

## ETSAP - ENERGY TECHNOLOGY SYSTEMS ANALYSIS PROGRAMME

Implementing Agreement of the INTERNATIONAL ENERGY AGENCY - IEA/AIE

### MINUTES OF THE 71<sup>TH</sup> EXECUTIVE COMMITTEE MEETING

held on Tuesday, July 11, (14.00 - 18.00), 2017, at  
Marriott hotel Univ. of Maryland, Maryland, US.

TABLE 1: PARTICIPANTS

N.	Country	Participant	Delegate	Attended	Stand-ins
1	Australia	CSIRO	Mr. Luke REEDMAN	Yes	
2	Belgium	VITO/SPW/Brussels	Mr. Jan DUERINCK	Yes	Mr. Brian Ó GALLACHÓIR
3	Denmark	DEA	Mr. Aksel Laurids BECK	Yes	Mr. Kenneth Karlsson, OA
4	EC	JRC Directorate	Mr. Andreas ZUCKER	Yes	Mr. Wouter Nijs
5	Finland	VTT/TEKES	Ms. Pia SALOKOSKI	Yes	Mr. Antti Lehtila
6	France	ADEME/EDMP/ DGEMPEAD	Ms. Nadia MAIZI	Yes	Ms. Sandrine Selosse
7	Germany	IER	Mr. Markus BLESLE, Vice chair	Yes	
8	Greece	CRES	Mr. Kostas Tigas	Yes	
9	Italy	ENEA	Ms. Maria Rosa VIRDIS, Vice Chair	No	
10	Ireland	SEAI	Mr. Brian Ó GALLACHÓIR, Chair	Yes	
11	Japan	IEEJ	Mr. Yuhji MATSUO	Yes	Mr. Brian Ó GALLACHÓIR
12	Kazakhstan	NURIS	Mr. Yerbol AKHMETBEKOV	No	
13	Korea	KEA	Ms. HoChul Shin	No	
14	Netherlands	ECN	Mr. Bob van der ZWAAN	No	
15	Norway	IFE	Ms. Kari Aamodt ESPEGREN	Yes	Ms. Pernille Seljom
16	Russian Fed.	ERI-RAS	Mr. Sergey FILIPPOV	No	
17	Spain	CIEMAT	Ms. Helena CABAL	Yes	Ms. Pernille Seljom
18	Sweden	STEM	Ms. Josefin THORESSON	Yes	Ms. Anna Krook-Riekola
19	Switzerland	PSI	Ms. Anne-Kathrin FAUST	Yes	Mr. George Giannakidis, PH
20	UK	DECC	Mr. Alec WATERHOUSE	Yes	Ms. Tamaryn Napp, ICL
21	US	DOE			David Daniels / Ann Satsangi
22	Sponsor	ENEL Foundation	Mr. Carlo PAPA	No	
23	Sponsor	GE Global Research	Mr. Trevor KIRSTEN	Yes	Mr. Donald Whisenhunt

## Officers:

Mr. Gary Goldstein      ETSAP, Liaison Officer, GAMS, MARKAL, DWI

## Guests:

Mr. Peihao Li	UCL	Mr. James Glynn	UCC, Ireland
Mr. Keith Burnard	GHG TCP	Ms. Rikke Næraa	DEA, Denmark
Mr. Martin Robinius	Forschungszentrum Jülich GmbH	Mr. Maurizio Gargiulo	E4SMA, Italy
Mr. Samudra Viljay	SAM IT solutions	Mr. Jungwoo Lee	KETEP, Korea
Ms. Evelyn Wright	US	Mr. Amit Kanudia	Kanors
Mr. Uwe Remme (Skype)	IEA		

