy demand, and hydropower sectors. She showed preliminary results in each sector, and explained the steps of the study. In the future she will address uncertainty with regard to socioeconomic scenario, emission scenario, climate model, translation from climate model to economic model, and economic model.

#### AgMIP/ISIMIP Talk

Katja Frieler

Frieler introduced an overview of the Inter-Sectoral Impact Model Intercomparison Project (ISI-MIP), and several results of ISI-MIP fast track. The fast track includes sectoral overview papers, cross-sectoral synthesis papers, extreme events (droughts and floods), and water supply vs. water demand.

#### Overview of the CIRA Study

Jim McFarland

McFarland introduced the Climate Change Impacts and Risk Analysis (CIRA) project. CIRA is a policy analysis tool, and examines regional impacts in the U.S. across sectors (e.g., water resources, human health, ecosystems, energy). CIRA uses consistent economic, emission, and climate data to estimate impacts under scenarios with and without GHG mitigation. The results of emissions, regional climate uncertainty, and sectoral impacts were showed.

## Parallel Session: Using Integrated Assessment Models to Inform Near-Term International Policy Discussions

Chaired by Gunnar Luderer, Peter Russ, Massimo Tavoni

In this session, near-term international policy discussions were presented. The topics covered emission scenarios toward 2 degree target at various scales -from global to scale, mitigation policies including domestic emission allocation, NAMA, and so on.

Analysing the emissions resulting from the pledges under the Cancun Agreements from integrated assessment models

Michel Den Elzen (Detlef van Vuuren)

The session kicked off by a discussion on pledged reductions and mitigation plans of countries under the Cancun Agreements and the 2 °C emissions gap by van Vuuren on behalf of Michel Den Elzen. The 2020 emissions resulting from the pledges vary depending on whether pledges are conditional or unconditional and whether lenient or strict accounting rules are applied. Current pledges are insufficient to meet two degree target. The global 2020 emissions resulting from the pledges can be lowered by minimizing use of surplus emission credits & LULUCF credits, avoiding double-counting of offsets, and pursuing more ambitious (“conditional”) pledges.

Implications of near-term climate policy for limiting warming to 2°C : a synthesis of the AMPERE, LIMITS, and ROSE projects

Nils Johnsson

Implications of near-term climate policy for limiting warming to 2°C were presented by Johnson. A synthesis of the AMPERE, LIMITS, and ROSE projects was compared. The projects include stringency of policies and technology limitations. Few scenarios examine less-than-optimal near-term policy up to 2030 coupled with a 66% probability of meeting 2°C target (450 ppm). The main findings are that less-than-optimal policy up to 2020 does not seem to have a large impact on achieving the 2°C target when compared with optimal policy. Shifting from 66% to 50% probability of limiting warming to 2°C significantly reduces the required CO2 emission reduction rate and the cost of mitigation. Limitations to the availability and/or potential of certain mitigation technologies can be more costly than policy delays.

A New Approach of Carbon Emission Allocation among Stakeholders: An Expansion of Multiregional and Multisectoral Dynamic Energy Economic Model THERESIA

Shunsuke Mori

This presentation by Mori focused on carbon emission allocation among stakeholders. An expansion of multiregional and multi-sectorial dynamic energy economic model was introduced. Upstream allocation (the producers and importers of primary energy sources are responsible for all carbon emissions), downstream allocation (responsibility of energy supplier is not directly dealt with), upstream allocation for non-electric energy source producers and downstream allocation for power

generation companies, and efficiency (carbon emission is distributed between energy conversion companies and consumers according to the conversion efficiency) methods were used. The effects of sectoral emission control under partial participation are small, but “producer based” accounting seems to suppress the carbon emission in total. Trade adjusted carbon emission accounting seems to cause larger “carbon export” than the “carbon import” which appears in the “producer based” accounting.

Making or breaking climate targets: The AMPERE study on staged accession scenarios for climate policy

Nico Bauer

The AMPERE study of staged accession scenarios for climate policy were presented by Bauer. The focus in these projects is to find policy realism in Integrated Assessment Models and to show reference policy and staged accessions in AMPERE WP3. The key finding is that early action can reduce the transitional costs. In China the reduction in consumption growth is very painful in the near-term, because of coal lock-in and the fact that gas substitution is difficult. For policy realism including fossil fuel subsidies, royalties, final energy policies (incl. taxes; e.g. petrol tax in EU), and trade restrictions policy like natural gas from Iran were suggested.

