



Working Group 4 Meeting

Geomar Helmholtz-Zentrum für Ozeanforschung, Kiel (Germany),
4th-5th November 2015

(Astrid Ulbrich)

Draft Minutes

Participants:

<u>4th November 2015:</u>		<u>5th November 2015:</u>
Prof. Klaus Wallmann, Geomar, DE		Prof. Klaus Wallmann, Geomar, DE
Dr. Jörg Bialas, Geomar, DE		Dr. Jörg Bialas, Geomar, DE
Dr. Jan-Stefan Fritz, Konsortium Deutsche Meeresforschung, DE		
Dr. Matthias Haeckel, Geomar, DE		Dr. Matthias Haeckel, Geomar, DE
Dr. John Hopper, Geological Survey of Denmark and Greenland, DK		Dr. John Hopper, Geological Survey of Denmark and Greenland, DK
Mr. Georg Janicki, Fraunhofer UMSICHT, DE		Mr. Georg Janicki, Fraunhofer UMSICHT, DE
Dr. Héctor Marín Moreno, National Oceanography Centre, UK		Dr. Héctor Marín Moreno, National Oceanography Centre, UK
Dr. Anja Reitz, Geomar, DE		
Mrs. Astrid Ulbrich, Geomar, DE		Mrs. Astrid Ulbrich, Geomar, DE

Agenda

1. Preparation of policy maker workshop at Brussels
2. Preparation of industry workshop at Oberhausen
3. Discussion of funding options for gas hydrate R&D in Europe
4. Discussion on Anja Reitz' exploration of a new idea for a gas hydrate proposal

4th November 2015

14:00 – 16:45

Introduction of Klaus Wallmann

Klaus Wallmann gives a short overview of the actual plans for MIGRATE: MIGRATE plans to improve the webpage and to make sure it runs. Moreover he intends to strengthen the communication amongst the Management Committee Members. Besides that he points out the importance of a good relationship with industry.

As far as the agenda is concerned Klaus Wallmann suggests to start with point 4, "Discussion on Anja Reitz' exploration of a new idea for a gas hydrate proposal", and continue with point 1, "Preparation of policy maker workshop at Brussels", as Dr. Fritz needs to leave earlier. Point 2 "Preparation of industry workshop at Oberhausen" and 3 "Discussion of funding options for gas hydrate R&D in Europe" will be postponed to the next meeting day. He would also like to discuss the logo versions for the MIGRATE webpage tomorrow morning.

Jan-Stefan Fritz suggests to start with an introduction round amongst the meeting participants, mentioning the names and functions; everybody agrees:

Anja Reitz: oceanology group ECO2, now responsible for AtlantOS

Matthias Haeckel: coordinator of the gas hydrate project SUGAR

Georg Janicki: process engineer, involved in SUGAR; exploration of gas hydrate

Héctor Marín Moreno: UK gas hydrates since three years

Dr. Hopper: Geophysician at the Geological Survey of Denmark and Greenland, gas hydrate is not really existing in Denmark.

Jörg Bialas: Geophysician, participant of SUGAR

Astrid Ulbrich: MIGRATE administrative project manager

Klaus Wallmann: Coordinator of ECO2 and of SUGAR, Chair of MIGRATE

Discussion on Anja Reitz' exploration of a new idea for a gas hydrate proposal"

Klaus Wallmann would like to talk about the funding options of this idea.

Anja Reitz explains that she spoke to the head of climate action EASME, who is the main contact. It would be better to evaluate more than just gas hydrate. There could be evaluated existing data of the continental margins but there do not exist chemical or engineering data. Scientists and industry should get together, e.g. Statoil, Shell; GEO in Brussels would be reasonable. Anja Reitz continues that in 2016 there will be a joint EASME and GEO session at which occasion Klaus Wallmann could represent MIGRATE.

Jan-Stefan Fritz adds that several agencies would be better than just choosing GEO of Brussels. GEO is one of the matter initiatives when weather services and different agencies join.

Anja Reitz mentions that Horizon 2020 is about to open data.

