# Annex XI: Joint Studies for New and Mitigated Energy Systems

## ETSAP - Energy Technology Systems Analysis Programme
Implementing Agreement of the International Energy Agency – IEA/AIE

**58th Executive Committee Meeting**

*Held on Tuesday, November 16 (15.30 – 17.00), 2010, at the De Vere Hall, University College Cork, College Road, Cork, Ireland*

*Draft minutes*

## Table 1: Participants

<table>
<thead>
<tr>
<th>N.</th>
<th>Country</th>
<th>Contracting Party</th>
<th>Delegate / Alternate</th>
<th>Attending</th>
<th>Absent</th>
<th>Stand-ins</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Belgium</td>
<td>FPP Science Policy</td>
<td>Mrs. Anne FIERENS, Vice-chair</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Canada</td>
<td>NRCan</td>
<td>Mr. Hertsel LABIB, Chair</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Denmark</td>
<td>DEA</td>
<td>Mr. Aksel Laurids BECK</td>
<td>Y</td>
<td></td>
<td>Mr Poul Erik Grohnheit</td>
</tr>
<tr>
<td>4</td>
<td>EU</td>
<td>JRC Petten</td>
<td>Mr. Arnaud MERCIER</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Finland</td>
<td>VTT/TEKES</td>
<td>Ms. Pia SALOKOSKI</td>
<td>Y</td>
<td></td>
<td>Mr. Antti Lehtila</td>
</tr>
<tr>
<td>6</td>
<td>France</td>
<td>ADEME/EDMP/</td>
<td>Mr. Jean Marie BOUCHEREAU</td>
<td>Y</td>
<td></td>
<td>Nicklas Forsell</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DGEMPEDAD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Germany</td>
<td>IER</td>
<td>Mr. Alfred VOSS, Vice-chair</td>
<td>Y</td>
<td></td>
<td>Mr Markus Blesl</td>
</tr>
<tr>
<td>8</td>
<td>Greece</td>
<td>CRES</td>
<td>Mr. George GIANNAKIDIS</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Italy</td>
<td>CNR/IMAA</td>
<td>Mr. Vincenzo LA PENNA</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Ireland</td>
<td>SEI</td>
<td>Mr Brian Ó GALLACHÓIR</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Japan</td>
<td>Government</td>
<td></td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Korea</td>
<td>KEMCO</td>
<td>Mr. Won-Goo LEE</td>
<td>Y</td>
<td></td>
<td>Mr Hong Souk Shim</td>
</tr>
<tr>
<td>13</td>
<td>Netherlands</td>
<td>ECN</td>
<td>Mr. Marc LONDO</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Norway</td>
<td>IFE</td>
<td>Ms. Kari Aamodt Espegreen</td>
<td>Y</td>
<td></td>
<td>Ms. Pernille Seljom</td>
</tr>
<tr>
<td>15</td>
<td>Russia</td>
<td>ERI-RAS</td>
<td>Mr. Sergey Filippov</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Spain</td>
<td>CIEMAT</td>
<td>Ms Helena CABAL</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Sweden</td>
<td>STEM</td>
<td>Mr. Klaus HAMMES</td>
<td>Y</td>
<td></td>
<td>Mr. Hertsel Labib</td>
</tr>
<tr>
<td>18</td>
<td>Switzerland</td>
<td>PSI</td>
<td>Mr. Hal TURTON</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>UK</td>
<td>DECC</td>
<td>Ms. Stephanie OCKENDEN</td>
<td>Y</td>
<td></td>
<td>Mr. Neil Strachan</td>
</tr>
<tr>
<td>20</td>
<td>US</td>
<td>DOE</td>
<td>Mr. Carmine Di FIGLIO</td>
<td>Y</td>
<td></td>
<td>Mr. Brent Wanner</td>
</tr>
</tbody>
</table>

### Officers:

- Mr Uwe Remme: IEA, Desk Officer
- Mr GianCarlo Tosato: ETSAP, Operating Agent and Project Head, ASATREM srl, Italy
- Mr Amit Kanudia: ETSAP, VEDA and TIAM Developer, KanORS, India
- Mr Ken Noble: ETSAP, ANSWER Developer, Noble-Soft System, Australia
- Ms Maryse Labriet: ETSAP, TIAM use, ENERIS, Spain
- Mr Maurizio Gargiulo: ETSAP, TIMES training, E4SMA, Italy
- Ms Kathleen Vaillancourt: ETSAP, Support, GERAD, Canada

