

IEA Bioenergy

Task 37 - Energy from Biogas

Draft Minutes of the
Third Meeting of the 2013/2015 Work Programme
April 2 to 4, 2014
Foz do Iguaçu, Brazil



David Baxter, European Commission -
JRC
Task Leader

IEA Bioenergy Task 37

Energy from Biogas

Third meeting of the 2013/2015 work programme; April 2-4, 2014; Foz do Iguaçu, Brazil

Participants:

Austria	Günther Bochmann
Brazil	Cícero Jayme Bley Jr.
	Jeferson Toyama
European Commission	David Baxter (Task Leader)
Germany	Bernd Linke
Ireland	Jerry Murphy
Korea	Ho Kang
Netherlands	Mathieu Dumont
Norway	Roald Sørheim
Sweden	Tobias Persson
Switzerland	Nathalie Bachmann
United Kingdom	Clare Lukehurst
IEA Bioenergy ExCo Member	Ricardo de Gusmão Dornelles
CIBiogas	Marcelo Alves de Sousa

Apologies:

Denmark	Teodorita Al-Seadi
Finland	Jukka Rintala
France	Olivier Théobald

1. Opening

The Task Leader (TL) welcomed all members. On behalf of Itaipu Binacional, Cicero Bley welcomed Task 37 to Brazil.

The agenda was approved as well as the minutes of the last Task 37 meeting held in Seoul in November 2013.

2 Work Programme 2010-2012

Topic 1 – Substrates for biogas production:

The feedstock pre-treatments technical brochure has been completed and will go on the website soon after the Brazil meeting. Authors: Lucy Montgomery and Günther Bochmann (Austria)

Topic 2 – Optimisation of digestion processes:

The process monitoring technical brochure was completed early in 2014 and published on the website. Author: Bernhard Drosch (Austria)

The small-scale AD economics technical brochure is at the editing stage. There are a small number of issues to be addressed. The final draft should be ready in June 2014 for publication.

Concerning a previous proposal from Clare to start a technical brochure on developing country AD, it was decided not to go ahead at this stage. However, it was decided to collect proposals for Case Studies and to consider a brochure for the next work programme.

ACTION: Lead author, Clare Lukehurst, to amend draft as necessary (May 2014)

ACTION: Task Leader to complete editing and eventually check to ensure IEA quality (June 2014)

ACTION: All members to submit proposals for developing country Case Studies to Clare (September 2014)

3 Work Programme 2013-2015

Topic A – Substrates for biogas production:

A.1: AD Process Optimisation

A number of points were raised:

- a single optimisation brochure is impossible (Günther)
- studies have to be carried out in Sweden to assess why performance differs from plant to plant (Tobias)
- there is always a balance between maintaining stability of the process and achieving high performance (Bernd)
- what is to be optimised ?, e.g. digestate quality (pathogen kill ?) (Clare)
- there is no sense in optimisation in itself, the objective has to be clearly defined (Cicero)

The discussion needs to be continued and very likely different aspects of optimisation will be included in the 2016-2018 work programme (first discussions in France in October 2014). Austria has previously offered to lead this topic.

ACTION: Send links to national projects and/or process optimisation reports to Bernhard Drosch with copy to the Task Leader (September 2014)

A.2: AD of Source Separated MSW

The joint report with Task 36 has been published in November 2013. This was the first Task 37 technical brochure with an ISBN number.

Follow-on work from Source Separation will include AD of food waste (proposed by Charles/UK). It is noted that the budget for food waste AD will likely have to come from WP 2016-2018.

ACTION: Task members to consider scope of report on AD of food waste for discussion at the next meeting (September 2014).

A.3: AD of Sewage Sludge

Topic leader Nathalie Bachmann (Switzerland): The report will address public authorities, municipalities, WWTP operators and plant engineers. The scope will cover AD + WWT, environmental performance, optimisation and development prospects and will focus mainly on energy. However, the tricky question of digestate needs to be addressed in a careful way.

Since it was previously decided to omit SS pre-treatment in the dedicated feedstock technical brochure, it should be included in the WWTP report.