Klaus Wallmann would like to know whether AtlantOS is engaged in GEO.

Anja Reitz answers that AtlantOS is like a contribution to GEO. It does not seem to exist without GEO; in the case of SEAMOC it is similar.

Klaus Wallmann suggests work package 1 to collect data and to write spots together with other groups that are strong in data management and collection. The contact to survey companies are helpful when addressing industry. A seismic collector like **Fugral (?)** could produce data. The most important would be the governmental agencies that are working on storage and publication.

John Hopper declares that the Geological Survey of Denmark and Greenland has already published data that industry was interested in.

Klaus Wallmann believes that data for higher than 500m is not that interesting for industry.

John Hopper mentions that Norway collects these data since ten years, and that industry has to pay for the data.

Klaus Wallmann declares that it should be figured out who is responsible in each country and to gather all these people at one table in order to discuss the theme.

John Hopper subjoins that seismic companies would be interested, too. The point is that data might have longer confidentiality.

Jörg Bialas explains that his contact to AMC was that AMC didn't want them to have the expedition in the area of the Black Sea, whereas **Acson (?)** was interested in this work, although this was a one-way relationship. They didn't even give information above 500m.

John Hopper says that this is a separate agency. The department needs to know when it becomes public. It would be important to know standard rules.

Jan-Stefan Fritz would like to know the purpose of the project.

Klaus Wallmann declares that it would be better to constrain the ideas of the project around Europe.

Anja Reitz suggests convincing industry partners.

Jan-Stefan Fritz explains that in order to aim for European money there will be competition with other projects. That's the reason why it should be considered: 1) the jobs in growth and 2) that projects need a strategic nature and science specifically as well as at multilateral platforms. Titles should have comprehensive assessments, like AtlantOS (= integrating observation system), e.g. "gas hydrate gives potential energy resource". If MIGRATE only declares that it would be about ocean margins, how they develop etc., there might be no interest for MIGRATE, as research community has worked on that issue already and will also work on it in the future. Therefore MIGRATE would need a topic, like "resource assessment". In his opinion MIGRATE should go deeper than 500 m because this would be more interesting for the public. It should also be pointed out why this is done now.

Therefore it would be a good idea to work together with Brazil or Canada in order to make it a substantial project.

John Hopper wonders how this could be done, maybe with money from funding agencies.

Jan-Stefan Fritz explains that the easiest way would be to go to Horizon 2020 by writing a text but chances to talk with industry might be worst.

Anja Reitz adds that better knowledge of geochemical value is important.

Jörg Bialas continues that gas hydrate should be pointed out as a resource. Everybody sees the drilling and the leakage of potential reservoirs.

Klaus Wallmann explains that a lot of money had been spent by India, Japan and China to explore the continental margins for hydrates. New Zealand also spends a lot of money in exploration. Industry is involved because they are forced by their government to act like that.

Jan-Stefan Fritz says that the question is: What is the potential energy in Europe vis-à-vis everybody is able to pay on the global market? The same debate was followed in deep sea mining. Energy security has to be considered. Geo-mechanics can focus on having a research question and deal with other questions, like "we want to have research fund". Energy is one issue and then ocean margin becomes more industrial. The cost benefits and the risks are the key issues.

Klaus Wallmann adds that Ireland and Romania would be important to explore and should thus be convinced to do so. The question is: "What will happen on EU level?"

Jan-Stefan Fritz continues that MIGRATE would have to wait for a start-up at stock exchange. He believes that the energy issue to try the research agenda with would be too difficult. He doesn't think that in Europe there will not be any support for this. Another issue that would move people are the standards for exploration in resources in the continental margins. The broader support in Europe is furnished by the research and the economic representatives. Issues like oil had already been discussed in Europe but there are more interesting themes for the public.

Klaus Wallmann says that Europe is a developing area regarding the subject "hydrates", other than deep-sea mining.

Héctor Marín Moreno asks for the idea of gas hydrate motivation.

Klaus Wallmann answers that it is to be more independent if there is a potential. Japan is already developing a lot of data.