2020 emission windows required to limit warming to below 2°C

Joeri Rogelj

Rogelj presented a systematic scenario analysis of how different levels of short-term 2020 emissions would impact the technological and economic feasibility of achieving the 2 degree target in the long term.

Economic mitigation challenges: how further delay closes the door for achieving climate targets

Gunnar Luderer

Luderer explored in his presentation the mitigation cost, economic challenges and requirements of transformation pathways towards 2 degree target.

Impacts of Thailand LCS scenarios: NAMAs and peak-CO<sub>2</sub> towards 2050

Bundit Limmeechokchai:

Limeechokchai presented Thailand’s low-carbon scenario towards 2050 and proposed six actions to achieve low-carbon society.

Probabilistic Integrated Assessment of Optimal Climate Policies

Laurent Drouet

This presentation showed how robust climate policies could be selected under “current knowledge“ of uncertainty by introducing uncertainties in the WITCH model.

## Parallel Session: Modeling Energy Demand in Integrated Assessment

Chaired by Volker Krey, Detlef van Vuuren, John Weyant

In this session, modeling energy demand in top-down and bottom-up type integrated assessment models was discussed. Special attentions were given to topics like comparing energy use for space heating across IAMs and Earth System Models, climate change impacts on global buildings, advanced electric end-use technologies, integrating consumer choice into IAMs, the need for better database, energy demand of China and India under stringent climate targets, and the latest ongoing projects.

### Comparing energy use for space heating and cooling across IAMs and Earth System Models

Bas van Ruijven

van Ruijven highlighted that there is a large deviation of building energy demand estimations from IAMs and Earth System Models (ESM) for the past year (2005), also estimations for the future (2100) considering climate change are quite different, where ESMs indicated 25% deduction in total and IAMs indicated increase of energy demand (4% and 23%).

### Impacts of Climate Change on Global Buildings: Who Gains and Who Loses?

Jiyong Eom

Eom presented the impacts of climate change on global building from the perspectives of increase and decrease in degree days, behavior and price.

### Exploring the dual role of advanced electric end-use technologies

Masahiro Sugiyama

Sugiyama showed that the bioenergy may be a better final energy carrier than electricity, but electric end-use technologies (heat pump & electric vehicles) bring merits in term of integrating renewable energy sources.

### Integrating Vehicle Consumer Choice into the MESSAGE Integrated Assessment Model: Implications for Energy Efficiency and Advanced Technology

Kalai Ramea

Ramea demonstrated that the resolution of an IAM (MESSAGE) could be improved by disaggregating the demand side into groups based on results from a conceptual choice model.

### Energy demand modeling: the need for more detail

Detlef van Vuuren

van Vuuren showed that reliable databases are essential for modeling energy demand with a bottom-up approach.

Analyzing the feasibility of Low carbon development in China and India using AIM/CGE model

Thanh-Tu Tran, Shinichiro Fujimori

By hard-linking the top-down type AIM/CGE model with bottom-up type AIM/Enduse model, the energy demand of China and India under stringent global emission target over 2005-2050 periods was analyzed by Fujimori. Results reveal that both countries would still depend on fossil fuels in industry and transport sectors, but residential and service sectors would switch to low-carbonized electricity.

New research on energy demand

John Weyant

Weyant first introduced three recent projects that focus on such topics as identifying structural barriers of energy saving technology diffusion in building industry, improving energy simulation tools for buildings and using social networks to incentivize household energy saving. Then he introduced three other new projects concerning smart meter, thermo-electrics for cars, and parking pricing with off-peak commuting incentives.

## Parallel Session: Understanding Mitigation, Adaptation, and Impacts through a Multi-Objective Lens

Chaired by Jae Edmonds, David McCollum, Kiyoshi Takahashi

This session focused on a series of issues about the climate change mitigation, adaptation and impacts from different sectors and related perspectives, such as water resources, energy security, air pollutions, land use, transport, economy development, food security etc. The climate change mitigation policy and impacts assessment were well interpreted in this session, but there were not much contents about climate change adaptation.

According to the discussion in the session, integrated modeling activities were being done actively.

These were some of the viewpoints addressed in the presentations.