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TABLE 2: AGENDA

No.	ITEM	DOCS
1	<b>QUORUM COUNT</b>	
2	<b>ADOPTION OF THE AGENDA</b>	
3	<b>FOR THE RECORD</b>	
3.1	<i>Minutes of the 70th Executive Committee</i>	G1
4	<b>IEA-ETSAP IMPLEMENTING AGREEMENT</b>	
4.1	<i>Communication from the Secretariat</i>	
4.2	<i>Strategy for the Development of ETSAP's tools</i>	G2
4.3	<i>ETSAP Participation - New to ETSAP webpage</i>	G3
5	<b>ANNEX XIII (2014-2016): TOOLS FOR ANALYSIS OF A FUTURE ENERGY REVOLUTION</b>	
5.1	<i>Progress of current projects and ETSAP tools</i>	G4
5.2	<i>Annex XIII 2016 Budget Report approval</i>	G5
6	<b>ANNEX XIV (2017-2019): UNDERSTANDING AND FACILITATING THE ENERGY TRANSITION TO ACHIEVE THE 'WELL BELOW 2°C' GOAL</b>	
6.1	<i>Annex XIV Financial update</i>	
6.2	<i>Progress of current projects and ETSAP tools</i>	
6.2	<i>Discussion for the update of ETechDS</i>	G6
7	<b>OTHER BUSINESS</b>	
7.1	<i>Election of a Chairperson and Vice-Chairpersons</i>	
7.2	<i>Next workshop and ExCo meeting: Zurich, Switzerland</i>	
7.3	<i>Successive meetings: Summer meeting 2018 together with IEW 2018, autumn 2018.</i>	
7.4	<i>Others</i>	
<b>ATTACHMENTS</b>		
G1	<i>Minutes of the 70th ExCo meeting, held in Madrid Monday, November 18, 2016.</i>	
G2	<i>Strategy for the Development of ETSAP's tools</i>	
G3	<i>New to ETSAP webpage</i>	
G4	<i>Progress of current projects and ETSAP tools</i>	
G5	<i>Annex XIII Budget report for 2016</i>	
G6	<i>Update of ETechDS</i>	

## ANNEX XIII: TOOLS FOR ANALYSIS OF A FUTURE ENERGY REVOLUTION

### Opening

The Chair, Mr. Brian Ó Gallachóir, opened the meeting at 14:00 welcoming the delegates and guests and thanking.

#### 1. Quorum Count

ETSAP has twenty three Participants comprising twenty one Contracting Parties (CP) and two Sponsors. The quorum is one half of the members plus one, i.e. twelve. 4 delegates attended in person and 12 Participants through their stand-ins (see above, Table 1). A quorum was present.

#### 2. Adoption of the agenda

The Chair presented the agenda of the Executive Committee (ExCo) meeting.

Brian suggest switching 4.2 and 4.3 in the agenda.

Any Other business added as 7.4 : Joint ETSAP master program, communication to the OA

The agenda was adopted with these changes.

#### 3. For the record

*3.1 Minutes of the 70th Executive Committee - for the record (Attachment G1)*

No comments

#### 4. IEA-ETSAP Implementing Agreement

##### 4.1 Communication from the Secretariat

Mr. Remme joined the meeting remotely and discussed a communication from the IEA Secretariat that he had distributed.

The Clean Energy Ministerial (CEM) secretariat is hosted by IEA (5-6 people) and headed by Christian Zinglensen from DK. CEM was started by Steven Chu former US Secretary of Energy to provide a platform for energy ministers to discuss climate issues (see more in the document from IEA). Last meeting in CEM was in Beijing where also the ETP 2017 was launched.

The IEA ministerial meeting take place 7-8 November in Paris.

The Committee on Energy Research and Technology, (CERT), met in February 2017 and the next meeting is in October 2017. Joint TCP meeting will be held back-to-back with the CERT meeting. Brian Ó Gallachóir will participate in joint TCP meeting on behalf of ETSAP and present an update to IEA CERT. Brian will also present to IEA EUWP meeting in September.

For more details see the document from IEA.

Kamel Ben Naceur, the IEA Director overseeing the WEO and ETP has left IEA and the division head Jean Francois Gangne as well.

##### 4.2 ETSAP Participation - New to ETSAP webpage (Attachment G3)

Strategy for engaging with new countries:

There are a number of strategies.

1) Countries we have been engaged with over past two years:

South Africa (positive but no funding), Portugal (positive but no funding), Brazil (IEA workshop Sao Paolo, TIMES training, interested in building Sao Paolo TIMES, Rio COPPE Inst. running MESSAGE) head contact for Brazil is Cobber, Ukraine (contact 2 years ago). Danish

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Energy Agency and DTU had modelling event recently, Maurizio (E4SMA) as well), Serbia (project going on), Costa Rica (Project in collaboration with World Bank (WB) ongoing). WB focus on a number of countries (under PMR) with capacity building in support of the water-energy nexus and the preparation of NDC roadmaps e .g. Costa Rica.