Matthias Haeckel adds that the situation in Europe is very different compared to other countries.

Klaus Wallmann poses the question how these emissions are used with gas.

Matthias Haeckel says it could be done on national level or only together with whole Europe.

Anja Reitz replies that the risk might be too high.

Jan-Stefan Fritz says that this is difficult as there do not exist enough values that industry is interested in. The intrinsic research value is getting lost.

Klaus Wallmann believes that the only chance to get industry interested is with a "big carrot" like public funding goes to industry or they get money to contribute some data. It is difficult to say that gas hydrate is great while everything is cut down. Otherwise we will have to act without industry.

Jan-Stefan Fritz trusts that the research question is the most important, e.g. to work with a company like Statoil and to declare them that we would need their data in order to be able to do research.

MIGRATE provides the ground work, like using the hydrates as a resource. A strategic project would receive € 10 mio. in two years.

Klaus Wallmann wonders how to achieve the commitment of the EC that MIGRATE is interesting for them so they will spend money on it. He believes that this could only be done in collaboration with the public sector, like the government.

Jan-Stefan Fritz does not believe that the EC might be interested in the funding like for SUGAR. DG energy and DG policy will probably not support MIGRATE as they will not believe that gas hydrate is a potential resource.

Klaus Wallmann wonders if someone has an idea about how national governments could support MIGRATE.

Jan-Stefan Fritz replies that this will be difficult. He is happy to work on this as he believes it is the right time to focus on continental margins, similar issues in Portugal and Spain.

Matthias Haeckel thinks that a timescale of one to two years is to manage, although Klaus Wallmann believes that it should go faster.

Klaus Wallmann explains that serious observations mean drilling in the end with +/- 100 mio. Euros. Before data exploration is started a three years' project was seen as side benefits. MEBO should be added to this work. The lobby to promote should include hydrate as an energy – which is our goal at the industry workshop in Oberhausen in April.

Jan-Stefan Fritz adds on that there are a lot of energy experts in Brussels: Mr. Tim Collett of DIO (US) or Mrs. Carmen Opel, Mr. Koji Yamamoto (Japan), Mr. Scott Danimore (Canada), Mr. Ray Boswell (US).

Klaus Wallmann agrees that Mr. Ray Boswell would be the right person.

Klaus Wallmann means that burnable and unburnable gas hydrates are the main issues. The question is: "What should we burn to achieve max. yield of economic growth?" MIGRATE's idea is to burn all the gas and keep the coal in the ground, to create max. economic benefit.

Jan-Stefan Fritz interposes that one issue that should be addressed is that the environment of footprint might be better on the ground trying success as an energy resource. This would be interesting but should not be the point for MIGRATE.

Klaus Wallmann explains that natural gas is an important resource for the future.

Jan-Stefan Fritz thinks that gas hydrate in a broader context would be better.

John Hopper doesn't agree as the energy security is on the table; gas is burned even though we have oil.

Héctor Marín Moreno believes that they maybe don't want to go for gas hydrate as they want to go for fracking. In the UK gas hydrate is unexplored.

Matthias Haeckel explains that the depth for exploring gas hydrate lays at 500 + metres.

Klaus Wallmann declares that the consequence would be not to work on hydrates. He would like to know who goes deeper than that.

Héctor Marín Moreno answers that there are deep-sea pipelines.

Jörg Bialas adds that there are also production platforms. OMC was collecting data for TOTAL. They were looking into natural gas areas and greater water depth was included in the plans.

Klaus Wallmann adds on that in the North Sea Norway retreated and UK is taking over.

Matthias Haeckel asks whether there are extensions to look for oil and gas in Greenland.

John Hopper replies that this work is too risky in an unproven area. Moreover they cannot afford it.

Jan-Stefan Fritz explains that in Romania there are working for gas hydrates in a depth of 300 – 1200m.

Klaus Wallmann continues that Italy and Israel recovered a big gas field. He believes that MIGRATE should limit itself on outer shelves and slopes, on deep water and that cable companies might be interested, too.

