



Minutes of the GEMex Kick-off meeting in Morelia, Mexico

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Version 3.0

Katrin Kieling

GFZ

Work package 1

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Website: <http://www.gemex-h2020.eu>



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Executive summary

These minutes summarise the information exchanged during the GEMex Kick-off meeting which took place from 15.11.-17.11.2016 in Morelia, Mich. Mexico. It also includes all decisions taken and a list of participants.

→ Please find all important decisions in the section “Wrap-up” at the end of this document

1 15. 11. 2016

1.1 David Bruhn

- introduction of EERA – Joint Program on geothermal research → basic organisation which was approached to take up the idea of a joint Mexican-European project on geothermal sites in Mexico
- two research areas for EGS and SHGS
- short introduction of project structure with the 3 sub-programs:
- SP1 Resource Assessment
- SP2 Reservoir characterisation
- SP3 Concepts for reservoir development and utilisation
- additional work packages WP1 Management and WP2 Dissemination which interact with the three sub-programs

1.2 Aída Lopez-Hernandez

- presentation of Acoculco and Los Humeros area
- **indigenous people are living in the area of Acoculco → fieldwork has to wait until permission from the indigenous communities are obtained**
 - they have to be very careful to obtain the permissions
 - *comment: approx. 7 indigenous people living in a few (3?) communities in the Acoculco area → it is not yet clear to what extent this does really influence our project*
- **Mexican project continues one year after European project**
 - will do work that extends the scope of the joint project time
- **Mexican project includes WP9 “public engagement” which is incorporated in Task 7.4 in the European project**

1.3 Susanna Galloni

- introduces GEMex as a special form of projects funded by H2020: INCO – International Cooperation
- encourages all GEMex participants to take part in open LCE calls in order to extend the cooperation

1.4 Peter Petrov

- introduces Innovation and Networks Executive Agency (INEA), the project life cycle in INEA
- presentation of geothermal projects funded in H2020
- GEMex specific aspects:
 - **clarifies that the partners are responsible for their performance in the project and the reporting to the coordinator**
 - **explains amendments to the Grant Agreement, what may be accepted:**

- update of task and deliverables in the DoA
 - propose new, more innovative actions
 - addition of third parties, participants
 - reallocation of tasks
- we have to inform INEA about communication and dissemination activities with high impact beforehand**

1.5 WP1 Management

1.5.1 Aida Lopez-Hernandez

- for the CFE there should be one contact person: Aida Lopez-Hernandez
 - if information from the CFE is required, this contact has to be used
 - **Scientists from the European consortium should channel requests for data from CFE to the coordinator (GFZ), who will then contact Aida**
 - it is discussed, to have a person inside CFE who is responsible for providing the information we ask for and for this work is going to be paid partly by the Mexican project (no decision on this matter yet)

- we should compile a “Wish-List”: a list of data we would like to obtain from CFE → everyone should sent their wish list to Katrin Kieling, who will compile the list for the whole of EU-consortium and forward this to Aida

1.5.2 Egbert Jolie

- things to decide during the kick-off meeting:
 - EU- meeting 03/2017 in Europe (where?)
 - Joint EU-Mex-meeting in Europe (where?)
 - decision on EMDESK
 - see last day
- Project management plan has to be updated by WP leaders and should contain more clear plans down to the task level → **please provide**
 - **a Gantt Chart with schedule per task**
 - **define subtasks if necessary**
 - **define responsibilities (e.g., in a matrix structure as presented by Sæunn)**
 - **related deliverables**
 - **dependencies to other tasks (required input)**
- **every partner has to contribute to WP 1 by**
 - **providing continuous reporting (Deliverables, Milestones, Publications, Dissemination activities, Patents, Risks)**
 - **providing internal financial reports every six months**
 - **delivering the deliverables he/she is responsible for**
 - **providing input to the mandatory technical reporting**