Regarding USA, DoE previously indicated a decision to withdraw from ETSAP, recent positive engagement with a number of other US bodies, including EPA, with DOE Office of Fossil Energy and Energy Information Administration, EIA. DOE and EIA have 7 participants in the training in Maryland and attended ExCo. Progress on re-engagement is progressing well There have been very positive steps and it is hoped that a new USA CP will join the next ExCo.

### 2) Which countries to engage with next:

The IEA has a number of partner countries : Chile, Mexico, China, India, Indonesia, Morocco, Singapore, Thailand, Brazil, Saudi Arabia and South Africa.

The Chair suggested we build on existing engagements with Mexico, Saudi Arabia, South Africa and Portugal - and look to build on opportunities in Serbia and Costa Rica.

One issue that again arose is how to involve developing countries, i.e. whether they could have cheaper access to ETSAP tools and lower fee for ETSAP participation. Some countries in North Africa for example are very interested in modelling tools - but TIMES is deemed too expensive. A project is underway lead by George to explore different software packages to reduce costs.

The issue of fees was also raised. We should clarify what is the added value of countries who can use ETSAP tools, becoming a contracting party. The meeting was reminded that the ExCo previously decided that there would be no differentiation on contracting party fee, but this could be reconsidered. The meeting was also reminded that fees are discussed and agreed at every winter ETSAP meeting. Some TCP's have fee scaled with GDP.

The experience of recent members is important in this regard and useful contributions on this were given by Australia and GE.

Donald: GE tried to get a global general energy model, TIMES was chosen, trouble with get access and join, the team in Munich has spent 18 months with help from consultancy to get a model they believe in. The value of time spent on the model is much more than the fees.

### 3) New to ETSAP homepage.

The Project Head summarised the 'New to ETSAP' home page (<http://iea-etsap.org/index.php/workshops?id=168>). The meeting agreed the ExCo members would send comments to George and send input on regional experience table to Tom Kober (see attachment G3). It was proposed that the activities be split into two parts: 1. activities completed, 2. ongoing activities. A further suggestion was to differentiate between models and studies.

### Open up ETSAP Workshops

Suggestions were sought on addressing the perception of ETSAP WS being closed to others.

- 1) Call for presentations on the front page of ETSAP WP.
- 2) Promote the workshop on other platforms and invite attendees.
- 3) Make people feel welcome.
- 4) Does IEA (or IRENA) have a place to publish workshops?

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- 5) IEA can possibly help getting more attention to the ETSAP WS, e.g. twitter. Good idea with TCP info on events.
- 6) It is important that the agenda is ready at earlier to make it possible to decide whether to go. But we need a deadline for abstracts.
- 7) some sessions would have been interesting for many others. So sending the themes in advance could attract more.
- 8) We could push for stronger visibility of ETSAP WS in the call for IEW - here we could be more active.
- 9) Be more proactive in directly contact organizations that could be interested.
- 10) It is not clear what you can participate as newcomer or outsider from ETSAP. Be clearer on how to engage.

### Collaboration with other bodies

Suggestions were also sought on how best we could collaborate with other organisations

- 1) IEA TCP's and IRENA. e.g. back-to-back meetings. ETSAP had collaboration with IRENA on E-Tech sheets, which are the most downloaded ETSAP data sheets. This progressed to a book chapter on the REMAP project. Discussing possible workshop between ETSAP and IRENA late 2017 or early 2018
- 2) Collaboration with IRENA ReMAP. Benefit to get insights from technologies and the other way how these technologies can fit into a system.
- 3) Scan web sites for other IEA TCPs and find common interests, create common email lists etc.
- 4) Shared annexes is a possibility, e.g. as on district heating. How can we start a shared annex? The Secretariat will find out the procedure, but two parties would have to ask for it. All the TCP's works differently. Having joined ExCo and workshops could be possible. It does not need to be formalized to have more collaboration.
- 5) Be careful not only to engage with few technologies. It could give a biased view.
- 6) Challenge the TCP's on data delivery.
- 7) Start a TCP database and present the idea for the TCP common meeting.
- 8) The IEA TCP's must be objective.
- 9) The ExCo agreed to progress these to explore possible joint events and collaborations