Preparation of the policy maker workshop at Brussels

Jan-Stefan Fritz remarks that it will be difficult to find people for the MIGRATE event in Brussels, like for ECO2 in the past. The key issue is to have one "umbrella presentation" with key points, like case studies from the Arctic, Black Sea or Rumania.

Klaus Wallmann concludes the following:

Now: MIGRATE should work on risks with cable and pipeline companies.

Then: - To work on hydrates with research potentials.

- US colleagues could be invited.
- For burnable or unburnable hydrates one further person should be addressed.
- What is interesting?
- Maybe invite someone from Greenpeace.

Jan-Stefan Fritz declares that the invitation of a person with political background might be more reasonable, as e.g. Mr. Ray Boswell (US).

Klaus Wallmann believes that an advantageous topic would be "what can be burned and what can't be burned?", and a presentation on risks would be a good idea, too.

John Hopper adds the topic "climate impacts".

Klaus Wallmann explains that there is a need of justification; the "impact" is a minimum topic.

Klaus Wallmann presents "The geographical distribution of fossil fuels unused when limiting global warming to 2°C" (of McGlade & Ekins). The motivation is to have unburnable reserves before the year 2050 to maintain temperature rise below 2°. As shown in the statistic of the European example:

- oil: 21 %, 5.3 billions of barrels
- gas: 6 %, 0.3 trillions of cubicmetres
- coal: 89 %, 74 Gt

It would be favourable to invite one of these two authors, Mr. McGlade or Mr. Ekins, as they have the conventional gas in their portfolio. At the occasion of the conference in Brussels, it would be a good idea to show a map of all European countries by indicating all cables and pipelines.

John Hopper subjoins that also the risks should be pointed out.

Jörg Bialas thinks that cables and pipelines are better issues.

Klaus Wallmann points out that hydrate melting could damage the cables and pipelines because of slope fail.

Héctor Marín Moreno adds that this is a different type of magnitude.

Jörg Bialas' opinion is that a slight line is needed.

Klaus Wallmann would like to know who knows a Ministry representative.

Hector Marín-Moreno affirms that he knows one in Italy.

Klaus Wallmann agrees that Hector Marín-Moreno should contact him.

Klaus Wallmann summarizes the main issues of MIGRATE:

- environmental risks
- risks regarding cables etc.
- resources
- role of natural gas in Europe under 2°C
- MIGRATE in general

The main message for the policy maker workshop in Brussels should be:

1. We need to explore outside Europe and understand the risks.
2. Unexplored resources need to be explored because they offer great potential.

Jan-Stefan Fritz wants to know who has shown particular interest in MIGRATE so far.

Klaus Wallmann responds that Ireland seems to be very interested. Moreover Rumania and Bulgaria should be interested as well. So far Romania does not have any representative in MIGRATE. Besides them Turkey is also very interested in MIGRATE as well as Israel.

Jan-Stefan Fritz points out that there is the need of one page of summary for MIGRATE.

Klaus Wallmann agrees that he will prepare it.

Jan-Stefan Fritz adds that it should contain what the event in Brussels is about.

Klaus Wallmann adds that the meeting in Brussels is scheduled for 26th May 2016 and that the grant period ends on 31st May 2016.

Klaus Wallmann believes it will be possible to invite one American representative, as there will be spent less money for the WG4 meeting.

Jan-Stefan Fritz explains that his office budget will pay for his participation in Brussels.

Klaus Wallmann asks the representatives of WG1 whether they can provide for a map of Europe.

Héctor Marín Moreno agrees that he can prepare it:

- WG1: research
- WG2: technologies
- WG3: environmental risks

Jan-Stefan Fritz points out that he would like to have more people joining the Brussels' meeting than experienced with ECO2. If a country is particularly interested in MIGRATE, there should be ambition about a national representation, e.g. Greenland, Rumania, Denmark. It is clear that German and UK MEPs will be interested, and the Scots are also interested. They should attend, too.

John Hopper remarks that hydrate is not on the agenda in Denmark.

Klaus Wallmann explains that MIGRATE has more than 140 members and that it is still growing.

