

IAMC Scientific Working Group on Data Protocols and Management

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Part I: Discussion of the Data Request for IPCC AR5

Acknowledgements

- Leon Clarke
- Elmar Kriegler
- AR5 WGIII Chapter 6 Writing Team
- IPCC WGIII Co-Chairs and TSU
- IAMC Steering Committee
- ... and many others

AR5 WG III Outline

I: Introduction

1. Introductory Chapter

II: Framing Issues

2. Integrated Risk and Uncertainty Assessment of Climate Change Response Policies

3. Social, Economic and Ethical Concepts and Methods

4. Sustainable Development and Equity

III: Pathways for Mitigating Climate Change

5. Drivers, Trends and Mitigation

6. Assessing Transformation Pathways

7. Energy Systems

8. Transport

9. Buildings

10. Industry

11. Agriculture, Forestry and Other Land Use (AFOLU)

12. Human Settlements, Infrastructure and Spatial Planning

IV: Assessment of Policies, Institutions and Finance

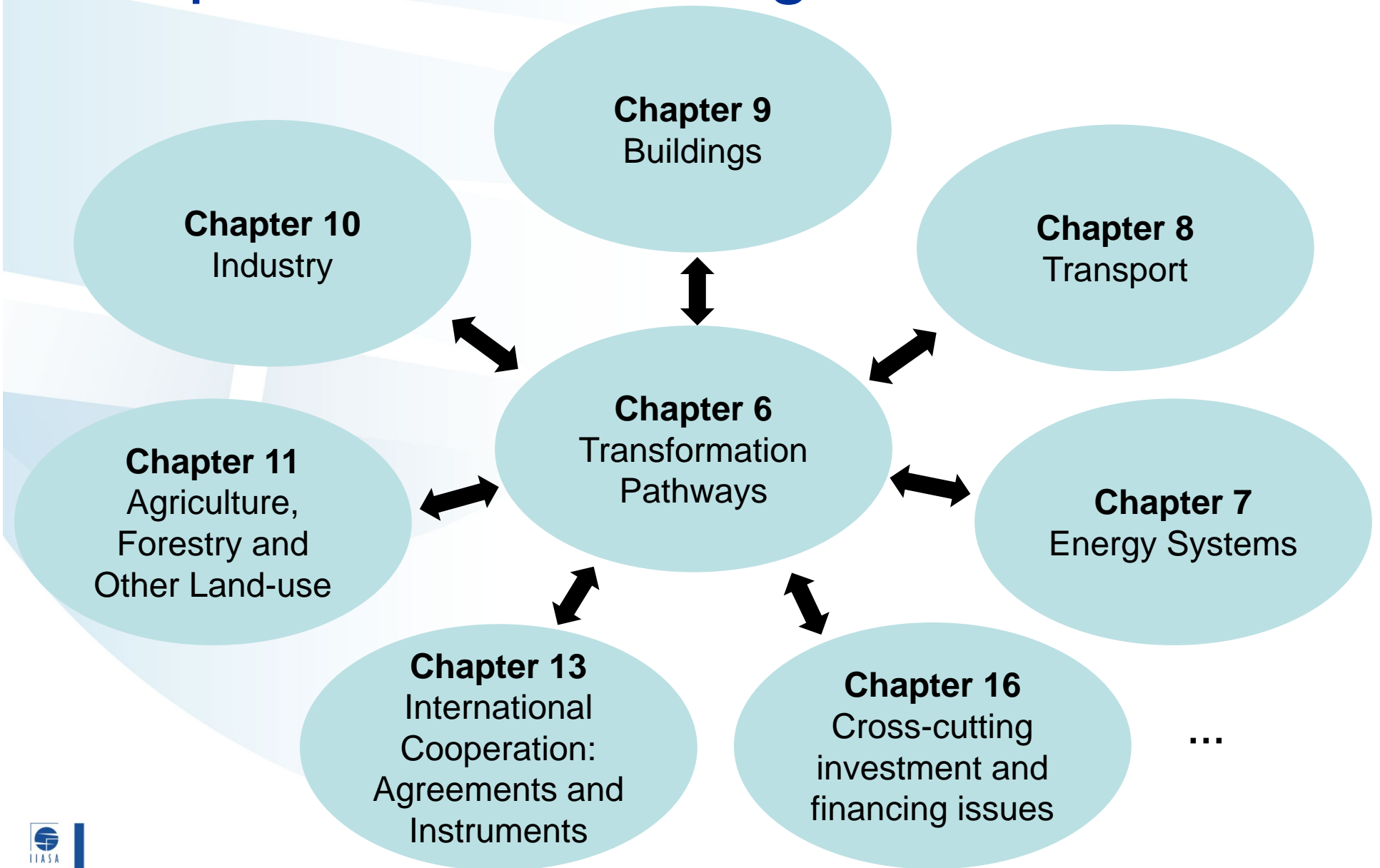
13. International Cooperation: Agreements and Instruments