Case studies will be used to illustrate good examples. The WWTP in Zürich Case Study has been drafted and prepared for publication. Nathalie invited contributions for other Case Studies.

Co-authors are invited. Suggestions for a neutral editor are invited.

ACTION: Submit proposals for relevant Case Studies to Nathalie (June 2014)

A.4: Biogas from Algae

Topic Leaders Jerry Murphy (Ireland) and Bernhard Drosig (Austria) with support of Ho Kang (Korea) and others:

Material has been assembled on mainly seawater macro-algae and a preliminary draft on this part of the report was provided by Jerry before the meeting. This includes a Case Study from Sweden. Cicero would like to include fresh water algae. Co-digestion with animal slurry is a key part of macro-algae AD.

Charles has previously offered to be editor of the report.

ACTION: Jerry and Bernhard to produce 1st draft for next meeting (September 2014)

Topic B – AD Products Utilisation:

B.1: Biogas Up-grading

Topic Leader Tobias Persson (Sweden):

In summary:

- The up-grading plant list (341 entries) and the up-grading plant suppliers lists on the Task website are regularly up-dated using SGC data and input from members. A new list on grid injection equipment suppliers has been added.

The up-grading plant list is in Excel format which allows users to make their own graphs. Previously, Tobias stated he would like to design a tool to enable graphs to be made with the Task 37 logo included on the template; this would help to ensure proper citation of the source of information and promote Task 37.

LinkedIn is now used as a tool for collecting information.

- The draft of a report on "Biogas in Smart Grids" / "Power to Gas" was produced by Tobias and Jerry. There is extensive interest in smart grids and grid balancing and contributions from Brazil, South Korea, Germany, Ireland and Sweden have been received. In Brazil there is interest in using existing water storage capacity in reservoirs and using biogas for base load demands.

- Sweden has published a report "Power to Gas – a technical review" (SGC284:free download from www.sgc.se).

ACTION: All members to provide up-dates on up-grading plants to Tobias
(Continuously)

ACTION: All to provide information on up-grading plant suppliers to Tobias
(Continuously)

ACTION: All members to provide information on grid injection equipment suppliers to Tobias (Continuously)

ACTION: Tobias to produce final report of "Power to Gas" report (September 2014)

B.1a: Biomethane Trade Study with Task 40

Task 37 contributes to a biomethane trade study led by Task 40 (Daniela Thrän). Tobias Persson and Mattias Svensson (Sweden), along with John Baldwin (via Clare, UK) contribute information and author the part of the report on up-grading technologies, grid injection and emissions along the whole process pathway on behalf of Task 37. Most of the work of Task 37 has been completed and we are waiting for a final draft of the report.

ACTION: Provide comments to final report and carry out editing of the Task 37 contribution. Tobias and TL (date dependent on Task 40)

B.2: Biomethane use as a Transport Fuel

Topic leader Mattias Svensson (Sweden): This work is carried in collaboration with IEA Advanced Motor Fuels (AMF) Annexes 39 (Magnus Lindgren). This joint project is expected to start soon. IEA AMF will provide input on engines and vehicle emissions.

Tobias and Mattias will communicate needs to Task 37 members when these are known.

Questions from Mattias before starting the work:

- Who is the target audience ? – Answer - this should be mainly local and municipal authorities
- Can Task 37 provide extra funds to IEA-AMF ? – Answer - We have not budgeted for this so the answer is no.
- What is the expected size of report ? – Answer - approximately 20 pages (~15,000 words) is expected.
- Is it important to include certification and inspection practices in different parts of the world ? – Answer - the opinion of the TL is that some examples can be given to illustrate different rules and their impacts, but the report cannot hope to be an extensive reference on this aspect.

ACTION: Mattias to work in collaboration with IEA-AMF and report progress at next meeting (October 2014)

B.3: Digestate Up-grading

Topic leader is Teodorita Al Seadi (Denmark) in close collaboration with Bernhard (Austria): A rough incomplete draft has been prepared by Teodorita with substantial input from previous work by Drosch and Fuchs. There are other possible contributors from the Task as well as from New Zealand via IEA Bioenergy ExCo. The question of how to deal with costs needs to be considered by the authors. A final draft is targeted for mid-2015.

