

40th Annual Meeting of the Executive Committee

Monday, September 3rd, 2018

Jægersborg Allé 166

DK 2820 Gentofte, Denmark

IEA EOR Technology Collaboration Program

MINUTES

Attendees:

Austria	Torsten Clemens	OMV	Delegate (Chairman)
Colombia	Rafael Guzman	Ecopetrol	Delegate (Vice Chair)
Mexico	Héctor Silva	CNH	Delegate (Secretariat)
Canada	Erik Nickel	PTRC	Delegate (Webmaster)
Denmark	Erling Stenby	DTU	Delegate (Vice Chair)
Canada	Cecile Siewe	Natural Resources Canada	Delegate
Canada	David Ryan	Natural Resources Canada	Observer
Australia	Dominic Pepicelli	Energy Resources Division	Delegate
Norway	Mariann Dalland	Norwegian Petroleum Directorate	Delegate
South Korea	Kun Sang Lee	Hanyang University	Delegate
Japan	Dr. Hirofumi Okano	JOGMEC	Delegate
France	David Rousseau	IFPEN	Delegate
Colombia	Cesar Patiño	Ecopetrol	Delegate

1. Opening Remarks

Torsten Clemens (Chairman) welcomed delegates and observers to the 40th Annual Meeting of the Executive Committee of the IEA EOR Technology Collaboration Program. He also welcomed new delegate from Japan (Dr. Hirofumi Okano). He extended his acknowledgements to the Organizing Committee for their work in the preparation of the 39th IEA-EOR Workshop and Symposium.

All delegates and observers introduced themselves to the meeting.

The Chair asked whether there were any amendments to the proposed agenda for the current meeting. The chair included an additional point (11th) in which all delegates were asked to provide briefly the EOR activities in their countries (3 min per delegate) all delegates agreed to include this point in future meetings.

2. Approval of Minutes from the 38th Executive Committee meeting held in México prior to the 38th IEA-EOR TCP Workshop and Symposium.

There were no changes in the Minutes of the 2017 Annual Executive Committee Meeting.

3. Mail in, Mail Out

The Chairman presented an overview of the emails correspondence, the most important are written below.

1) Report from the IEA Secretariat, December 2017.

Main themes

- a) IEA Secretariat
 - i. Clean Energy Transitions Programme
 - ii. TCP on Clean Energy Education and Empowerment (C3E TCP)
 - iii. 23rd Session of the Conference of the Parties (COP 23)
- b) Committee on Energy Research and Technology (CERT)
 - i. TCP Universal Meeting 2017
 - ii. TCP workshop February 2018
 - iii. Request for Extension: CERT guidelines
 - iv. RFE Guidelines
- c) Working Parties
 - i. Working party on Energy End-Use Technologies (UWP)
 - ii. Working party on Renewable Energy Tehnologies (REWP)
 - iii. Fusion Power Co-ordinating Committee (FPCC)
 - iv. Working party on Fossil Fuels (WPFf)
- d) Technology Collaboration Programmes (TCPs)
 - i. TCPs on the IEA website
 - ii. Recent TCP closures
 - 1. TCP on Climate Technology Initiative (CTI TCP)
 - 2. TCP on Renewable Energy Technology Deployment (RETD TCP)
 - iii. Best practice
 - iv. Frequently asked questions
 - v. Use of technology Collaboration Programme (TCP) brand
 - vi. Tips for communicating
- e) IEA Publications:

- a. World Energy Outlook-Launched on November 14th2017: Includes a full update of energy demand and supply projections to 2040 based on different scenarios.
 - b. Digitalization and Energy – Launched on November 5th2017: This report examines the impact of digital technologies on energy demand sectors, looks at how suppliers can use digital tools to improve operations, and explores the transformational potential of digitalization to help create a highly interconnected energy system.
 - c. Other publications available for free or sale (see books@iea.org)
- 2) Mail confirming a new successor for David Pucket from: Dr. Panteha Ghahri Senior Reservoir Engineer EOR-Specialist, mail: Panteha.Ghahri@ogauthority.co.uk
- 3) Report from the IEA Secretariat, 1st Quarter 2018.

Main themes

- f) IEA Secretariat
 - i. Re-election of the IEA Executive Director
 - ii. Mexico joins the IEA
 - iii. IEA launches online Resource for Sustainable Development Goal 7
 - iv. Launch the new World Energy Outlook site
 - v. IEA launches Energy Efficient Indicators online training courses
 - vi. IEA Global Exchange Platform for Energy Efficiency
- g) Committee on Energy Research and Technology (CERT)
 - i. Proposed Action Plan for TCP Enhancement
 - ii. New CERT Task Forces
 - 1. Task Force-1: will examine potential linkages/synergies with other partnerships and initiatives, including Mission Innovation and the Clean Energy Ministerial.
 - 2. Task Foce-2: will consider ways to make CERT processes and operations more dynamic, and
 - 3. Task Force-3: will provide guidance for TCP enhancement, notably trough the implementation of the Action Plan including its founding and resources
 - iii. CERTS-SLT workshop (5 June 2018, Paris)
 - iv. CERT strategic discussion on transport (14 February 2018)
 - v.
- h) Working Parties and Experts Groups
 - i. Fusion Power Co-ordinating Committee (FPCC), 22-25 January 2018.