1.6 WP2 Dissemination

1.6.1 Julio Vargas

- communication to CFE and communities
- communication to CONACYT; Mexicans have to deliver evidence for the EU-part
- CONACYT does not fund any management or organisation
- **Mexicans will get the funding probably next week**

1.6.2 Eugenio Trumpy

- overview over WP2
- URL is aquired: **www.gemex-h2020.eu**
- website will have a public and a private part
 - private part will include a calendar
 - **set up a fieldwork calendar in order to coordinate fieldwork activities**
- **open access database, also to visualize spatial data in a webGIS**
 - **could also contain data with restricted access for confidential data (but this has to be discussed, legal aspects, security...)**
- **To be done by each partner:**
 - **Advice for possible group of stakeholders to be reached:** to communicate to WP2 coordinators the references
 - **Advice for possible typos, errors and inaccuracies on the web site:** Periodically check web site contents and advice WP2 coordinators for updates
 - **Provide data once collected/retrieved/created/elaborated:** when necessary advice and provide to the WP2 coordinators new available data to be loaded in the Open Access Database
 - **Inform on project activities:** when necessary advice WP2 coordinators on activities achievements, tasks begin or conclusion, field trips etc. to be included in the e-news
 - **Inform on foreseen, submitted, published scientific or technical publication:** when necessary advice the WP2 coordinators, these information will be spread by different communication channels

2 16. 11. 2016

2.1 Official Inauguration of GEMex

2.1.1 Speeches by politicians

- Dr. Aida Lopez-Hernandez, Project coordinator of Mexican project part
- Dr. Federico Graeff, CONACYT
- Andrew Standley, Head of the European Delegation in Mexico
- Dr. Medardo Serna (Chairman of Michoacan University)
- Susanna Galloni, Policy Officer, European Commission, DG RTD
- Magaly Flores Armenta, CFE
- Óscar González Rivera, SENER

2.2 WP3 Regional Resource Models

2.2.1 L. Gutiérrez

- Presentation of WP3 structure according to the Grant Agreement
- Objective is to construct regional models to evaluate the geothermal resources in both areas (Acoculco and Los Humeros)
- Task 3.1 Integrated regional models and characterization of the geothermal and volcanic systems from :
 - Geological maps and data
 - Structural data
 - well sections and correlations
 - Geophysical and geochemical data
 - digital elevation models
- Task 3.2a: Integrated geothermal models & resource assessment
 - Integration of data on a) Superficial and deep temperatures (gradient wells?), b) Hot springs and wells, c) Available hydrological data
- Task 3.2b: Hydrogeological models for Los Humeros and Acoculco

2.2.2 Thomas Kretzschmar

- Task 3.3 oder 3.2b: Hydrogeological models
- Digital elevation model for water shed analysis (GIS)
- Identification of recharge and discharge areas.
- Surface water / ground water interaction.

2.2.3 Damien Bonté

- aim is to develop an understanding of the study area for the assessment of the geothermal

system

- first 6 months dedicated to data collection and inventory
- Task 3.3 only starts after 12 months
- **especially Task 3.1 expects inputs from all partners**
- presentation of all European partners contributing to WP3 and their planned contribution

2.2.4 Philippe Calcagno – Task 3.1

- Aim: 3D geological model – from integration of geological, geophysical and geodetic data
- proposes to have a referent for geology and a referent for geophysics for both site to work on a common interpretation
- first model should be available after 1 year with the data already available → afterwards continuous updating during the lifetime of the project
- **stresses the importance of people working together → everyone should contribute to the data collection and geologists and geophysicists have to work together on a joint interpretation**

2.2.5 Giovanni Ruggieri – Task 3.3

- Task 3.3 “Analogue Modelling”
- **need for data input from WP4 and WP5 preferably until month 12, but data until month 24 could still be incorporated**
- What is needed:
 - Field structural data on faults, as well as geological and geomorphological maps/DEMs showing the faults affecting the volcanic edifices.
 - Rheological stratification and crustal structure beneath the considered volcanic/geothermal areas.
 - Depth and shape of magma chambers
 - Rates and timing of tectonic deformation and magma-related processes
 - Preliminary conceptual models of geothermal systems