### Guests:

- Mr. Francesco Gracceva: EC JRC Petten
- Ms Anna Krok: EC JRC Petten
- Ms D. Van Regemorter: KU Leuven, Belgium
- Mr Evasio Lavagno: POLITO, Italy
- Mr João Pedro Gouveia: FFCT, Portugal
- Mr Wouter Nijs: VITO, Belgium
Table 2: Agenda

<table>
<thead>
<tr>
<th>No.</th>
<th>ITEM</th>
<th>DOCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quorum Count</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Adoption of the agenda</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Adoption of the</td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Minutes of the 57th Executive Committee</td>
<td>T1</td>
</tr>
<tr>
<td>3.2</td>
<td>Result of the Written Procedure on ETSAP-TIAM / Text of Annex XII</td>
<td>T2</td>
</tr>
<tr>
<td>3.3</td>
<td>Result of the Written Procedure on a change in the current end-of-term date</td>
<td>T3</td>
</tr>
<tr>
<td>4</td>
<td>IEA-ETSAP Implementing Agreement</td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>Communication from the Secretariat</td>
<td>T10</td>
</tr>
<tr>
<td>4.2</td>
<td>Participation</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Annex XI (2008-2010): Joint studies for new and mitigated energy systems</td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>Report of activities</td>
<td>T7, T8</td>
</tr>
<tr>
<td>5.2</td>
<td>Budget</td>
<td>T5</td>
</tr>
<tr>
<td>5.3</td>
<td>Extension of the Annex to July 31, 2011</td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>Draft program of work</td>
<td>T4, T9</td>
</tr>
<tr>
<td>6.2</td>
<td>Participation: delegates express their Contracting Party intention</td>
<td></td>
</tr>
<tr>
<td>6.3</td>
<td>First draft budget for 2011</td>
<td>T5</td>
</tr>
<tr>
<td>6.4</td>
<td>ANSWER-VEDA: reduced prices vs. ETSAP forsaken commissions</td>
<td>T6</td>
</tr>
<tr>
<td>7</td>
<td>Other business</td>
<td></td>
</tr>
<tr>
<td>7.1</td>
<td>Report of the workshop</td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>Next workshop and ExCo meeting: Stanford (CA) before or after IEW2011 (July 6-8, 2011)</td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>Successive meetings</td>
<td></td>
</tr>
<tr>
<td>7.4</td>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

Annexes (new, circulated at the workshop)

T1 Draft Minutes of the 57th ExCo meeting, held in Stockholm, Thursday, June 24, 2010
T2 Result of the Written Procedure on ETSAP-TIAM / Text of Annex XII
T3 Result of the Written Procedure on a change in the current end-of-term date
T4 Annex XII, draft program of work
T5 Budget of Annex XI (2008-10) and draft proposal for Annex XII (2011)
T6 ANSWER-VEDA: proposed (discounted) prices table
T7 Annex XI final report: draft Table of Content
T8 E-TechDS List of Energy Technology Clusters
T9 Integrating policy instruments into the TIMES model, IER Proposal (November 12, 2011)
T10 Report from the IEA Secretariat (November 12, 2011)
Opening
The chair, Mr. Hertsel Labib, opened the 58th Executive Committee (ExCo) meeting at 15.40. He thanked the University College Cork for making the facilities available. He welcomed everyone and in particular Ms. Helena Cabal, who represents Spain that joined on July 1, 2010.

1 Quorum Count
ETSAP has 20 Contracting Parties (CP), the quorum is eleven. Seven delegates attended in person and nine through their stand-ins (see above, table 1). A quorum was present.

2 Adoption of the agenda
The agenda was adopted without amendments (see above, table 2):

3 Adoption
3.1 Minutes of the 57th Executive Committee (attachment T1 revised)

The chair asked to adopt the minutes of the 57th ExCo meeting. One delegate asked to remove the reference to specific country delegates. The Norwegian delegate asked to correct the spelling of Mr. Per Ivar Helgesen, representative of ENOVA. With these changes the minutes of the 57th ExCo meeting were adopted.

3.2 Result of the Written Procedure on ETSAP-TIAM / Text of Annex XII (attachment T2)

The chair read the results of the WP held in August 2010, to which 14 delegates participated.

Resolution 1
The ExCo accepts the offer of the developers, KANLO-KANORS, and decides to allocate €15000 to them for the preparation of the official 2009 version of ETSAP-TIAM in the full open framework.

was approved by 12 delegates and 2 abstentions. Nobody objected.