- Synergy/tradeoff relationships between policies
- Spillover effects of policies
- Importance of non-climatic factors in impact analyses
- Model integration
- IAM-ESM integration
- Integration of sector impact models (using IAM as a platform)
- Risk analyses (Realization of large number ensembles)
- Multi-criteria-Analyses tool
- Multi-objective (Multi-criteria, Multi-metric, etc.)
- Climate change
- Water resource
- Air pollution
- Food / Nutrition
- Energy security
- Terrestrial ecology
- Poverty reduction / Distribution gap
- Improvement in transportation (Infrastructure)

### Assessing the Roles of Regional Climate Uncertainty, Policy, and Economics on Future Risks to Water Stress: A Large-Ensemble Pilot Case for Southeast Asia

C. Adam Schlosser

Schlosser et al. assessed the roles of regional climate uncertainty, policy, and economics on future risks to water stress up to 2050 in Southeast Asia, based on the MIT Integrated Global System Model (IGSM). Two numerical experiments were performed in this study: global simulation with Southeast Asia zoom lens and large-ensemble case for Southeast Asia. Changes in total population under water stress and zonal trends in precipitation were found in this study.

Climate policies can help resolve energy security and air pollution challenges

David McCollum

McCollum et al. evaluated the synergies of climate policies on energy security and air pollution challenges by a comprehensive assessment using MESSAGE-MACRO and MAGICC models. This study showed that the climate policy could improve air quality and thus reduce energy-related health impacts worldwide; it could increase the use of domestically available renewable energy sources and reduce the pollution control costs and energy security costs.

#### BECCS and sustainable land-use in mitigation pathways

Etsushi Kato

Kato et al. first evaluated the CO<sub>2</sub> emissions by land-use change in the 21st century using each RCPs scenario by the VISIT model, while considering book-keeping of the carbon emission from deforested biomass and the re-growing uptake from abandoned cropland and pasture employing the gridded transition land-use data from RCPs. The study showed that constructing consistent land-use change carbon emission scenario with the gridded land-use change data required precise considerations of effects of CO<sub>2</sub> fertilization and assessments of relationships among climate change, food access and energy access with an Integrated Assessment Model.

#### Assessments of Relationships among Climate Change, Food Access and Energy Access with an Integrated Assessment Model

Keigo Akimoto

Akimoto et al. assessed the relationships among climate change, food access and energy access with the ALPS Models. It indicated that there were not only synergy effects between climate change and other sustainable development issues but also trade-offs; and distribution issues within countries and regions would be important for sustainable development.

#### Low Carbon Transport in India: A Co-benefits and Risk Assessment

Priyadarshi R. Shukla

Low carbon transport scenario in India was presented by Priyadarshi R Shukla. The low carbon development scenario contained sustainable mobility in cities, technology, clean and low carbon fuels, and sustainable logistics such as enhanced NMT, public transport, urban design, ICT, CNG, and etc.). Overall CO<sub>2</sub> reduction in 2050 was substantial. Sustainable low carbon transport delivered significant co-benefits (e.g., reduced air pollution, energy security, energy access, etc.).

#### A policy for a warmer society and a colder climate?

Solveig Glomsrød

The presentation by Glomsrød related to study the effect of climate policies in China on economic growth considering policies that reduce the rural-urban income gap. The results were based on projected Global CGE (GRACE) developed at CICERO using Edgar database, IIASA and RCP2.6. The policy scenarios contained stabilizing CO<sub>2</sub> emission from fossil fuel combustion in China from 2015 by introducing a carbon tax and recycling the tax revenue as a land subsidy to farmers. The results indicated that climate policy in China does not necessarily harm the economy because climate

policy would increase GDP and reduce poverty.

### The Consequence of Climate Mitigation on Food Security

Tomoko Hasegawa

The presentation by Tomoko Hasegawa was about the consequence of climate mitigation on food security. This research quantified three impacts: climate change impact, bioenergy impact, and macroeconomic impact, on food consumption and risk of hunger resulting from climate change and the mitigation measures, according to an integrated assessment from AIM/CGE and M-GAEZ model. The results showed that some measures would be necessary to reduce the negative impacts on food consumption together with mitigation measures.

## Poster session

10 posters were displayed parallel to the IAMC meeting.

Topics of research presented in the posters covered climate mitigation modeling, climate impact assessments, air pollutants, and urban planning issues, among others.