2.3 WP 4 Tectonic control on fluid flow

2.3.1 Domenico Liotta

- **close collaboration of WP3 and WP4**
- **should be coordinated: each group should inform WP-leader before field work, and submit a fieldwork report afterwards**
- **WP leader must know what each participant is doing to avoid duplication**
- **all conceptual models (geological/structural, geophysical, hydrological) should be integrated in the final 3D-model (Task 3.1, mostly)**

2.4 WP 5 Detection of deep structures

2.4.1 Sæunn Halldórsdóttir

- main Tasks are :
 - gathering of existing data
 - survey design and preparation of additional measurements
 - synthetic model calculations
 - 3D inversion and modelling
 - interpretation of geophysical models
 - integrated models **with input from other WPs**
- Tasks 5.3 and 5.4 require data from Tasks 5.1 and 5.2
- Presentation of European WP5-Team
- Presentation of Task 5.3 by Eva Schill and 5.2 by Philippe Jousset

2.4.2 Claudia Arango

- Presentation of WP5 and all tasks and subtasks
- Presentation of Mexican Team

2.5 WP 6 Reservoir characterisation and conceptual models

2.5.1 Paromita Deb & Alfonso Aragon

- overview on WP 6
- Task 6.1 Rock and fracture properties/ physics (Lab) (A. Pola / Rosa M. Prol and Juliane Kummerow)
 - Petrophysical property data base
 - Conclusion on material properties at depth
 - Data basis for the interpretation of geophysical field measurements
 - additional rock samples from Iceland
- Task 6.2 Reservoir Characterisation (Georgina Izquierdo , Luis Gonzalez and Christoph Clauser)
- Task 6.3 Model approaches for EGS (Abel Hernandez and Christoph Clauser)
- Task 6.4 Model approaches for SHGS (Alfonso Aragon and Christoph Clauser)
 - hydraulic fracturing of rock-samples under triaxial compression
 - tracer experiments

2.5.2 Georgina Izquierdo Montalvo Task 6.2

- Characterise Water rock interaction to understand processes that affect the fluid
- emphasized the strong relation to WP4 → need for exchange of results

2.5.3 Abel Hernandez Task 6.3

- Develop a reservoir model for the simulation of Acoculco reservoir

- depends on all other work packages
- subtasks:
 - define boundaries of Acoculco reservoir
 - decide on software/numerical approach
 - **develop a numerical model, which is used in WP7**

2.6 WP 7 Concepts for the development and utilization of EGS

2.6.1 Lies Peters

- WP applies concepts that have been developed in previous WPs
- E.g. Task 7.1 requires close collaboration for the development of a conceptual model

2.6.2 Ernst Huenges

- Task will benefit from lessons learned from ongoing other projects
- soft stimulation without harming the environment
- includes risk management and reduction methods, e.g. an Advanced Traffic Light System for risk monitoring

2.6.3 Guillermo Jaimes

- Mexican part: fracture stimulation design
 - evaluate candidate well
 - induced fracture stimulation
- **aim to perform indeed a stimulation in Acoculco: the tasks in WP 7 should include all preparatory steps for such a stimulation**

2.6.4 Jan Diederik van Wees

- optimised well design should incorporate methods to prevent induced seismicity and environmental hazard
 - 1) base line monitoring
 - 2) real time monitoring
- mapping of vulnerable areas
- Advanced Traffic Light System: estimate time to stop by forecasting the seismicity

2.6.5 Zayre Ganozaes

- Environmental studies
- social studies (including participative methodologies)
- economical studies
- sustainable development
- European part: stakeholder engagement strategy

