



Encouraging Innovation and Creativity
by Exploring Human Resources Potential and Skills
to Gear-Up Geothermal Energy Development

Proceeding Book

PROGRAM STUDI
TEKNIK PANAS BUMI ITB

Editors:
Suryantini
Hendro Wibowo
Fanani Akbar



3RD

ITB
INTERNATIONAL
GEOTHERMAL
WORKSHOP

2014

MARCH, 3rd - 7th

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WELCOME REMARKS

The organizing committee has great pleasure in inviting you to Bandung to attend The 3rd ITB International Geothermal Workshop 2014. Following the success of the last two workshops have brought us to the continuation and extension of the event in this year and the following years.

This year event, despite presenting the continuation of participation of ITB Master Degree Program respective partners, i.e.: PT. Pertamina Geothermal Energy, Star Energy, Chevron, Supreme Energy, USAID, Kyushu University, GFZ – Postdam, National Geological Agency, various universities in Indonesia and others, will also presenting new partner in collaboration such as West Java Geothermal Centre of Excellence, University of Southern California USA, ITC faculty of Twente University Netherlands, Mindoro Emerging Power of the Philippines and many others. They will speak about the current innovation and creativity on the geothermal exploration, exploitation and development not only for the geothermal resources but also for the human resources that support the acceleration geothermal development.

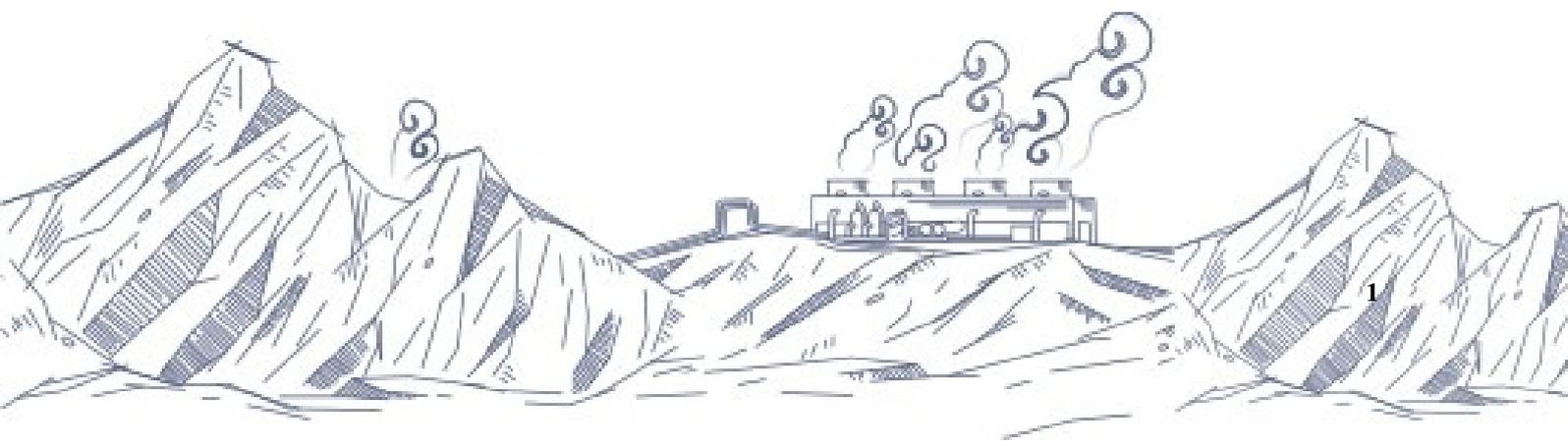
This year theme “*Encouraging Innovation and Creativity by Exploring Human Resources Potential and Skills to Gear-Up Geothermal Energy Development,*” will bring new information about current research, innovation and exploration results in some frontier area of studies, in particular for Indonesian Geothermal Communities. Such results include engineering research and exploration for geothermal low-medium enthalpy apart from advance techniques in developing high enthalpy geothermal system.