Klaus Wallmann suggests to send the link of COST to Jan-Stefan Fritz so that he will be able to contact the national representatives directly.

Klaus Wallmann asks what further steps could be taken.

Anja Reitz answers that GEO should be contacted to give an idea about MIGRATE. Moreover it would be favourable to find one representative for pipelines and windpower and one from industry.

Klaus Wallmann continues that this leads now to the industry workshop in Oberhausen which is on the agenda for 5th November 2016.

Georg Janicki wants to know if it is possible to find specific groups for calls.

Klaus Wallmann replies that it is better to have various parts in the project.

Georg Janicki says that there is no call for gas hydrates in H2020.

Klaus Wallmann asks whether the upcoming industry workshop should be used for this or not. It might be that there is no interest in the workshop but as people will be refunded by COST maybe there is a chance.

Klaus Wallmann suggests also asking cable companies to attend the meeting.

John Hopper proposes to ask some of them.

Jan-Stefan Fritz would like to know what the scope of the project is. GEO is a place to win interested parties.

Klaus Wallmann suggest reviving the contact to **Holger ...(?)**, in order to be also technology oriented. Maybe also lobbying clubs could be addressed for a joint program where maybe people receive a refunding in the frame of H2020.

Jan-Stefan Fritz thinks that MIGRATE should consider a "building momentum", e.g. with GEO. He believes that all are too ambitious but ideas should be built first. Research in the Atlantic or Arctic is of great interest now. It would be important to find research interest in the United States.

Klaus Wallmann remarks that if MIGRATE wants to have funds in Europe than it should be looked into hydrates. MIGRATE will have to differentiate between what Klaus Wallmann is actually working on with Anja Reitz and between that the energy world, i.e. technology world how to prepare a field test. The industry workshop in April should focus on who operates cables and pipelines – just to do a brainstorming.

Georg Janicki suggests that one or two partners could discuss some ideas in addition to that workshop. He believes that bigger cable system providers would be more convenient than small enterprises.

Klaus Wallmann wants to know whether it should be devoted for cable and pipelines or for technology development; both would be too much.

Georg Janicki thinks that both sides are interesting and that it should be discussed on which side there is more interest.

Klaus Wallmann believes this is a good option.

Jörg Bialas points out that MIGRATE should agree on an opinion before they meet in order to avoid changes of opinion.

Klaus Wallmann announces that MIGRATE should find an opinion first and then talk to the energy sides. This year there should take place the workshop and next year representatives of technology and lobby should meet. The workshop in Oberhausen cannot cover both.

Klaus Wallmann summarizes:

1. H2020
2. GEO Club

18:30

End of the meeting day

19:30

Joint dinner

5th November 2015

9:00

Discussion of funding options for gas hydrate R&D in Europe

Héctor Marín Moreno recommends a pilot test within the IODP process.

Matthias Haeckel says that this will take at least five years up to eight years.

Jörg Bialas adds that there is a difference in IODP to drill hydrate/to store gas.

Klaus Wallmann would support **chicue (?)** drilling in the Black Sea and asks for a volunteer to write a proposal.

Héctor Marín Moreno regrets that he can't do it and adds that a senior should do this.

Klaus Wallmann asks him if Tim Minshull would be the right person.

Héctor Marín Moreno agrees that he will ask him.

Klaus Wallmann proposes to put this point on the agenda of WG 1 meeting in Southampton, 25th-26th November 2015.

Matthias Haeckel explains that there are plans of drilling hydrate reservoir at 200m depth.

The funding options could be e. g. continental margin, ITN, looking into **chicue (?)**.

Logo for webpage

Klaus Wallmann shows seven drafts for a MIGRATE logo prepared by the company Pepesale. Finally, all participants agree on draft one. Klaus Wallmann will still ask Tim Minshull if the spelling "marine gas hydrate" or "hydrates" is correct.

Matthias Haeckel would like to add Israel on the map and explains that all partners should be on the map.