The poster displays were sparsely visited by attendees to the IAMC, with informal discussion on poster contents and exchange of information on research activities in general.

The poster session provided an additional opportunity for researchers in the IAM community, in particular to young researchers, to communicate with other colleagues and strengthening common understanding of modeling issues.

### Poster titles:

- K. Takahashi (NIES)

Integrated Research on the Development of Global Climate Risk Management Strategies

- Y. Yamagata (NIES)

Geographically explicit IAM for climate compatible urban development scenarios: synergies and trade-offs between mitigation and adaptation measures

- Silva H. Diego (NIES)

Global assessment of onshore wind energy with transmission costs

- Michio Kawamiya (JAMSTEC)

Impact of rapid sea-ice reduction in the Arctic Ocean on the rate of ocean acidification

- Kaoru Tachiiri (JAMSTEC)

Allowable carbon emissions for medium to high mitigation scenarios

- Christina Zapata (UC Davis)

PM2.5 co-benefits of climate change legislation part 1: California's AB 32

- Shin Sakaue (Sophia Univ.)

Computable General Equilibrium Analyses of Global Climate Agreements: A Game Approach

- Koichi Yamaura (Sophia Univ.)

An Assessment of Global Warming and Biodiversity: CGE EMEDA Analysis

- Yuki Ishimoto (IAE)

Global CO<sub>2</sub>-free hydrogen system toward 2050

- Kenichi Wada (RITE)

The impact of behavioral and institutional factors in energy investment decision

## Closing Plenary

Chaired by John Weyant

This session outlined the most recent activities of IAMC as a whole. The contents covered the recent activities of IAMC towards IPCC AR5 and beyond, the summary reports of the sessions of the 6<sup>th</sup> Annual IAMC Meeting, the outline of model comparison projects, and the priorities for future IAMC activities. The presentations were finalized with an overall discussion on the consortium priorities and specific issues recalled from previous IAMC meetings.

## Data protocols SWG Session

Volker Krey

Three topics were covered in this presentation

- 1) AR5 scenario database: progress in completion of database of scenario analyses from modeling comparison exercises.
- 2) Model documentation: definition of guidelines for documenting models in order to improve comparability of results across modeling teams.
- 3) New activities for IAMC: publication of template for sharing output data for time-series; develop standards for sharing information on input assumptions, spatial data, data exchange protocols, and region definitions.

## Reports back from the break-out sessions

Rapporteurs

Speakers summarized the purpose, contents and discussion points of each presentation session at the meeting.

## Ongoing and upcoming model comparisons

John Weyant

Review of project's contents and activities: Latin America (LAMP), climate change impacts and risks (CIRA), AMPERE, LIMITS, among others.

Introduction of online software (VEDAViz) to display model comparison results.

Discussion on inviting research teams in other regions, fund raising and budget allocation issues.

Work to summarize and disclose outcomes of multiple model comparison projects.

## IAMC Priorities

Jae Edmonds

Weyant on behalf of Edmonds summarized the research priorities at IAM community for 2012 and 2013, model inter-comparison projects, and capacity building priorities for 2012 and 2013.

## Open Discussion: IAMC Priorities

Detlef van Vuuren

Discussion on priorities touched the following points:

Suitability of “integrated assessment” to describe community’s research, format and type of data needed for exchange information and future research priorities, people in charge of standards at IAM community, reduced number of model comparison projects, how to summarize the outcomes from comparison projects for external audience (e.g. policy makers).

Open Discussion: Other Business: (1) Pindyck critique and reponse, (2) journal/publications, (3) website, (4) other priorities TBD

Detlef van Vuuren

Main outcomes of the meeting were summarized, highlighting the future steps for work and collaboration in the community, initiating interaction with other research communities, among others. Finally, the following issues were discussed:

(1) Pindyck critique and response,

van Vuuren recalled a working paper criticizing IAM community research’s role and value. In view of the community, the paper is providing wrong facts on IAM’s research (maybe due to misunderstanding of concepts, terminology and/or IAM’s research contents itself). A discussion was started on how to respond to this paper, for example as a paper published in a formal journal.

Some members strongly opposed to publish a formal response as a community, arguing that such response will increase the visibility and value of the critique. Instead, the paper should be ignored. Other members suggested writing a response in paper format with a single or few co-authors, instead of a response as IAM community. Accordingly, a call for volunteers for the paper drafting was announced.