ACTION: Teodorita and Bernhard to report back to the Task at next meeting on progress (October 2014)

Topic C – Sustainability:

C.1: Methane Emissions

Topic leader is Bernd Linke (Germany): Bernd presented a summary of the scope and contents of a new report of emissions. Since the last meeting in Seoul, the Swedish emissions project has been launched and plant emissions measurements have been planned for September 2014. There will be an IBBA workshop in Kiel (Germany) in September. The proceedings of the Kiel workshop will be published on the Task 37 website.

Bernd previously defined the main topics of the report:

- overview of identification methods and measurement of methane leaks
- calculation methods for methane release
- emissions for all steps in the process
- factors affecting residual methane potential
- biological inhibition of methane release
- collaboration with Task 38 on LCA scope is planned (EC-JRC will carry out LCA study)

ACTION: All members to provide information on national reports on emissions studies and plant measurements to Bernd and Tobias (**September 2014**)

C.2: Biogas LCA

This work is incorporated into Topic C.1 (methane emissions). The European Commission JRC has proposed to contribute to LCA because Task 38 cannot do the work originally anticipated. Task 38 will however be involved in guiding the work according to the ISO 14040 LCA standard.

Topic D – Horizontal Topics:

D.1: Workshops and Seminars

The target is to hold at least one technical workshop/research exchange seminar each year. The Task has already held 2 in the 2013-2015 work programme.

D.2: Success Stories and Case Stories (Information and Education)

Status of Success Stories

- Linko Gas: Up-graded large scale co-digestion plant - published November 2013
- Sweden NSR to be prepared in 2014
- Sweden Lidköping to be prepared in 2014
- Two additional success stories from Denmark in 2014

It was decided to reject the proposal from MT-Energie (Germany) for a Success Story on its specific method for AD process monitoring. The reason is that it is not the role of IEA to promote commercially available techniques or technologies individually.

ACTION: Final drafts of agreed Success Stories to be provided to TL for editing and publication (**according to agreed schedule**)

Status of Case Stories

- Brazilian farm biogas (Cicero) – published September 2013
- Optimised energy concept for WWT in Zürich (Nathalie) – Final draft received and prepared for publication in the near future.
- Developing country AD to be provided at a later date (see Section 2 above)

D.3: Support to Formulation of Standards

The European standards group for biomethane grid injection and use as a vehicle fuel, CEN/TC408 has produced draft texts for discussion by CEN member countries. It is possible that two standards will be available by the end of 2014.

D.4: Website and Newsletter

The layout of the website has been up-dated again. Members are encouraged to use the Members Area for exchange of information (20 MB limit on individual files).

A new tool on the website is being developed for reports and searching for reports; this is "biogasreports", also available at www.biogasreports.com

The newsletter is produced quarterly and distributed on request to more than 800 organisations. It is also available on the website. Members are invited to contribute stories for the newsletter.

ACTION: All members to provide stories for the newsletter to Arthur Wellinger
(continuous)

ACTION: TL to provide news on Task 37 publications for inclusion in the newsletter.
(immediately after each publication)

General Topic:

There was a proposal to up-date the templates used for publications in order to ensure consistency and to enhance the profile of Task 37. The overview Powerpoint presentation of Task 37 made at the meeting with the CIBiogas mirror group had been prepared with a new template that can be used by members for external meeting and conferences. It was agreed that the template for the main type of publication of Task 37, the Technical Brochures, should be reviewed.

ACTION: All members to review layout of new ISBN numbered Technical Brochures and suggest possible enhancements for the future template. Comments invited on Task 37 overview Powerpoint – see website for Workshop in Brazil (September 2014)

4 Work Programme 2016-2018

First ideas from round table contributions in Brazil.

The aims should be to provide:

- Technology support
- Policy support (with the possibility to provide input to policy initiation)
- Economic and socio-economic aspects of biogas for member countries (whole IEA/OECD and other countries).