We invite you to join our informative and exciting program in this 3rd workshop which includes pre-workshop courses and trainings, plenary sessions, technical paper presentations, mid-workshop courses and geothermal field camp and field trip.

Suryantini



Chairman



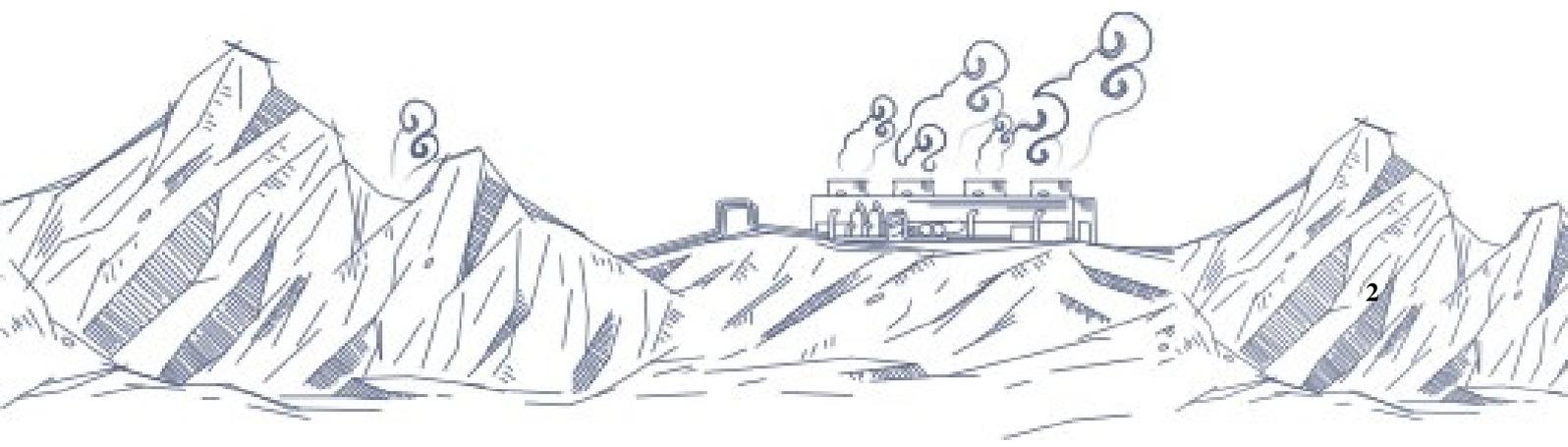
ABOUT ITB GEOTHERMAL WORKSHOP

The ITB Geothermal Workshop is held annually as the premier agenda of the ITB Master Degree Program to take part in the development of geothermal energy worldwide and Indonesia's Geothermal Development in particular. We expect that participants will benefit these opportunities from the programs provided during this event:

- Exchange of views, ideas, knowledge and experience on researches, knowledge, and the latest technologies of geothermal developments by bringing together scientist, engineers, academicians, experts and industrial stakeholders involved in geothermal studies and developments.
- Network and explore possible cooperation, partnerships, and business relationships with experts in the field of Geothermal Energy development.
- Enable prompt and open reporting of annual progress in accelerating geothermal development in Indonesia.