### 4.3 Strategic for Developing ETSAP's Tools (Attachment G2)

The ETSAP Project Head presented the result from the survey (TIMES-Tools-Strategy.pptx) - responses received from 12 CPs

- 1) First topic was allocating 20k€ for some immediate updates/improvements in FE and BE - this was approved in the written procedure and this will be started - (The Excel based set definition).
- 2) A number of other issues (below) arose in the survey and they were collated in attachment G2 and in the Powerpoint "TIMES-Tools-Strategy.pptx".

### Development of TIMES

The Exco agreed an methodological issues:

- 1) if feasible to be progressed within TIMES maintenance contract - agreed to proceed.
- 2) VTT Will need more information about the implementations before answering if it can be within the annual maintenance.
- 3) VTT will communicate with the proposer of the updates to the TIMES code.

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- 4) If it cannot be held within VTT maintenance contract it can be brought forward as new project proposals on next ExCo.

A proposal was brought forward to respond to the limitations of the linear approach in TIMES. Could be add-ons to standard optimization. **Could be a project proposed.** It was pointed out that market diffusion have been done in Markal,

A linked issue arose - should ETSAP have a TIMES development team? Create facility for engaging in the programming of TIMES code using version controlled code sharing. 3, 4 groups are already engaging in TIMES code, but there is no structure for giving input. This may be extended to enable PhD students feed in improvements to the code.

The ExCo agreed that Antti and Kenneth will look at the options (integration committee), e.g. propose a project? People interested were asked to engage before next ExCo and present ideas.

### **VEDA-presentation by Amit** (VEDA - way forward.pptx)

Story of VEDA started during Amit's PhD. Has been further developed with support from ETSAP, last few years funding has been lower and therefore also the focus on updates has been low - this changed in the most recent ExCo.

A number of wishes for improvements received were

- Suggest simple Web tool for introduction to new users
- List with suggestions....
- Explains already implemented features

A number of suggestions and issues were raised including

- 1) Tutorials for advanced users are needed to explore techniques for improving handling of big datasets, number of scenarios.
- 2) Need for advanced VEDA training, webinar or similar.
- 3) We are not making enough use of the forum for these discussions and means of exchange of ideas. Remember to sign up for notifications
- 4) Improved communication with the users
- 5) The learning curve is steep because of naming of parameters etc. Need focus on nomenclature.
- 6) Confusing with two active forums: VEDA and ETSAP? Sometimes topics are crossing. Can there be a search across the forums? On this point, discussions can be copied across and made search-able.

The ExCo agreed to create list of users from the licences, so we can send important messengers about the code, UI and documentation. VEDA users were asked to contact Amit whenever issues arise to work out solutions.

### **Proposal - 3 stages short, medium and long term**

- 1) New features are available,
- 2) medium term can be done in 2-3 months and changes migrated forward to new system.
- 3) New version of VEDA is 2-3 years of work.

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The ExCo decided to progress the medium term updates through a written procedure.

Regarding the longer term (new version of VEDA), a number of points were raised

- 1) We need to start with migration)! Problem with the 2GB limit in FE
- 2) need to jump to a real database system ASAP, need a budget and a plan for the long term solution.
- 3) To migrate to new database and software is a long-term solution we need to focus on and decide to fund.
- 4) new version of VEDA will be made, moving from VB6 to C# - 2-3 years of development.
- 5) We need to look at the budget before deciding if we can agree on something. Need a budget overview with project costs also before being able to take a decision.

The Exco are positive towards migration of VEDA and will ask Amit to provide an overview of the needed seed funding make the changes.

Amit proposals for making VEDA more accessible

- no price on academic licenses
  - Free version with size restrictions
- VEDA+GAMS for cloud servers
- Run-time license for same model
  - Could be combined with cloud
  - and VEDAViz

Samudraa Viljay presented the possibility of running TIMES in the cloud.

There is a positive attitude from the ExCo, to go on describing these options for VEDA - George will coordinate with Amit of developing it into proposals for next ExCo.