Possible Topics to be addressed:

- Biogas up-grading (up-date of existing brochure)
- AD without financial support (e.g. without feed-in tariffs)
- Socio-economic aspects of biogas and utilisation – what are the real costs of biogas
- Sustainable (cost and environment) (or alternative) feedstocks (competition with other users of biomass)
- Biogas integration in other industries/processes (including biorefineries)
- Biogas in grids and energy/fuel supply of the future (smart grids)

- Environmental impacts – continuing from 2013-2015 WP
- Digestate quality management technical brochure up-date
- Digestate biofertiliser technical brochure up-date
- Innovative AD technologies (maybe to address smart grids needs)
- AD for developing countries
- Biogas utilisation
- AD of food waste
- Guide for recommended laboratory tests
- Database for BMP test results
- Biogas reports and search tool (www.biogasreports.com)
- Success Stories and Case Studies

These topics will be discussed in detail at the next meeting in France in October 2014. That will be the first step of the preparation of the new work programme by the new Task Leader.

5 Country Reports

A consolidated summary of the Country Reports was published in January 2014. The next one will be compiled late in 2014 ready for publication in January 2015. Powerpoint presentations made at Task meetings will continue to be put on the Task 37 website - <http://www.iea-biogas.net/country-reports.html>

ACTION: Provide up-dates to individual Country Reports in Word format before the next meeting (**September 2014**)

6 Workshop Report

The Task had a joint meeting with the South America mirror group CIBiogas. A short proceedings for this event is provided separately in Appendix I.

All presentations can be found on the Task website. (<http://www.iea-biogas.net/workshops.html>)

7 Dates of Future Meetings

October 15-17, 2014, Angers, France (hosted by ADEME)

March 25-27, 2015, Stockholm, Sweden (hosted by SGC). Note: There will be an opportunity to attend the Swedish Green Gas Research conference (www.greengasresearch.se) in Örnköldsvik on March 23 & 24. The Task 37 technical visit to a biorefinery will take place on March 25 close to Örnköldsvik in the north of Sweden.

September/October 2015, United Kingdom (date and place to be decided)

NOTE: The IEA Bioenergy end-of-triennium conference is planned to held in Germany (probably in Berlin in November 2015)

8 Any Other Business

A. There has be no further contact from IEA International Renewable Energy Agency (IRENA) following an initial invitation for Task 37 to provide support to a project on the implementation of AD for waste treatment in cities in developing countries.

B. There was an open discussion on the selection of a new Task Leader for work programme 2016-2018. Election of the new Task Leader will take place at the next meeting in France in October 2014.

8. ACTION List

What	Who	When
Final amendments to small-scale economics brochure	Clare Lukehurst	May 2014
Final editing of small-scale economics brochure	TL	May 2014
Submit proposals for developing country AD Case Studies	All	September 2014
Send information on national process optimisation projects/reports to Bernhard Drogg	All	September 2014
Submit proposals for scope of AD of food waste for discussion at next meeting	All	September 2014
Submit proposals for Sewage Sludge Case Studies to Nathalie	All	June 2014
First full draft of AD of algae technical brochure	Jerry Murphy & Bernhard Drogg	September 2014
Provide input to Tobias Persson for up-dating biogas up-grading plant	All	Continuous
Provide input to Tobias Persson for biogas up-grading plant suppliers list	All	Continuous
Provide input to Tobias Persson for new biomethane grid injection equipment suppliers list	All	Continuous
Final draft of Power to Gas brochure	Tobias Persson	September 2014
Carry out review and editing of joint study with Task 40 of trade of biomethane	Tobias Persson and TL	Date depends on completion of drafting by Task 40
Carry out collaborative work with IEA-AMF and report back to Task 37 at next meeting	Tobias Persson and Mattias Svensson	October 2014
Report progress on digestate up-grading technical brochure	Teodorita Al Seadi and Bernhard Drogg	October 2014
Provide information on national reports on emissions studies and plant measurements to Bernd Linke and Tobias Persson	All	September 2014
Final drafts of agreed Success Stories provided to TL for editing and publication	Agreed authors	According to agreed schedule
Provide news/stories to Arthur Wellinger for newsletter	All	Continuous
News of Task 37 publications provided for input to newsletter	TL	Immediately after each publication
Provide comments/proposals for up-dating publication templates – 1 st priorities are Technical Brochures and Task 37 Powerpoint	All	September 2014
Provide up-dates to individual Country Reports in Word format before the next meeting	All	September 2014

9. Task Meeting Close

The Task Leader thanked Cicero Bley for the excellent organisation of the meeting and the opportunity to contribute to the meeting with the Biogas Mirror group for Latin America and the Caribbean.