(2) journal/publications,

Start-up journal or working paper publication to collect IAM community’s research.

(3) website,

Improve capabilities of IAMC website for exchange data, research collaboration, share information on events, among others.

## Day3

### Data sharing presented by Volker

- Which data?- spatial data, population distribution, Geo-share, water, household etc.
- Spatial land use data can be provided by George Hurt.
- Link to CMIP6 (Landuse MIP and aerosol MIP)
- Regional classification; 30 or 4/5 or 10; depending on the purpose.
  
- 2 steps to share data;
  - 1) Share who has which data; Data catalog.
  - 2) How to use it. Purpose; Data format.
  
- How to share data (Data exchange format, super template with documentation; IIASA database.)
- Call for volunteers to working on this. Share by mailing list.
  - AIM/Enduse, DNE+21

### Presentation by Elmar

- Subgroup co-ordinating pioneering work between teams
  - Hindcasting; data, model structure, indicators.
  - Diagnostic
  - The WG will send email to all after the meeting to share the information
- 8 people signed to the member of the subgroup. They will discuss on Skype.
- Who is leading this group/tasks?
  - Jae is interested in the work.
  - Adam?
- Validation using stylized facts.
  - Relation between energy intensity and GDP per capita.
  - PE (FE?) per capita increases with per capita income.
  - Electricity share in FE increases & solids share in FE decreases with per capita income.
  - U-shape of industry share in FE with increasing per capita income.
  - Increasing share of services/transport in FE with increasing per capita income.

### Presentation by Tom Kram

- Scenario Scientific Working Group (SWG)
  - 1. Scenario group under IAMC
  - 2. Quantification group under ICONICS
  - 3. Scenario MIP under CMIP6
- We propose that:

- Make person overlap between Group 1 and 2, assuming that key activity from IAM side is working on SSPs.
- Other activities of Group1:
  - ✓ Relationship with 3. Selection of experiments/ forcing scenarios for CMIP6 protocol (2014). + set of research questions.
  - ✓ Relationship with 2 + reporting ICONICS → SWG → IAMC; incl. platform for IAMs currently not in SSP quantification.
  - ✓ SPA policies, mitigation & adaptation.
  - ✓ Extend narratives with elaborations in various areas; policy-relevance.
  - ✓ What should we do before AR6 ?.
  - ✓ More than 10 people in the room signed up to the member of the SWG 1- 3.

## Appendix 1: Agenda for the 5th Annual IAMC Annual Meeting

Day 1: Monday, October 28, 2013 (National Institute for Environmental Studies)

Opening Plenary (Ohyama Memorial Hall)

Chair: John Weyant

8:30	8:40	Welcome	Akimasa Sumi
8:40	9:00	Introduction	John Weyant
9:00	10:00	Lessons from Recent Model Comparison Exercises	Massimo Tavoni, Elmar Kriegler, John Weyant
10:00	10:30	Break	
10:30	11:45	New scientific working group on evaluation and diagnostics: presentation and moderated discussion	Elmar Kriegler, Jae Edmonds, John Weyant
11:45	12:30	Update on the Scenarios	Detlef van Vuuren, Brian O'Neill, Jae Edmonds
12:30	13:30	Lunch	

Parallel Session: Modeling Impacts and Adaptation in Integrated Assessment (Ohyama Memorial Hall)

13:30	13:40	Introduction	Kate Calvin, Tom Kram
13:40	14:05	Determinants of uncertainty in population exposure to climate-related extremes	Brian O'Neill
14:05	14:30	Reversal of the land biosphere carbon balance under climate and land-use change explored with IMAGE-LPJ	Tom Kram
14:30	14:55	A scenario analysis on adaptation to impacts of precipitation on crop harvests in China	Taoyuan Wei
14:55	15:20	Assessing environmental feedbacks on economic growth and the benefits (and trade-offs) of policy action: OECD-CIRCLE	Elisa Lanzi
15:20	15:45	Break	
15:45	16:10	Climate impacts in Europe: an integrated assessment	Peter Russ
16:10	16:35	Climate Change Impacts in Latin American: A Multi-Model Analysis	