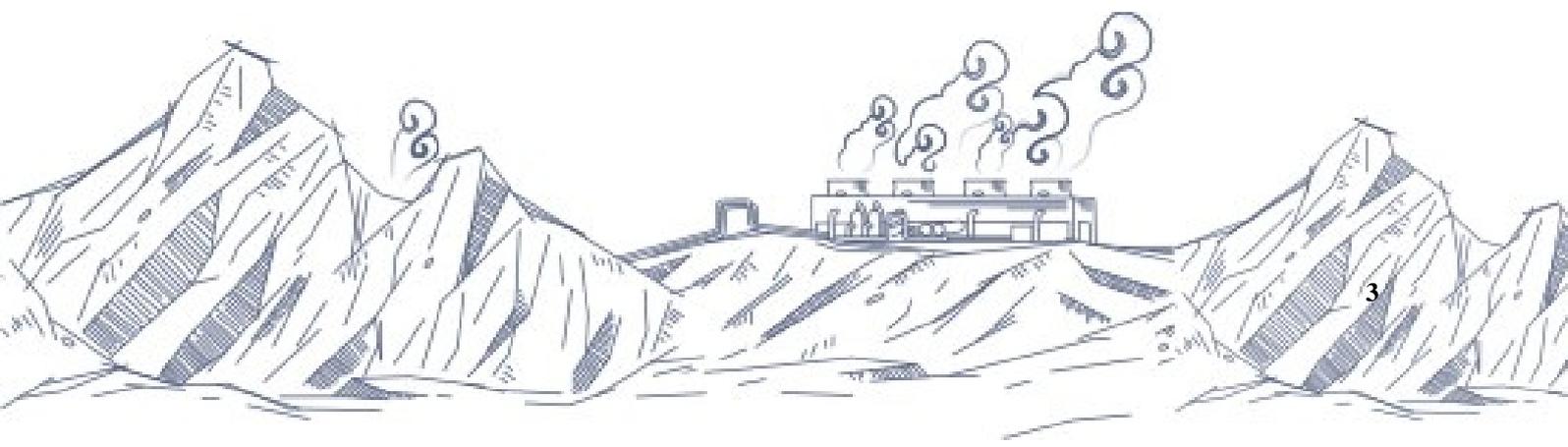
This year, ITB Master Degree Program will host the Geothermal Workshop from March 5th – 6th 2014 in Bandung, Indonesia. The conference will feature distinguished speakers, scientists, engineers, financiers and other key players in the geothermal and energy sector worldwide.

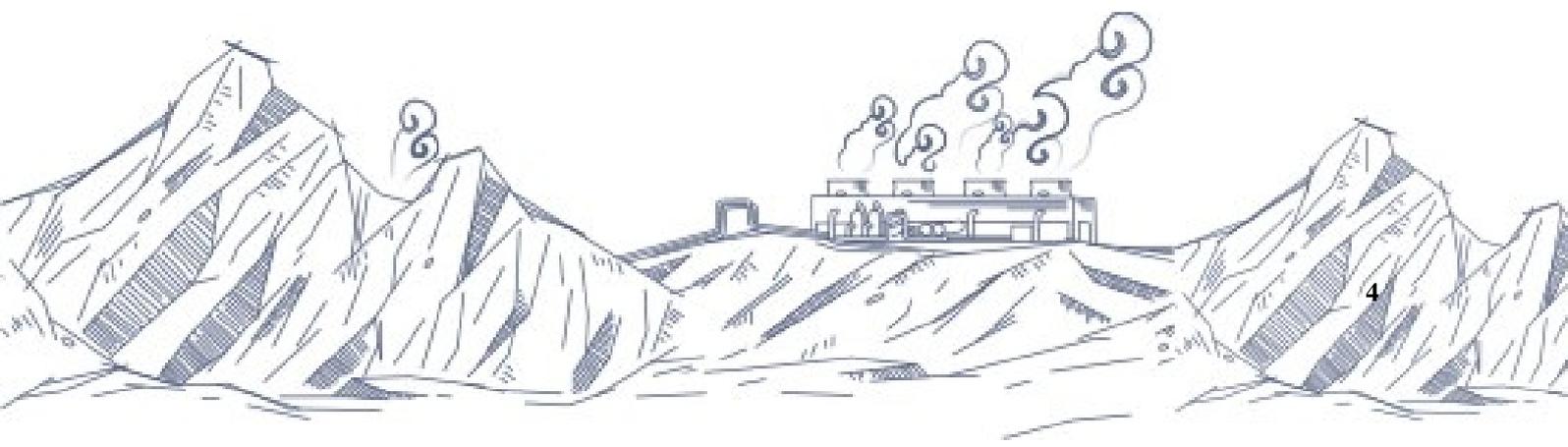
Beside the workshop, this year event will open its door to exhibitors to showcase their projects, equipment, researches and services. We also offer delegates to join in our pre-workshop courses from USC and ITB and post-workshop programs, which includes field trip to Wayang Windu Geothermal Field.