David Baxter

Petten April 28th 2014

APPENDIX I
Summary of Joint IEA Bioenergy Task 37 and Biogas Mirror Meeting
April 4th 2014

1. Meeting Data

Prepared by: Aline Scarpetta, Liciane Eckert, Jessica Mito, Giordano Corradi and Marcelo Alves de Sousa.	Date: 4 April 2014	Venue: Mercosul Rooms - FPTI
Responsibles: Aline Scarpetta and Marcelo Alves de Sousa	Type of meeting: Ordinary	Time: 9 am - 1 pm

2. Subject

Implementation of the IEA Task Force 37 – Biogas Mirror, in Latin American and the Caribbean

3. Participants

The event was attended by members of IEA Bioenergy Task 37-Biogas, as well as various invited participants, as observers, as shown in Appendix Ia.

4. Meeting outputs

The event began with the greeting of the Brazilian Director General of ITAIPU Binacional, Mr. Jorge Miguel Samek, and thanking all for their presence. Among other observations Mr. Samek highlighted that – as happened through biogas – the development of local resources of energy produces richness in the region by strengthening the local economy and creating great environmental benefits, besides the energy effects. Following, the Chief of the Biofuels Department of the Ministry of Mines and Energy of Brazil, Mr. Ricardo Dornelles, greeted all of those present in the meeting and pointed out that the commitment of the Ministry is to the development of biofuels; Dornelles highlighted that there is room for the development of all resources of these renewable energies. He also pointed out that this event shows the desire of working together to consolidate biogas in the Brazilian and Latin-America energy matrices. His speech was concluded by thanking the organizers of the event and all participants for the opportunity of participating in the implementation of the IEA Task Force 37 – Biogas Mirror – Latin America and the Caribbean. Lastly, ending this moment of welcomes, the leader of the IEA TF 37 Biogas, Mr. David Baxter thanked the organizers of the event for the invitation and for the support of the 14 countries that are a part of the IEA TF 37, stressing that 11 of these countries were represented in this event and that the Task 37 Mirror will be welcomed along with the representatives that are a part of the TF-37.

Following, Mr. Cícero Bley began to coordinate the presentations stressing the importance of the presence of all institutions – emphasizing role of the Ministry of Mines and Energy, the National Oil Agency (ANP), the National Electric Power Agency (ANEEL) and Eletrobras – considered the fundamental actors for the development of the renewable energy in Brazil. He also thanked to FAO, the Biogas Brazilian Association, COMPAGÁS, Embrapa, the City Hall of Toledo, IAPAR and TK37's colleagues, highlighting that all are planters of the knowledge for the development of biogas and that the initiative of the Ministry of Mines and Energy in supporting the Task 37 Mirror in Brazil is very important.

Next, was made a presentation on biogas in Brazil and the national potential of residual biomass for the development of the potential applications of biogas, to develop local economy. If mobilized as an energy asset it may be incorporated to the GDP of the Latin American and Caribbean countries, as positive externalities related with sustainability. The region has competitive advantages of climate and biodiversity to carry out anaerobic digestion and to recover biogas.