Resolution 2
The ExCo approves the terms of the draft Letter of Agreement, attached as “B” to this Written Procedure, to regulate the arrangement between the ETSAP IA and the end-user institutions.

was approved by 12 delegates and 2 abstentions. Nobody objected.

Resolution 3
The ExCo approves the revised text of Annex XII (2011-2013), attached as “C” to this written procedure.

was approved by 13 delegates and 1 abstention. Nobody objected.

As a result of the written procedure CPs interested in receiving the official ETSAP-TIAM open version were invited to send to the Operating Agent (OA) a signed copy of the new LoA, which repeals the previous ones.

3.3 Result of the Written Procedure on a change in the current end-of-term date (attachment T3)

The chair read the result of the WP held in September 2010.

“Pursuant to the decision of the CERT, for standardising the CERT administrative procedures, the ExCo of the ETSAP IA is being asked, on a one-time basis, to approve a change in the current end-of-term date (see attached letter). The current end-of-term date for ETSAP is set for 30 June 2014. The proposed end-of-term date is set for 28 February 2015. The proposed end-of-term date prolongs the period of the current term by eight months.
If no objection is received by October 8th, the decision by the ExCo will be deemed to have passed. The results of this written procedure will be communicated to all ExCo members as set out in our
Implementing Agreement text and the decision will be recorded in the minutes of the next ExCo meeting. The results of this written procedure also will be communicated to the IEA Secretariat, who will arrange for the CERT to approve the extension at its next regular CERT meeting, scheduled for 3-4 November 2010."

Nobody objected. The ExCo unanimously approved.

4 IEA-ETSAP Implementing Agreement

4.1 Communication from the Secretariat (attachment T10)

Mr. Uwe Remme briefs the delegates on recent developments at the IEA secretariat on issues of interest to our Implementing Agreement and illustrates the content of attachment T10.

4.2 Participation

Spain became a CP to ETSAP since July 1, 2010, the Russian Federation since September 15, 2010.

At the beginning of Annex XI in 2008 a representative of the Japanese Ministry of Research communicated that the responsibility for energy technology systems analysis was transferred to the Ministry of Industry. In March this year Mr. Tosato was invited in Japan and presented ETSAP to the Agency of Natural Resources and Energy of the Ministry of Economy, Trade and Industry (METI/ANRE). The interest of the Japanese research groups using ETSAP tools remains high. The ExCo unanimously invited METI/ANRE to resume the participation of Japan to ETSAP.

5 Annex XI (2008-2010): Joint studies for new and mitigated energy systems

5.1 Report of activities

Mr. Tosato updated the delegates and illustrated the status of implementation of the 2010 program of work for 2010, as approved at the 56th ExCo meeting.

Model Generators
The improvements in TIMES and MARKAL were illustrated in the morning sessions of the ETSAP WS. Richard Loulou produced an updated version of the Climate module of TIMES. There are about 130-140 active licensed users.

Data Base Management Systems
The improvements in ANSWER and VEDA were illustrated in the morning at the ETSAP WS. These are the strongest components of ETSAP modelling tools, compared to other modelling tools.

TIMES Integrated Assessment Model
After reaching an agreement through the written procedure in August, the ETSAP-TIAM official version is now in preparation.

Energy Technology Data Source
Progresses are highlighted in the page circulated at the meeting (see new annex T8). Denise Van Regemorter suggests to collect the summary data of all briefs in a DB, possibly compatible with VEDA.
Research & Development
A new study on best practice in linking MARKAL – TIMES to macro-economic models has been commissioned to Socrates Kypreos. He will propose a code to be inserted in TIMES in order to make it possible to extend a single region MARKAL-MACRO / TIMES-MACRO model to the global multi-region MARKAL-MERGE / TIMES MERGE model.

A proposal of IER, received Friday, November 12, 2010, on “Integrating policy instruments into the TIMES model” (see new attachment T9) has to be discussed.

Web site
The new www.iea-etsap.org web site is now operational. For some time the old and the new web sites will be both operational; a news item announcing the new site will be posted on the old web site.

Training courses
The training course lately held in Cork thanks to the active collaboration of Brian Ó Gallachóir was attended by 15 trainees. The main trainer, Maurizio Gargiulo has now a one year contract with ETSAP. The program continuously improves and the development of new demo / tutorial models is planned. The next training course will be possibly held in spring in Europe, the following one will be held in Stanford back to back with IEW2011.