- ii. Working Party on Energy End-Use Technologies (EUWP), 20-22 March 2018.
- iii. Building Coordination Groups (BCG), 25 January 2018
- iv. Working Party on Renewable Energy Technologies (REWP), 28-29 March 2018.
- v. Working Party on Fossil Fuels (WPF) 12-13 Dec 2017.
- vi. Experts groups on R&D Priority-Setting and Evaluation (EGRD)

- i) Technology Collaboration Programmes (TCPs)
 - i. Rising visibility on TCPs on the IEA website
 - ii. Modernization of TCP legal mechanisms
 - iii. New participations in TCPs (Since 1 January 2018)
 - iv. Recently renovated TCP websites
 - 1. CCC TCP (<https://www.iea-coal.org/>)
 - 2. ECES TCP (<https://www.iea-eces.org/>)
 - 3. ISGAN TCP (<https://www.iea-isgan.org/>)
 - 4. Wind TCP (<https://community.ieawind.org/home>)
- v. IEA Staff relevant to energy Technology Network

- j) IEA Publications:
 - i. Market Report series: Oil 2018
 - ii. Nordic EV Outlook 2018
 - iii. Insights Paper: System Integration of Renewables
 - iv. Insight Paper: Renewable Heat Policies
 - v. Global Energy and CO2 Status Report
 - vi. Technology Roadmap: Low-Carbon Transition in the Cement Industry.
 - vii. Tracking Clean Energy Progress 2018
 - viii. Future of Cooling
 - ix. Global EV Outlook 2018.
 - x. Other publications available for free or sale (see [books@iea.org](https://books.iea.org))

4) Email from Takahashi Satoru announcing his replacement at the IEA-EOR TCP, Dr Hirofumi Okano is taking his place.

4. News from IEA head office

No relevant information on this topic was discussed.

5. Preliminary evaluation of 2018 Workshop and Symposium (Discussion on the level of efforts, quality of program and the overall progress made by the participating countries during the year)

The committee discussed the quality of program and overall progress made by the participating countries during the year. Dr. Erling Stenby gave an overview of the program:

- 40 abstracts were received in total including the workshop and symposium which were accommodated in the following way
 - Session A: Studies of fluids and interfaces in porous media (7 presentations)
 - Session B: Surfactants and polymers (9 presentations)
 - Session C: Thermal Recovery (7 presentations)
 - Session D: Gas flooding techniques (4 presentations)
 - Session F: Emerging technologies (4 presentations)
 - Symposium (13 presentations)

No presentations were included in the Task E: Dynamic Reservoir Characterization, the Executive Committee decided to keep this topic on the list for future conferences.

Some countries did not send abstracts for the 39th IEA-EOR W&S, a brief list is mentioned during the meeting are shown below:

- UK
- Venezuela
- USA

Erling Stenby in common agreement with the Chairman accorded to include at least two presentations from member countries whenever possible.

The following table summarizes the participation of each country in the 39th IEA-EOR workshop and symposium.

	Received abstracts	Oral presentations
Australia	1	1
Canada	5	5
China	7	7
Colombia	2	3
Denmark	2	6
France	5	5
Japan	2	2
Mexico	2	2
Norway	6	6
Oman	1	0
Russia	4	4
South Korea	1	1
Austria	2	2
Total	40	44

- There was a comment from the Chairman to invite people from different places in Colombia to present abstracts and give presentations, this effort will be followed up by the 40th Organizing Committee.

6. Contributions for the coming year: allocation of manpower to subjects

Dr. Rafael Guzman expressed his gratitude for letting Colombia be part of the International Energy Agency.

- It was agreed that a list of abstracts submitted by each delegate per country is the best way to prepare the next Workshop & Symposium.

7. Measures to activate passive member countries and to attract relevant new member countries

- **US:** No country representatives attended the ExCom meeting.
- **Venezuela:** Celia Bejarano was not able to attend the ExCom meeting
- **Japan:** A new representative from Japan, Dr Hirofumi Okano joined the ExCom meeting and will be the replacements for Dr. Takahashi Satoru.
- **Colombia**
 - Cesar Patiño and Rafael Guzman agreed to invite new countries (Argentina, Brazil, Perú, Bolivia, Ecuador, Surinam) to be part of the IEA TCP, Marian Dalland commented on this saying, these new potential member countries should give a presentation and contribute to the TCP.