14. Regional Development and Cooperation

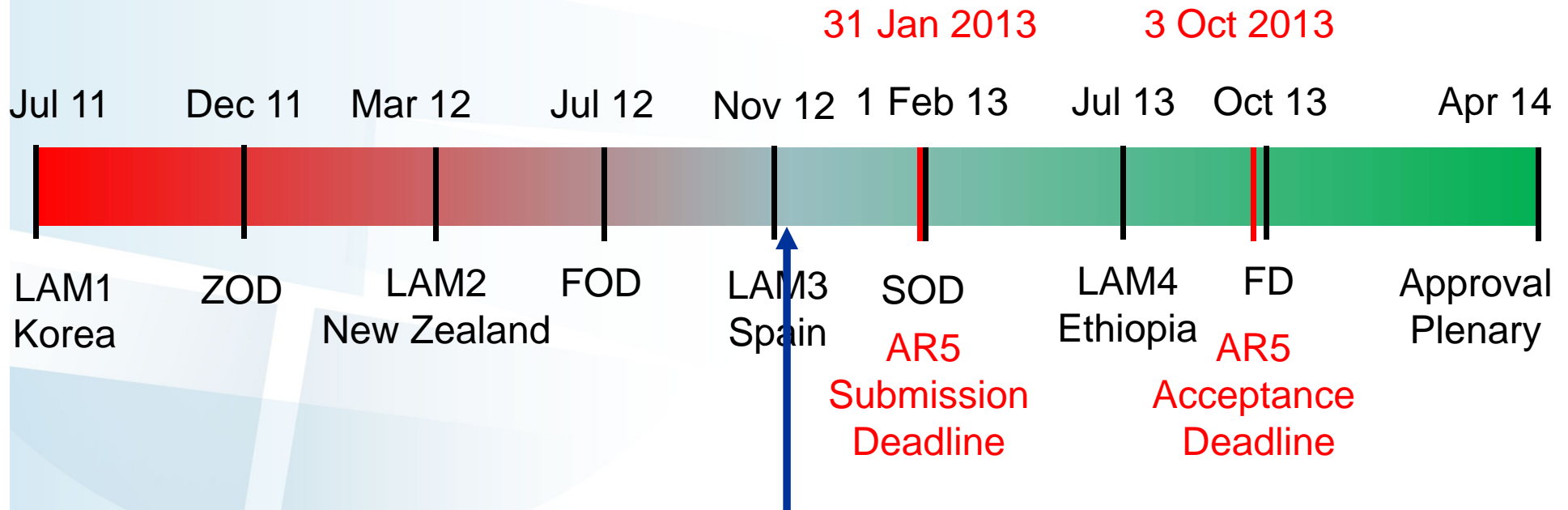
15. National and Sub-national Policies and Institutions

16. Cross-cutting Investment and Finance Issues

Chapters in AR5 using scenario data



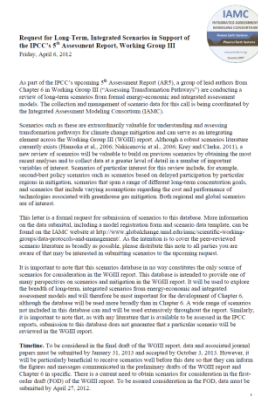
AR5 WG III Timeline



- Report is well advanced – only one Lead Author Meeting ahead
- Only limited time left to include new material

Situation before the FOD

- Development of data template for AR5 database based on input from sectoral chapters and existing modeling comparison studies (March 2012)
- Open call for submissions of scenarios to modeling community via IAMC with IPCC endorsement (6 April 2012)
- Submissions by modeling teams until early June 2012 made it into the FOD