Final report
Kathleen Vaillancourt is preparing the final report of Annex XI. The table of contents of the final report was circulated at the meeting (see new annex T7) for comments and discussions. It was suggested that each model should be described first, then the illustration of the studies in which it is used should follow. The delegates were asked to express how they prefer to circulate the final report. Some delegates suggested to print only a summary and to circulate the full report in electronic format. Other delegates reminded that some ministries wanted printed copies, which had to be printed on purpose in house from the electronic file. Delegates were invited to express their preference to the OA.

Others
After long discussion with GAMS Inc., ETSAP received for free a small group project license of GAMS and CPLEX for training and demonstration and internal non-profit uses. Mr Tosato and Mr Noble will use this license.

The list of licensed MARKAL-TIMES has been updated, but will not be posted to the web for privacy reasons.

ETSAP welcomed the OSeMOSYS initiative announced in Stockholm at IEW2010. So far a fairly large "definitional" paper was being put through Energy Policy. A beta OSeMOSYS-LEAP thing is running. Mr Howell invited ETSAP to give insights as to how to solve the same simple problems with ETSAP tools in a way that, when a student leaves university, he knows that there are powerful platforms (TIMES etc) that he could move onto.

The delegates took note of the report on activity and endorsed the completion of the program of work.

5.2 Budget (attachment T5)

Mr Tosato illustrated the first draft final budget of Annex XI. So far 15 CP paid their 2010 fee; Italy promised to pay. The total income is about €320k. With the positive balance of the previous years, about €415k were available for activities. About €230k were used for base activities, about €180k were left for coordinated projects and studies. With reference to the budget presented in Stockholm, the workshops cost slightly more than initially expected, mainly because the ExCo decided to reimburse the participation expenses of the ETSAP team. The other expenses related to base activities have not changed. The expenses
for printing and mailing the final report have to be added. In the second part on coordinated projects and activities, after the removal of the allocation for continuing the activity on TIAM, the most important activity remains the preparation of an energy technology data source, with about €100k. The section Research and Development includes 15k for the contract to Socrates Kypreos. Delegates were invited to advise about the proposal sent by IER, which were illustrated at the WS in the morning. Mr Tosato suggested using the expected final positive balance of about €40k as a fund to initiate the activities of Annex XII in 2011.

One delegate suggested letting the attendees of ETSAP WS pay a fee in order to reduce to zero the net cost for ETSAP. Another delegate objected that the time and cost is already paid by the participants: adding a fee would reduce the number of participants. Mr. Tosato reminded that the ETSAP network works all year long communicating at distance: it seems in the interest of ETSAP, not only because so specified in the text of the Annexes (for instance, in Annex XII, see art. 3, comma f), to actually meet twice a year in person and exchange experiences. In this view it is also to the advantage of ETSAP to sponsor IEW and make this platform an important event to show the power of ETSAP tools. After discussion the ExCo decided to continue offering the participation to ETSAP workshops without charging any fee.

5.3 Extension to July 31, 2011

For practical purposes, in order to complete the final report and next WS / ExCo, without budgetary implications, it is safer to extend Annex XI till the next WS included.


6.1 Draft program of work

Mr Tosato illustrated the draft Program of Work for next year, based upon the Objectives of Annex XII (art. 2) together with the draft allocation of the budget for 2011 (attachment T5).

In order to maintain the base tools (art. 2, comma d) an allocation of at least €60k seemed necessary, the organization of two workshops and ExCo meetings could require about €40k. The second objective of capacity building (art. 2, comma c) through training courses or demo models or new “getting started” manuals could require €15-20k. In the field of coordinated analysis tools (art. 2, comma a) it was proposed to allocate about €40k to the effort of characterising new energy technology clusters.

If more than 6 CP pay the fee, it was proposed in the research and development budget for 2011 to support the Swiss research on SOCIO-MARKAL with an allocation of €25k, in order to add consumer preferences considerations to our tools. As pointed out by one delegate, limited code changes would make the option available in MARKAL as well as in TIMES.

The possibility to continue the research of Socrates Kypreos about possible ways to improve the general equilibrium considerations in our tools and to carry out research aimed at integrating instruments into the TIMES model generator, as proposed by IER will be further discussed and proposed again at the next ExCo meeting, when the budget availability will be clearer.