There are difficulties for biogas to be assimilated as gas by the energy matrices of Latin-American and Caribbean countries. Due to this fact there are few – almost none – permanent organizational institutions focusing on biogas in Latin-American and Caribbean countries. Also, there aren't any established standards for quality and security assurance on biogas supply. Biogas is seen as just a byproduct without economic values because it is not yet recognized in the traditional energy sector. Biogas still does not have any reliable regional indicators and there is a lack of public policies and permanent institutions for its regulation and management. Many origins of residual biomass may be used to produce biogas; they are acquired in various forms and with different geographical characteristics. The biogas energy chain needs to be organized to solve some of the existent difficulties. There are to-date few organized exchanges of information about biogas. However, when this information is shared, the knowledge is expanded. There is also a need for more governmental incentives, specific regulations and traceable legislation to allow the promotion of effective and efficient management of biogas. It was important to remember that the world's energy matrices are changing, in fact gas use has increased the most in recent years. There are strong signs for the possibilities of biogas development, as the Petrobras example, which is investing in the use of biogas from the Gramacho landfill in Rio de Janeiro; the development of shale gas around the world; the opening of the Ministry of Mines and Energy for the Biogas and Biomethane Brazilian Program (similar to biodiesel); the public policies being implemented in the states of São Paulo, Paraná and Rio Grande do Sul; the Biogasfert program (between EMBRAPA and ITAIPU Binacional), the Biogas Laboratory Network implementation; the basic industry infrastructure being implemented and consolidated; and the foundation of the Biogas and Biomethane Brazilian Association, among others.

The leader of the TF 37-Biogas, Mr. David Baxter, made a brief presentation about the International Energy Agency (IEA), which was created for the energy security during the oil crisis of 1973-1974. The Agency has 28 member countries, its headquarters is in Paris, France. The 4 key aims of IEA are energy security, economic development, environmental awareness and engagement worldwide. Since the 1970's IEA has set up a number of work groups (called Implementing Agreements) to provide expert analysis and support for a wide spectrum of energy topics. According to Mr. Baxter, enterprises began to care for environmental issues and saw the economic benefits of clean technologies. He highlighted that IEA Bioenergy produces a number of documents including technical studies and roadmaps. IEA Task Force 37 addresses a range of topics in the field of biogas economic and environmental sustainability. Mr. Baxter ended his considerations by telling the case of an innovative biogas producer (in Finland) who did not receive incentives but even so managed to build a successful small-scale production unit. Ever since, this producer has been developing his project and marketing his technology and has received economic benefits and other benefits for his farm through biogas production.

There followed 4 presentations from members of Task 37. Mr. Günther Bochmann, representative of Austria and of the University of Natural Resources and Life Sciences/BOKU presented the theme: Pre-treatment of biomass. A full report on this topic will be published on the Task 37 website (<http://www.iea-biogas.net/technical-brochures.html>) soon after the meeting. Following, Mr. Jerry Murphy, from Ireland, spoke about the theme: Anaerobic Digestion of Algae which is the subject of a new report being prepared by Task 37 for publication in 2015. Then, Mr. Roald Sørheim, from Norway, was invited to present examples of Anaerobic Digestion in small rural properties. The economics of small-scale biogas plants is the subject of a Task 37 nearing completion. And lastly, Mr. Mathieu Dumont, from the Netherlands, addressed the development of the biomethane market in the Netherlands and how regulations and certification are being introduced to cater for biomethane for use as a substitute for natural gas.

Among the discussions that followed were:

The superintendent of biofuels of the National Oil Agency, Mr. Alexandre Cardoso Costa Caldeira, pointed out the deficiency of legislation for biogas and the importance of joining forces for small producers of biomethane to promote access to incentives for its commercialization. Mr. Cicero Bley Jr. agreed with him and declared the need for a specific work group for these issues, so that one may guarantee the quality of the biogas supply. ANEEL's Normative Resolution 482 has been stimulating the development and connections in distributed generation of renewable

energy. Since the characteristics of power generation with biogas are similar to those of hydroelectric generation, i.e. one may store gas to generate energy and supply it to the network according to demand. Thus, ANEEL must consider such benefits and differences when reviewing the resolution 482, or propose a more adequate resolution to the generation of energy with biogas.