### 5. Annex XIII (2014-2016): Tools for Analysis of a Future Energy Revolution

#### 5.1 Progress of current projects and ETSAP tools (*Attachment G4*)

The P.H presented the progress of the currently funded projects by ETSAP (details in Attachment G4). The delegates reported on the expected completion date of the ongoing projects.

No questions.

#### 5.2 Annex XIII 2016 Budget Report (*Attachment G5*)

The P.H. presented the budget report from Annex XIII. The financial report is closed for 2016 (G5a).

The ExCo agreed to accept the financial report.

As OA has changed, this means a transfer of funds from CRES to DTU. There is an official letter on the budget balance by end of 2016 and the transfer of funding between the two institutions (G5b).

CRES will keep budget for funding of already started projects in 2016 and the remaining funds will be transferred to DTU.

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The Budget and transfer was agreed by the ExCo.

### 6. Annex XIV (2017-2019): Understanding and facilitating the energy transition to achieve the “well below 2°C” goal.

#### 6.1 *Financial update*

Given by new OA Kenneth Karlsson. Total expected income 2017 is 440k€. Around 240k€ will be available for projects to be decided on next ExCo meeting.

Showing the ETSAP SharePoint where all documents, legal, financial and contracts will be available to all for inspection ([https://share.dtu.dk/sites/ETSAP-DTU\\_194950/SitePages/Home.aspx](https://share.dtu.dk/sites/ETSAP-DTU_194950/SitePages/Home.aspx)).

Being under the DTU system means contracts and invoicing should follow specific rules.

It has been a big task taking over and it have become clear that George have an amazing overview of the whole setup of ETSAP, both practically and legally.

The Chair proposed that ExCo acknowledge the significant work taken on by Kenneth as OA (much of which is behind the scenes). What has been visible from outside is delays in contracts, but what has been going on is quite significant. Related to the budget for trainings we have become a victim of our own success - training for 2017 is exceeding the budget agreed on the last ExCo.

#### 6.2 *Progress of current projects and ETSAP Tools*

Contracts are about to being issued.

#### 6.3 *Discussion for the update of ETechDS*

The Chair indicated that there has been an initial discussion with The Danish Energy Agency (DEA) and IRENA on collaboration on ETechDS or similar data. What would be best format for technology data so they can be easily accessed by TIMES models? Could we make a proposal to bring forward to the other TCP's so they can deliver data into such a framework.

Anna, Maurizio and Rikke agreed to explore this on behalf of ETSAP and Martin volunteered to support this.

A number of points were raised for the group to consider

- 1) it is not only the format that is important. Data from different TCP's might not be consistent.
- 2) There is a need to describe the data, what is included in price, efficiencies etc. This is why DEA are making guidelines for their technology catalogues.
- 3) Standardizing SubRES for each country so it can be compared, then everybody can see which model is using what data.
- 4) PDF file do not make sense. We need a SubRES database or similar. Compare with other solutions.

### 7. Other business

#### 7.1 *Election of a Chairperson and Vice-Chairperson*

Anna proposed that Brian be re-elected as chair and that Markus and Maria be re-elected as co-chairs.



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This was agreed upon by the ExCo.

### 7.2 *Next workshop and ExCo meeting: Zürich, Switzerland, 11-12 December 2017.*

The next ETSAP workshop will be held in Zürich, Ordinary workshop 11-12 December and the ExCo meeting will be afternoon 12 December. There will be an Energy-Water Nexus WS b-t-b 13 December. The ETSAP tools training will take place on 13-15 December 2017.

### 7.3 *Successive meetings:*

The summer meeting of 2018 will be held in Gothenburg June 17-18, b-t-b with IEW. Brian will engage with the IEW board to get some insight on the planning and to see if we can get a targeted email to IEW participants improving ETSAP visibility and telling it is open and free.

We have some standing invitations for new meetings:  
UCL, Kazakhstan, VITO has offered to host a workshop.

### 7.4 *Others*

ETSAP Masters programme. The Chair suggested to keep this as an email interactions for those interested.

Communication with the OA. It was agreed that the OA should respond to emails and calls should be within a week.

The Chair declared the 71st ExCo meeting closed.