2.7 WP 8 concepts for the development of Superhot resources

2.7.1 Ernst Huenges

- Task 8.1 Imaging: includes
 - assessment
 - exploration
 - THM- model of target zone
 - development plan
 - **static characterisation: requires information from WP 4,5,6 but also from the CFE**
 - dynamic characterisation
- Task 8.2 Material required for casing the well
 - builds on experiences from projects in Iceland
 - test and evaluate material, how they perform within SHGS (often more acidic)
 - often damage to the casing
- Task 8.3 Well design and completing: **mainly WP6 should provide input to the well design**
 - development
 - drilling design
 - casing and cement design
- Task 8.4 Exploitation design
 - How to really operate a SHGS?
- all together this should lead to a decision about the feasibility of SHGS

3 17. 11. 2016

3.1 Wrap up

- **Next European meeting will be hosted by TNO in Utrecht /Netherlands in March/April 2017 (date to be announced asap)**
- **Next Joint meeting will be hosted by ISOR in Akureyri/Iceland in the 1st week of October 2017**
 - this is joint with the IMAGE final conference
- **Please compile your wish-list for data ASAP**
- **Vote for use of EMDESK: 14 yes, 4 no**
 - EU consortium will use EMDESK for the technical reporting and administration of GEMex
 - **Need of semi-annual financial reporting was stressed, however, part of the partners have doubts whether this is useful and/or whether their accountancy would provide financial figures for such non-obliged reporting. Each consortium member should discuss this requirement with their financial officer and find solutions to provide these information. No definitive decision taken on financial reporting additionally to the obligations set by EC.**
 - comment: GFZ would like rough numbers to be able to follow the projects financial status. No details, simply approx personal cost, approx travel, approx other costs (equipment, laboritry, licenses...) → a draft sheet for this report will be uploaded to the VRE soon
- **GEMex logo** (all attendants were allowed to vote): 30 for first option, 17 for second option, 1 for third option
 - we will use 1st option as a basis for the official project logo
 - and finalise this version, option of colour modifications will be tested



3.2 Work tables

- **work in separate WP groups**
- please request minutes from the work package leaders

4 List of participants

4.1 Mexican institutions

4.1.1 GEMex scientists

Abel Felipe Hernández Ochoa	INEEL	afho@iie.org.mx
Alfonso Aragón Aguilar	INEEL	aaragon@iie.org.mx
Angel Figueroa Soto	UMSNH	angfsoto@gmail.com
Antonio Pola	ENES-UNAM	antoniopolavilla@gmail.com
Claudia Arango Galván	UNAM Geof.	claudiar@geofisica.unam.mx
Eduardo Gonzalez Partida	UNAM Geoci.	edgopa@gmail.com
Georgina Izquierdo Montalvo	INEEL	gim@iie.org.mx
Gerardo Aguirre	UNAM Geoci.	ger@geociencias.unam.mx
Gerardo Carrasco	UNAM Geoci.	direccion@dragon.geociencias.unam.mx
Giovanni Sosa-Ceballos	UNAM Geof.	gsosaceballos@gmail.com
Jose Luis Macias	UNAM Geof.	jlmv63@gmail.com
Jose Manuel Romo Jones	CICESE	jromo@cicese.mx
Julio Vargas	UMSNH	juvame1@gmail.com
Luis Carlos Gutiérrez-Negrín	GEOCONSUL	l.g.negrin@gmail.com
Luis Eduardo Gonzalez Ruiz	GEOMINCO	egonzalez@geominco.com
Luis Gallardo	CICESE	lgallard@cicese.mx
Marco Antonio Pérez	CICESE	mperez@cicese.mx
Marco Calo	UNAM Geof.	calo@geofisica.unam.mx
Thomas Kretzschmar	CICESE	tkretzsc@cicese.mx
Víctor Hugo Garduño-Monroy	UMSNH	vhgardunom@gmail.com
Zayre Ivonne Gonzalez Acevedo	CICESE	zgonzale@cicese.mx
Guillermo Jaimes Maldonado	JIenergía	guillermojaimes@jlennergia.mx
Aida López Hernández	UMSNH	aidalopher@gmail.com
Enrique Portugal	INEEL	portugal@iie.org.mx