ORGANIZING AND TECHNICAL COMMITTEE

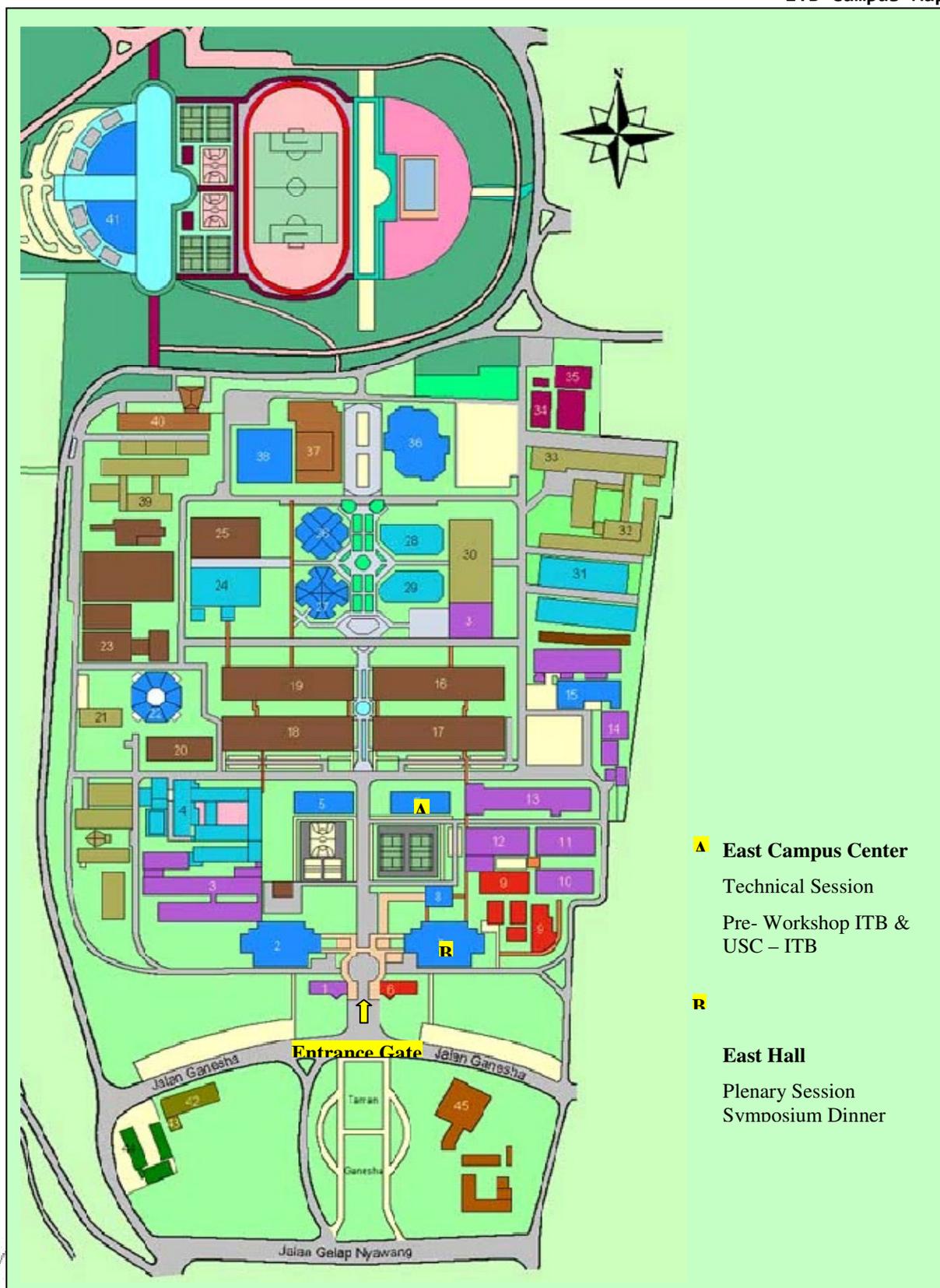
Steering Committee	: Nenny Miryani Saptadji, Niniek Rina Herdianita
Chairman	: Suryantini
Vice Chairman	: Zuher Syihab, Ichwan Elfajrie, Irna Nurfendiani Putri, Reyno Rivelino D. M.
Secretary General & Registration Team	: Sutopo, Nursanty Elisabeth, Ratna Amalia Pradipta, Mona Natalia, Rifa Chairunnisa
Treasure	: Arsegianto, Iis Sumarni, Netta Natasha
Sponsorship, Public Relation, and Promotion	: Prihadi S., Hendra Grandis, Windra Yusman, Astrid Nadya, Indradarma Adiwibowo, Mayestica De Jong, Manganju Luhut Tambunan, Firman Taufiq
Creative Team	: Budi Sulistijo, Dinul Akbari, Fuad
General Affair	: Ali Ashat, Nurwahyudi Yulianto, Setya Drana, Reza Rizki
Pre-Course and Workshop	: Deni Rachmat S., Fanani Akbar, Ryan Hidayat, Ferry Aries, Heru Berian Pratama
Field Trip	: Suryantini, Chikal Rakhmatan, Saut Daniel Manalu