After the freeze of the ETSAP-TIAM model decided by the written procedure last summer, the delegates were invited to discuss whether and how to resume coordinated out activities in the field of ETSAP-TIAM, and still be present in international forums with ETSAP sponsored research and studies. One delegate wandered whether it is useful to envisage again a common version, after the teams using TIAM invested considerable resources to modify and improve the model according to their main goals; the DBO/DCM
version seemed the only way to maintain a common version. On behalf of IER Markus Blesl proposed to hold a discussion meeting in Stuttgart with the CPs who made use or plan to use the TIAM model, in order to at least share experience and compare results. This could bring to carrying out common studies.

The Chair invited the delegates to send comment on these proposals to the OA in the next few weeks.

6.2 Participation

The delegates were invited to express whether their country intends to participate to Annex XII. Belgium, Canada, Greece, Ireland, Italy, Norway, Spain and the US intend to participate. Denmark, Finland, the European Commission, Germany, the UK can't tell at this point, but are reasonably positive. France, Korea will know at a later moment.

6.3 First draft budget for 2011

Further to what illustrated at agenda item 6.1, Mr Tosato presented three possibilities, based upon the full participation of 6, 10 and 14 CPs respectively. The first option would allow maintaining tools and training, plus some technology briefs. In the management part it was proposed to allocate €10k for secretarial assistance and to start the transition phase to a new OA. The second option would allow carrying out some research, as well as more of the base activities. In this option €185k would be used for base activities, the remaining €83k would be used mostly for the energy technology data source, the rest for research and development. In this option it was proposed to allocate €15k for further improvement of ETSAP tools. One participant stressed the importance to give preference to the improvements of TIMES. The third option with a total allocation of almost €350k would allow more achievements in coordinated activities and studies, mainly the energy technology data source. One delegate expressed the preference to allocate to research and development the extra money available in this third option. The OA invited again all participants to submit R&D proposals; one delegate would rather prefer to be asked proposals by the OA.

The delegates discussed the proposed allocations in each option. Some delegates had an opinion different from the OA as they think that the research on SOCIO-MARKAL is not central to ETSAP. According to one participant, the allocation to the maintenance of MARKAL seems high compared to the similar allocation to maintain and develop TIMES; but one delegate reminded how important it is to maintain MARKAL fully functional and supported, although no new developments were foreseen. One participant repeated how important it is to continue the compilation and improvement of E-TechDS, which is really to the benefit of all CP and users.

The ExCo asked the OA to revise the budget keeping into account the observations expressed by the participants. Mr. Tosato proposed to approve the first part of the budget – Base activities, improvements and training/diffusion – in order to start the base activities, and to decide about the rest at the next meeting, when it will be clearer how many CP will pay the fee.

6.4 ANSWER-VEDA: reduced prices vs. ETSAP forsaken commissions (attachment T6)

The OA, in agreement with Mr Kanudia and Mr Noble, proposed to ETSAP to forsake the 10% commissions on sales of ANSWER and VEDA, and to offer instead the tools at a 5% discount to all ETSAP tools users. The ExCo unanimously approved.
Mr Tosato reminded that the CP are entitled to receive a small group license of the ETSAP tools, which means installing ANSWEER and VEDA in no more than five computers. Actually some CP use more, or many more, licenses than the five foreseen by a small group license. Mr Tosato proposed to establish the rule that large users have to buy the licenses exceeding five. The responsible for the TIMES development pointed out that for practical purposes the tools are installed in many more computers than users. The delegates asked the OA to submit a practical proposal at the next meeting.

7 Other business

7.1 Report of the workshop

The delegate thanked the organizer for the wonderful organization and quality of the workshop and the ExCo meeting.

7.2 Next workshops

Mr. Tosato proposed to hold next ETSAP workshop and ExCo meeting back to back to IEW2011, Tuesday July 5, 2010 (one day) or better the following Monday and Tuesday, July 11-12 (two days), and training to follow. The US delegate pointed out how difficult it could be for American IEW2011 participants to attend on July 5. Some delegates suggested exploring the possibility of holding the regular ETSAP workshop and ExCo meeting on Saturday, July 9. Mr Tosato will explore this option.

Some delegates expressed their concern for the participation to the ExCo meetings of non delegates. Delegates are invited to attend with a restricted the number of experts in their group. The OA can participate with the group of experts assisting him in the ETSAP related activities.

7.3 Successive meetings

Mr Tosato invited to propose venues for the fall 2011 workshop / ExCo meeting and asked advice for the organization of a workshop or event to advertise the energy technology data source, which by July next year should count forty or more briefs. Mr. Giannakidis offered to hold the fall meetings in Athens.

7.4 Others

Since no other issues were brought out, the Chair closed the meeting at 17:35.