Mr. Luiz Carlos Balcewicz, assessor for fund raising and institutional relationships of the municipality of Toledo, Paraná, talked about biogas biological desulphurization in the context of the costs of the hydrogen sulfide reduction. He also commented about the filtering process used at the Agri-Energy Cooperative for Family Farming, and questioned what would be the level of quality of gas that is being sought for the intended application. EMBRAPA's researcher, Dr. Airton Kunz, commented that there are various technologies and costs for biogas filtering (upgrading). However, it is necessary to define final intended use and the level of quality that is needed to be achieved. Mr. Cícero Bley gave his opinion about the biological desulphurization and other technologies that may reduce costs, but might compromise the biogas development, keeping in mind that biogas is explosive in the presence of oxygen. Because the intake of biomass in rural digesters is not constant, an excess of oxygen for the biological desulphurization may lead to an explosion and discredit all efforts in biogas projects. Thus he does not recommend use of oxygen (air).

Following this, participants discussed the development of biogas in several countries such as Denmark and Germany, stressing that biogas is a complementary energy to the energy matrix. Mr. Emerson Coraiola Yinde Kloss, Chief of the Division of Renewable Energy of the Ministry of Foreign Relations, highlighted that the actions that ITAIPO Binacional develops in the region are of high relevance, as a highlight he cited the generation of energy in small production units. Mr. Byron Chilliquinga, representative of the Latin American Energy Organization (OLADE) reported that meetings like the one held today are consolidating the experiences and knowledge about biofuels, and that it is highly important for OLADE.

Mr. João Zank, from CIBiogás-ER questioned IEA members about their perceptions of the technologies and methodologies applied for the Agri-Energy Cooperative for Family Farming project - such as small biodigesters, biomethane filter (for up-grading to biomethane), grain drying and the system of generation of electric energy in distributed generation – and how this reflects on the regional development. Mr. Jerry Murphy from the IEA TF 37 responded informing that these are promising technologies for the biogas development, and that they contribute very beneficially to local economic development, creating income, jobs, knowledge and a new chain of regional energy supply and development; biogas is an ideal fuel for distributed energy.

Mr. Ricardo Dornelles questioned if in the academic environment there is competition for knowledge on sources of energy and how much effort has been spent compared to the production of liquid biofuel in relation to the gas; also about market research to verify the real need of investment and research. Mr. Jerry Murphy and Mr. Günther Bochmann from the IEA TF 37 answered that in the EU it is quite easy to produce biogas from corn and other crops even if they are food crops. They also affirmed that biogas is better than liquid fuel in terms of energy conversion efficiency. Documents published in Europe referring to biofuels have a lot of political influence. According to Cícero Bley the equilibrium between water, energy and food is a challenge.

The plenary agreed that the implementation of the TF-37 Biogas Mirror in Latin America and the Caribbean will bring for the countries of this region a source of references of very high level on all biogas issues, bringing them to the federal governments, for actions of implementation of national public policies on biogas while preserving the different cultures and experiences.

The event ended with the acknowledgment for the generosity of the colleagues from IEA TF 37 and with the definition of a date for the next meeting of the TF 37 Biogas Mirror, which will be during the last week of September 2014 in Foz do Iguaçu. This will take place along with the meeting agreed between CIBiogás-ER, FAO and OLADE, the theme the 7th International Conference on Biofuels: Biogas. The main goal of the meeting will be the countries adherence to IEA Task Force 37 Biogas-Mirror, by signing the Memorandum of Understanding (MoU), which was distributed during the event. The MoU will guide participation of the countries in the IEA TF 37 Biogas-Mirror.

Lastly it was decided that CIBiogás-ER will act as executive secretariat for the TF 37 Biogas-Mirror.