8. Officers for the next period

The committee discussed the Officers for the following year.

- Chairman: Dr. Torsten Clemens continues as Chairman, with help from Rafael Guzman.
- Vice Chair: No one was defined for the next period.
- Webmaster: Erik Nickel from Canada
- Secretariat: No one was defined for the next period.

9. Place and dates of 2019 Annual Meeting

The committee discussed the venue for the 2019 Meeting, Dr. Rafael Guzman and Cesar Patiño gave a brief presentation for two possible places in Colombia for the next IEA-EOR CTP Workshop and Symposium. Cartagena was chosen for the next event, from 16-20 September 2019.

Rafael Guzman mentioned the possibility to visit ongoing projects on field previous or after the Workshop-Symposium on request by member countries interested.

10. Suggestions for places and dates for following annual meetings

The provisional venues of future meetings, as discussed in this meeting, are as follows:

- 2020.- Korea
- 2021.- Australia
- 2022.- Russia.

A reminder of the last few meetings was requested to be added to the minutes.

1. 2009 - Australia - 31st Conference
2. 2010 - UK (Aberdeen)- 31st Conference
3. 2011 - Austria (Vienna) – 32nd Conference
4. 2012 - Canada (Regina) – 33rd Conference
5. 2013 - Norway (Stavanger) – 34th Conference
6. 2014 - China (Beijing) – 35th Conference
7. 2015 - Japan (Sapparo) - 36th Conference
8. 2016 - France (Rueil-Malmaison - 37th Conference
9. 2017 – Mexico (Riviera Maya- Unico Hotel) – 38th Conference.
10. 2018 – Denmark (Jægersborg Allé 166, DK 2820 Gentofte) 39th Conference.

11.- EOR Activities in member countries – highlights, 3 min per delegate

Main activities on EOR.

Austria:

- i. Extensión on polymer pilots
- ii. Horizontal wells
- iii. Alkali-polymer projects
- iv. Full field development projects.

Canada:

- i. Alberta Oil Sands (780+ facilities)
- ii. Water injection projects
- iii. Gas flooding projects
- iv. SAGD projects
- v. Hydraulic Fracturing activities
- vi. Some issues: Main companies leaving fields and small companies taking over the operations, some concerns on best practices, environmental issues and prudent resources exploitation.

Colombia:

- i. Polymer injection pilots (Good results so far)
- ii. Water injection projects

- iii. Polymer injection projects moving to ASP more quickly
- iv. Air injection pilot in Colombia
- v. Negotiation with partner to inject gas produced (Gas cycling)

France:

Main research

- i. Polymer-Surfactant
- ii. Foam based products
- iii. Controlling the salinity of water
- iv. Polymer mechanical degradation

Australia:

- i. Waterflooding projects
- ii. CO₂-EOR Injection Project to be applied next year

Norway:

- i. Mature technologies in the NCS
 - a. Waterflooding
 - b. WAG
 - c. Gas injection with special focus on preventing flaring
- ii. Possible polymer injection is a big discussion with Equinor
- iii. Norway's main focus on: Cost reduction + R&D + working forward to field implementation

South Korea:

- i. Small scale EOR projects
- ii. Research program on CO₂ EOR + CCS
- iii. Low salinity water flooding projects

Russia:

- i. Gas cycling injection projects
- ii. Surfactant polymer flooding projects

Mexico:

- i. Steam huff and puff injection into viscous heavy oil Samaria field have been successfully applied, PEMEX is exploring the possibility to change from huff-puff mode to continuous injection.
- ii. Foam injection pilot test in Akal showed good results, PEMEX is doing research on a possible application on a field scale.
- iii. Air injection into Cardenas field showed inconclusive results

- iv. EOR guidelines will be published soon to promote the analysis of potential EOR projects to be applied on Mexican reservoirs in order to increase FR based on probabilistic economic analysis.
- v. Synergy between National Hydrocarbons Commission and the Ministry of Energy of Mexico to promote EOR-CO₂ by making use of the CCUS roadmap published in 2014 and now being updated.

United Kingdom:

- i. Polymer injection projects
- ii. Big Smart water injection Project (BP)
- iii. Lot of research on screening of possible methods to be applied on UK sector
- iv. Strong cooperation with Universities

Japan:

- i. Low salinity water research Project

China:

Lot of application on ASP projects
Current research on high salinity high temperature surfactants

Denmark:

- i. Low salinity potential projects in Chalk
- ii. Smart water completion technology
- iii. Expected ultimate recovery factor on average less than 30% due to complex reservoirs
- iv. More focus on research and development

12. Any Other Business

There was not additional business discussed.

Draft 1 of Minutes written by Héctor Silva – 17 September 2018)