			Kate Calvin
16:35	17:00	AgMIP/ISIMIP Talk	
			Katja Frieler
17:00	17:25	Overview of the CIRA Study	
			Jim McFarland
17:25	17:55	Moderated Discussion of Research Priorities	
			Kate Calvin, Juan Carlos Ciscar, Tom Kram
Parallel Session: Using Integrated Assessment Models to Inform Near-Term International Policy Discussions (Middle Meeting Room)			
13:30	13:35	Introduction	Gunnar Luderer, Peter Russ, Massimo Tavoni
13:35	14:00	Analysing the emissions resulting from the pledges under the Cancun Agreements from integrated assessment models	
			Michel Den Elzen
14:00	14:25	Implications of near-term climate policy for limiting warming to 2°C : a synthesis of the AMPERE, LIMITS, and ROSE projects	
			Nils Johnsson
14:25	14:50	A New Approach of Carbon Emission Allocation among Stakeholders: An Expansion of Multiregional and Multisectoral Dynamic Energy Economic Model THERESIA	
			Shunsuke Mori
14:50	15:15	Making or breaking climate targets: The AMPERE study on staged accession scenarios for climate policy	
			Nico Bauer
15:15	15:45	Break	
15:45	16:10	2020 emission windows required to limit warming to below 2°C	
			Joeri Rogelj
16:10	16:35	Economic mitigation challenges: how further delay closes the door for achieving climate targets	
			Gunnar Luderer
16:35	17:00	Impacts of Thailand LCS scenarios: NAMAs and peak-CO2 towards 2050	
			Bundit Limmeechokchai:
17:00	17:25	Probabilistic Integrated Assessment of Optimal Climate Policies	
			Laurent Drouet
17:25	17:55	Moderated Discussion of Research Priorities	
			Gunnar Luderer, Peter Russ, Massimo Tavoni

Day 2: Tuesday, October 29, 2013 (National Institute for Environmental Studies)

Parallel Session: Modeling Energy Demand in Integrated Assessment (Ohyama Memorial Hall)

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|-------|-------|--|---|
| 8:30  | 8:35  | Introduction   | Volker Krey, Detlef van Vuuren, John Weyant |
| 8:35  | 9:00  | Comparing energy use for space heating and cooling across IAMs and Earth System Models   | Bas van Ruijven                             |
| 9:00  | 9:25  | Impacts of Climate Change on Global Buildings: Who Gains and Who Loses?  | Jiyong Eom                                  |
| 9:25  | 9:50  | Exploring the dual role of advanced electric end-use technologies  | Masahiro Sugiyama                           |
| 9:50  | 10:15 | Integrating Vehicle Consumer Choice into the MESSAGE Integrated Assessment Model: Implications for Energy Efficiency and Advanced Technology | Kalai Ramea                                 |
| 10:15 | 10:45 | Break  |   |
| 10:45 | 11:10 | Energy demand modelling: the need for more detail  | Detlef van Vuuren                           |
| 11:10 | 11:35 | Analyzing the feasibility of Low carbon development in China and India using AIM/CGE model   | Thanh-Tu TRAN, Shinichiro Fujimori          |
| 11:35 | 12:00 | New research on energy demand  | John Weyant                                 |
| 12:00 | 12:30 | Moderated Discussion of Research Priorities  | Volker Krey, Detlef van Vuuren, John Weyant |

Parallel Session: Understanding Mitigation, Adaptation, and Impacts through a Multi-Objective Lens (Climate Change Research Hall)

- |      |       |  |  |
|------|-------|--|--|
| 8:30 | 8:35  | Introduction   | Jae Edmonds, David McCollum, Kiyoshi Takahashi |
| 8:35 | 9:00  | Assessing the Roles of Regional Climate Uncertainty, Policy, and Economics on Future Risks to Water Stress: A Large-Ensemble Pilot Case for Southeast Asia | C. Adam Schlosser                              |
| 9:00 | 9:25  | Climate policies can help resolve energy security and air pollution challenges   | David McCollum                                 |
| 9:25 | 9:50  | BECCS and sustainable land-use in mitigation pathways  | Etsushi Kato                                   |
| 9:50 | 10:15 | Assessments of Relationships among Climate Change, Food Access and Energy Access with an Integrated Assessment Model                                       |  |



9:00 10:30 Working Group Meetings TBD

10:30 11:00 Break

11:00 12:30 Working Group Meetings TBD

Appendix 2: Participant list (in alphabetical order of the affiliation)

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