Klaus Wallmann finalizes that the following missing parts should be added: Israel, North Africa, the Black See, Greenland, the Mediterranean, Faroe Islands, Russia and Canary Island.

Preparation of the industry workshop at Oberhausen

Klaus Wallmann explains that MIGRATE will present its results and the explanation to “who we are” by means of one or up to three presentations à 15 minutes. MIGRATE’s idea idea MIGRATE within the EU framework H2020 is to explore the continental margin and this should not be omitted.

John Hopper has the idea to target managers and companies, but Klaus Wallmann doesn’t believe this might work.

Jörg Bialas thinks that when operating drilling tests in the Black Sea the contact to license holders, like the foreign ministry would be a good idea. However, the problem then could be that they might contact the ministry of economy. For the future it might be a good option to cultivate contacts with the foreign ministry.

Klaus Wallmann believes that the focus on the Black Sea wouldn’t be enough. It would be more favorable to have more competition. This would basically be the approach of package 1, e.g. at Marocco, Greenland etc. WG1 should think about who will be addressed (industries of gas, cable and pipeline) and to consider the geochemical risks.

John Hopper believes that the more industries you have involved, the more EU interest you get in Brussels.

Georg Janicki thinks that ENP (exploration and production) should be contacted. Fraunhofer UMSICHT had already contacted them but up to now no cable industry has been contacted. A good idea would be to have one leadership/start-up company involved.

Klaus Wallmann adds that SUGAR goes European, like with TOTAL. MIGRATE should involve them, too.

Georg Janicki adds the big operator FUGO.

Klaus Wallmann thinks that the idea to invite gas mayors as well as pipeline and cable operators would be good.

John Hopper suggests inviting Repsol of Spain as well.

Héctor Marín Moreno has the impression that this enterprise is very carefully why they might probably not be interested.

Klaus Wallmann means that it is very important to point out to these enterprises that MIGRATE doesn’t want to have their money but that MIGRATE gives them money.

Jörg Bialas agrees that MIGRATE needs to point out that MIGRATE doesn’t want to have industry funding but that MIGRATE wants to join with industry. At this occasion Jörg Bialas would like to know how industry might be funded within the EU.

Klaus Wallmann will ask Anja Reitz about funding industry within the EU framework H2020. Maybe it should also be thought about some insurance companies whether they certify cables and pipelines.

Up to now we have the contact with Kongsberg, FUGO, CNB (of ECO2) and STATOIL.

Jörg Bialas suggest contacting OMC and TOTAL.

Klaus Wallmann thinks that the French colleagues or Christian Berndt should name potential contacts within TOTAL.

Georg Janicki suggests contacting WED.

Klaus Wallmann answers that Gøрге Deerberg should prepare a letter saying “Please give us the contacts regarding our MIGRATE projet to WED”.

Klaus Wallmann believes that JOGMEC would be a good partner, too.

Jörg Bialas adds that TOTAL Bulgaria and Rapsol Bulgaria were the main contacts in the Black Sea.

Klaus Wallmann would like Astrid Ulbrich to ask Deniz Karaca about how many industry representatives of which countries (EU and others) can be invited (maybe several times) with COST refund.

Héctor Marín Moreno prefers to invite just few and the information will then be spread. Moreover he thinks it is a good idea to contact the European Parliament directly.

Klaus Wallmann suggests to prepare a schedule and a draft presentation with the Core Group (the WG leaders) and then approach everybody of the consortium indicating some representatives of industry MIGRATE would like to invite. MIGRATE should figure out what cable and pipeline companies could be contacted. He says that everybody has personnel contacts, but the contacts should be made by the Oberhausen LOS, Gorge Deerberg and Georg Janicki. Then an e-mail should be sent to all MIGRATE members who will then get in touch with the industries. The approach to industry should be done in December 2015.

John Hopper believes that it makes sense to announce hydrate meetings.

Klaus Wallmann agrees, like it was the case with Stavanger.

Matthias Haeckel adds the workshop on hydrates: ENGE.

John Hopper says that people contacted GEUS to give talks.

Matthias Haeckel and John Hopper announce that AAPG meetings take part regularly, every spring with several 1000s of participants.