APPENDIX II
TASK 37 MEMBERS, AFFILIATIONS AND CONTACT DETAILS

EUROPEAN COMMISSION (Task Leader)

David Baxter
Clean Energies Unit
European Commission Joint Research Centre
Westerduinweg 3
1755 LE Petten, The Netherlands
Tel: +31-22456-5227
Fax: +31-22456-5626
email: david.baxter@ec.europa.eu

AUSTRIA

Bernhard Drosig
IFA-Tulln
BOKU - University of Natural Resources and
Life Sciences, Vienna
Institute for Environmental Biotechnology
Konrad Lorenzstrasse 20
A-3430 Tulln, Austria
Tel.: +43 2272 66280 537
Fax.: +43 2272 66280 503
email: bernhard.drosig@boku.ac.at

Alternative member:
Günther Bochmann
(same address as Bernhard Drosig)
Tel: +43 2272 662 80 536
email: guenther.bochmann@boku.ac.at

BRAZIL

Cícero Jayme Bley Jr.
Renewable Energy Advisor at Itaipu Binacional
Brazil
Tel.: +55 45 3520 5252
Email: cbley@itaipu.gov.br

DENMARK

Teodorita Al Seadi
BIOSANTECH - Biogas advisory and consulting
Lerhøjs Allé 14
DK-6715 Esbjerg
Denmark
Tel: +45 305 11553
email: teodorita.alseadi@biosantech.com

FINLAND

Jukka Rintala
Department of Chemistry and Bioengineering
Tampere University of Technology
P.O.Box 541
FI-33101 Tampere, Finland
Fax: +358 40 506 2425
email: jukka.rintala@tut.fi

FRANCE

Olivier Théobald
ADEME - Direction Consommation Durable et
....Déchets
Département Gestion Optimisée des Déchets
20 avenue du Grésillé BP 90406
49004 Angers Cedex 01, France
Tel: +33 2 41 20 43 12
Fax: +33 2 41 20 43 48
email: olivier.theobald@ademe.fr

Alternative Member:
Guillaume Bastide
(same address as Olivier Théobald)
email: guillaume.bastide@ademe.fr

GERMANY

Bernd Linke
Leibniz-Institut für Agrartechnik Potsdam-Bornim
(e.V.)
Abt. Bioverfahrenstechnik
Max-Eyth-Allee 100
14469 Potsdam
Tel: +49-331-5699-110
email: blinke@atb-potsdam.de

IRELAND

Jerry Murphy
Director Bioenergy and Biofuels Research
Environmental Research Institute
University College Cork
Cork
Ireland
Tel: +353 21 490 2286
Fax: +353 21 427 6648
email: jerry.murphy@ucc.ie

KOREA

Ho Kang
Chungnam National University
220 Gung-Dong
Yuseong-Gu, Daejeon
305-764
Republic of Korea
Tel.: +82 42 821 6675
Fax: +82 42 822 5610
Email: hokang@cnu.ac.kr

NETHERLANDS

Mathieu Dumont
Netherlands Enterprise Agency
Croeselaan 15
3521 BJ Utrecht
The Netherlands
Tel: +31 88 602 2790
Fax: +31 30 231 64 91
email: mathieu.dumont@RvO.nl

NORWAY

Roald Sørheim
Bioforsk Ullensvang
N-5781 Lofthus, Norway
Tel: +47 900 94 486
email: roald.sorheim@bioforsk.no

SWEDEN

Tobias Persson
Svenskt Gastekniskt Center AB
Scheelegatan 3,
S-212 28 Malmö, Sweden
Tel: +46 40 680 07 64
Fax: +46 40 680 07 69
email: tobias.persson@sgc.se

Alternative member:

Mattias Svensson
(same address as Tobias Persson)
Tel: +46 406800760
email: mattias.svensson@sgc.se

SWITZERLAND

Nathalie Bachmann
Energie Conseil Bachmann
Route de Chambovey 2
1869 Massongex
Switzerland
Tel : +41 77 476 7688
email : enbachmann@gmail.com

UNITED KINGDOM

Clare Lukehurst
52, Broadstairs Road
Broadstairs
Kent CT 10 2 RJ
England
Tel/Fax: +44 1843 861690
email: clare.lukehurst@green-ways.eclipse.co.uk

Alternative member:

Charles Banks
Southampton University
England
Tel: +44 23 8059 4650
email: cjb@soton.ac.uk

OPERATING AGENT

Kyriakos Maniatis
European Commission
DG ENER
Rue de la Loi 200
B-1049 Brussels, Belgium
Tel: +32 2299 0293
Fax: +32 2296 6261
email: kyriakos.maniatis@ec.europa.eu