4.1.2 Invited Guests

Heber Didier Diez León	CFE	heber.diez@cfe.gob.mx
Ysabel Cristina Carachura	CFE	ysabel.carchura@cfe.gob.mx
Cecilia Lorenzo Pulido	CFE	cecilia.lorenzo@cfe.gob.mx
Fernando Sandoval M.	CFE	fernando-sandoval@cfe.gob.mx
Alma Rosa Alcalá Virel	UMSNH	almarena19is@gmail.com
Orlando Espinoza	UMSNH	omespinozaoj@conacyt.mx
Isabel Isrrade	UMSNH	isaisrade@gmail.com
Edgar Mastache A.	UMSNH	geomastache@yahoo.com.mx
Christian Ordaz M.	CFE	christian.ordaz@cfe.gob.mx
Caludia V. Hernández		claudia.hernandez04@hotmail.com
Rosa María Barragán	UMSNH	rmbreyes@hotmail.com
Dulce Gutiérrez Carmona	UMSNH	dulce-guca@gmail.com
Adrián Jimenez Hero		adrianjhero@gmail.com
Miguel A. Ramirez		miguel.ramirez02.....
Ricardo Vázquez R.	UMSNH	rvazquezrunam@gmail.com

4.2 European institutions

EC	Peter Petrov	Petre.PETROV@ec.europa.eu
	Susanna Galloni	Susanna.galloni@ec.europa.eu
GFZ	David Bruhn	dbruhn@gfz-potsdam.de
	Egbert Jolie	jolie@gfz-potsdam.de
	Ernst Huenges	huenges@gfz-potsdam.de
	Philippe Jousset	pjousset@gfz-potsdam.de
	Katrin Kieling	katrin.kieling@gfz-potsdam.de
ISOR	Ingólfur Örn Þorbjörnsson	ingolfur.thorbjornsson@isor.is
	Gylfi Páll Hersir	gph@isor.is
	Sæunn Halldórsdóttir	Saeunn.Halldorsdottir@isor.is
	Olafur G. Flovenz	Olafur.G.Flovenz@isor.is
TNO	Holger Cremer	holger.cremer@tno.nl
	Jan Diederik van Wees	jan_diederik.vanwees@tno.nl
	Lies Peters	lies.peters@tno.nl
	Joana Esteves Martins	joana.estevesmartins@tno.nl
UNIBA	Domenico Liotta	domenico.liotta@uniba.it
	Andrea Brogi	andrea.brogi@uniba.it
UU	Damien Bonte	D.D.P.Bonte@uu.nl
RWTH	Paromita Deb	deb.paromita93@gmail.com
CNR	Eugenio Trumpy	e.trumpy@igg.cnr.it
	Giovanni Ruggieri	ruggieri@igg.cnr.it
TUDA	Kristian Bär	baer@geo.tu-darmstadt.de
	Ingo Sass	sass@geo.tu-darmstadt.de
BRGM	Philippe Calcagno	p.calcagno@brgm.fr
CRES	Dimitris Mendrinou	dmendrin@cres.gr
OGS	Flavio Poletto	fpoletto@ogs.trieste.it
CIPR	Walter Wheeler	Walter.Wheeler@uni.no
UROMA3	Federico Lucci	federico.lucci@uniroma3.it
ENEA	Massimo Angelone	massimo.angelone@enea.it
KIT	Eva Schill	eva.schill@kit.edu
NERC	Christopher Rochelle	caro@bgs.ac.uk
HBO	Erik Saenger	erik.saenger@hs-bochum.de
UNITO	Giuseppe Mandrone	giuseppe.mandrone@unito.it
	Alessandro Sciullo	alessandro.sciullo@unito.it
EGEC	Luca Angelino	l.angelino@egec.org
IGA	Horst Rueter	rueter@harbourdom.de



Coordination Office, GEMex project

Helmholtz-Zentrum Potsdam
Deutsches GeoForschungsZentrum

Telegrafenberg, 14473 Potsdam

Germany