Status of AR5 database for FOD

Summary (June 2012)

- 417 submitted scenarios
- 21 model versions from 9 modeling teams
- 8 modeling comparison exercises
(EMF22, ADAM, RECIPE, AME, EMF27, RoSE, AMPERE, LIMITS)

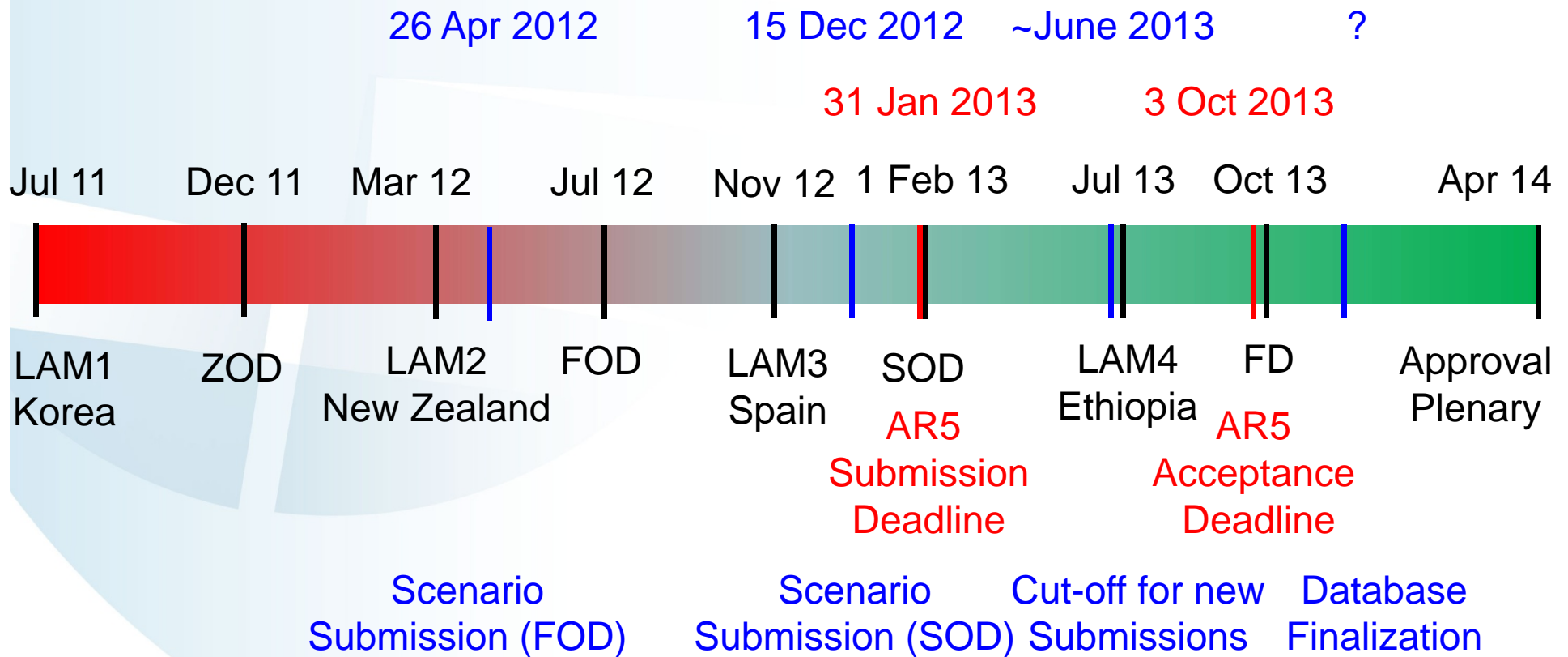
Issues

- Only partial coverage of scenarios from modeling comparison exercises
- Imbalance in model coverage
- Inconsistent scenario names and meta data from modeling comparisons

Toward an improved SOD database

- Reach out to community to get more scenario submissions
- Coordinated effort to transfer scenario data from completed and ongoing modeling comparison exercises
- CAs have volunteered to help with the data transfer
 - AME, EMF22 – Kate Calvin (PNNL)
 - AMPERE – Nils Johnson (IIASA), Nils Petermann (PIK)
 - LIMITS – Giacomo Marangoni (FEEM)
 - RoSE – Ioanna Mouratiadou (PIK)
 - EMF27 – TBD

AR5 WG III Timeline – Database



Please submit your scenarios!