Klaus Wallmann believes it would be reasonable to take part at that next time. Moreover every three years there is another good meeting taking place: ICGH (science community and industry meeting).

Georg Janicki explains that the only industry involved last meeting was the flow insurance, and that the next meeting will take place in Colorado.

Matthias Haeckel says that Thomas Reichel had a session at EAGE.

Georg Janicki believes that oil and gas industry have no interest in exploring gas hydrates.

Klaus Wallmann interposes that they, however, want to know about it. **Tahodi/Tahidi (?)** is exactly doing that but he doesn't get money for it.

Jörg Bialas adds that the main topic of EAGE in Vienna is "unconventional reservoir".

John Hopper says that industry needs to see that it is a future research; a better resource than carbon is the gas hydrate.

Klaus Wallmann agrees and points out that he likes Héctor Marín-Moreno's report he sent him the day before. Klaus Wallmann explains that the main theme of this report is: "What happens when you bring more gas on the European market economically?" It would be convenient to have this idea for MIGRATE but he believes that some resources will be needed first.

John Hopper adds that at the moment there aren't any resources yet.

Héctor Marín Moreno explains that he had found the report in the internet at "International Association of Gas Production".

Klaus Wallmann has the idea to invite these authors to Brussels or to address them in Cambridge.

Héctor Marín-Moreno agrees but he adds that they might eventually not know what gas hydrate is.

Klaus Wallmann agrees with it and subjoins that he will talk to them.

Klaus Wallmann continues that there should be found someone to drill his national resources. The German Ministry of Economics would push this whereas the Department of the Environment would not agree. We need to persuade Turkey, Romania, Bulgaria and Ireland to push these ministries.

John Hopper would like to know whom Klaus Wallmann knows in Ireland.

Klaus Wallmann explains that MIGRATE has two Irish MC members: Nick O'Neill (who is working for a consultant company that could forward cruises) and Niall English.

John Hopper proposes to contact the Irish Ministries.

Klaus Wallmann believes that Ireland would support exploration cruises and this would make a lot of sense.

John Hopper declares that the annual meeting in Ireland just took place and that MIGRATE should go there next year.

Georg Janicki says that he will address industry and MIGRATE WG leaders for the meeting in Oberhausen.

Klaus Wallmann explains that everybody interested could join the industry workshop in Oberhausen but probably there will only be the possibility to give reimbursement to WG leaders but not additional participants interested in the meeting.

Klaus Wallmann adds that it would be a good idea to ask e.g. STATOIL or FUGO to give a presentation as far as they are allowed to (e.g. published details about the Gulf of Mexico).

12:00

End of the meeting

TO DO List/Conclusions of the WG4 meeting

Hector Marín-Moreno:	Contact an Italian Ministry representative regarding cables and pipelines.
Klaus Wallmann:	Prepare one page of main goals of MIGRATE which will first be sent to Jan-Stephan Fritz and then be distributed to the national representatives directly.
Héctor Marín Moreno	Ask Tim Minshull to write a proposal for drilling in the Black Sea.
Klaus Wallmann:	Ask Tim Minshull about the correct spelling of “gas hydrate(s)” for the MIGRATE logo.
Klaus Wallmann and other members:	Present MIGRATE results (who we are) in 1 – 3 presentations à 15 min.: who we are, the idea we have with the EU H2020 – explore the continental margin.
Klaus Wallmann:	Ask Anja Reitz about funding industry in the EU framework H2020.
Klaus Wallmann:	Contact the French colleagues (or Christian Berndt) about potential contacts within TOTAL.
Georg Janicki:	Ask Goerge Deerberg to prepare a letter saying “Please give us the contacts regarding our MIGRATE projet to WED”.
Astrid Ulbrich:	Ask Deniz Karaca about how many industry representatives of which countries (EU and others) can be invited (maybe several times) with COST refund.
Georg Janicki/Görge Deerberg:	Contact industry representatives and invite them.
Klaus Wallmann:	Contact the authors of the report “International Association of Gas Production”