- To make it into the SOD, submissions until 15 December will be considered.
- Before submitting data, you need to register your model and provide meta data.
- Some automated quality checks (comparison with historical data) may lead to rejection of submissions.
- Further information:
<http://www.iamconsortium.org/>
<https://secure.iiasa.ac.at/web-apps/ene/AR5DB/>

Terms of Reference in a Nutshell

AR5 Database Access

- During Process: (C)LAs of Chapter 6, liaisons of other chapters and CAs between chapters
- After Final Draft: Government Reviewers
- After Plenary: General Public

Coverage of Variables/Regions

- Variables ultimately used in AR5 will go public
- Regions used in AR5 will go public (World, 5 RCP regions, some specific regions)

Part II: Template and Database Development

Acknowledgements

- IIASA database team:
 - Peter Kolp, Dieter Schicker (database development)
 - David McCollum, Oscar van Vliet (support)
- Elmar Kriegler (template consolidation, meta data, documentation)
- EPRI: Steven Rose (funding)
- ... and many others (e.g. for testing meta data, for providing feedback and suggestions to improve template and databases)

Development since last IAMC Meeting

Data template (~10 modeling comparisons)

- Consolidation of IAMC data template
- Development and implementation of mechanism for collecting meta data

Scenario databases (~9 web-databases)

- Stability and performance improved (new server, software improved)
- New features added (with **EPRI** | ELECTRIC POWER RESEARCH INSTITUTE support)

Documentation

- See <http://data.ene.iiasa.ac.at/database/>

Meta Data: Models and Scenarios

(Examples)

Model

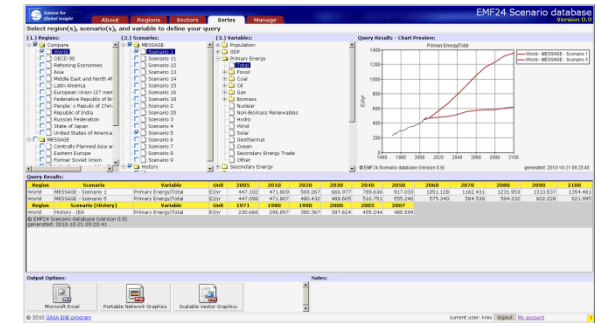
- Model name & version
- Time horizon
- Model type (e.g., general vs. partial equilibrium; recursive-dynamic vs. inter-temporal)
- Cost metrics: GDP & consumption losses/system cost
- ...

Scenario

- Part of a bigger exercise? (e.g., EMF27, AMPERE)
- Type: baseline/climate policy/diagnostic
- Climate Target (e.g., none/temperature/radiative forcing/emissions)
- Climate Policy: cap (and trade), price, regional policies
- Status: published (peer-reviewed/non-peer reviewed), preliminary
- ...

| Model | Scenario | Regional coverage | Number of regions | Time | Energy service sectors | Economic sectors | Energy technologies |
|----------|------------|---|-------------------|-----------|--|---|---|
| E3ME-EGC | E3ME-EGC-2 | Africa, Asia, Europe, Latin America, Middle East, North America, Oceania, South America | 21 | 2005-2050 | Electricity, Manufacturing, Transport, Residential | Agriculture, Manufacturing, Services, Transport | Coal, Gas, Nuclear, Renewables, Storage |
| E3ME-EGC | E3ME-EGC-3 | Africa, Asia, Europe, Latin America, Middle East, North America, Oceania, South America | 21 | 2005-2030 | Electricity, Manufacturing, Transport, Residential | Agriculture, Manufacturing, Services, Transport | Coal, Gas, Nuclear, Renewables, Storage |

New Database Features



Additional Visualization

- Derived indicators (e.g., per GDP, per capita, per FE)
- Scatter plots (e.g., GDP per capita vs. FE per GDP)

Snapshot formats

- MS Access 2003 & 2007 (incl. meta data, comments)
- CSV (scenario data only)

Administration (via-interface)

- Export of snapshots
- Group and user management

Feedback...

... on the templates and databases is most welcome!

Send ideas, suggestions, complaints to the database administrator e-mail address:
webapps.ene.admin@iiasa.ac.at

Thank you!