WORKSHOP VENUE MAP

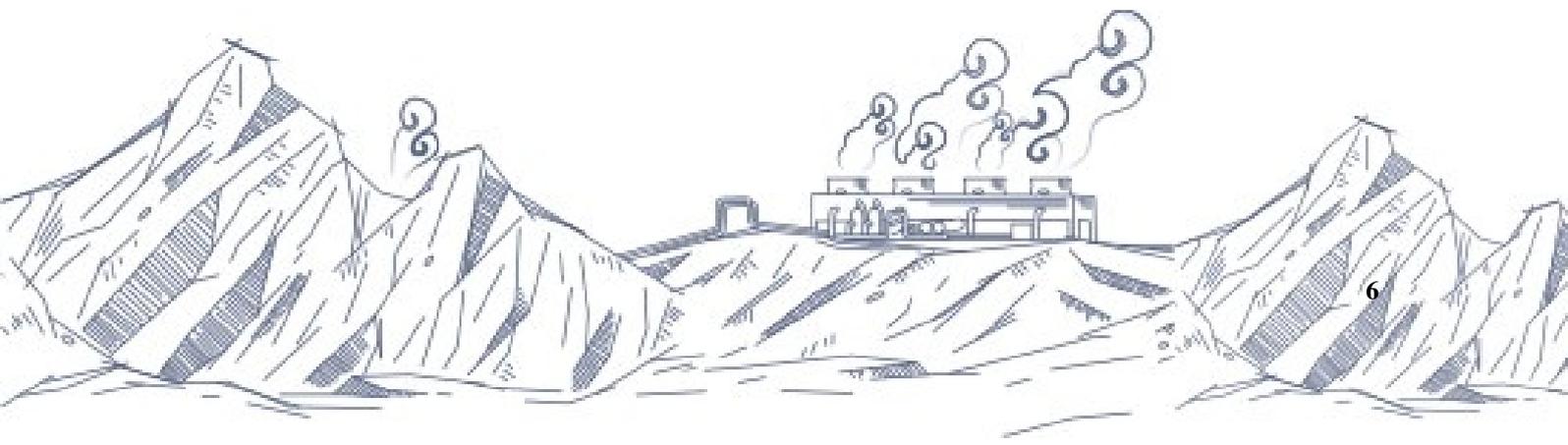
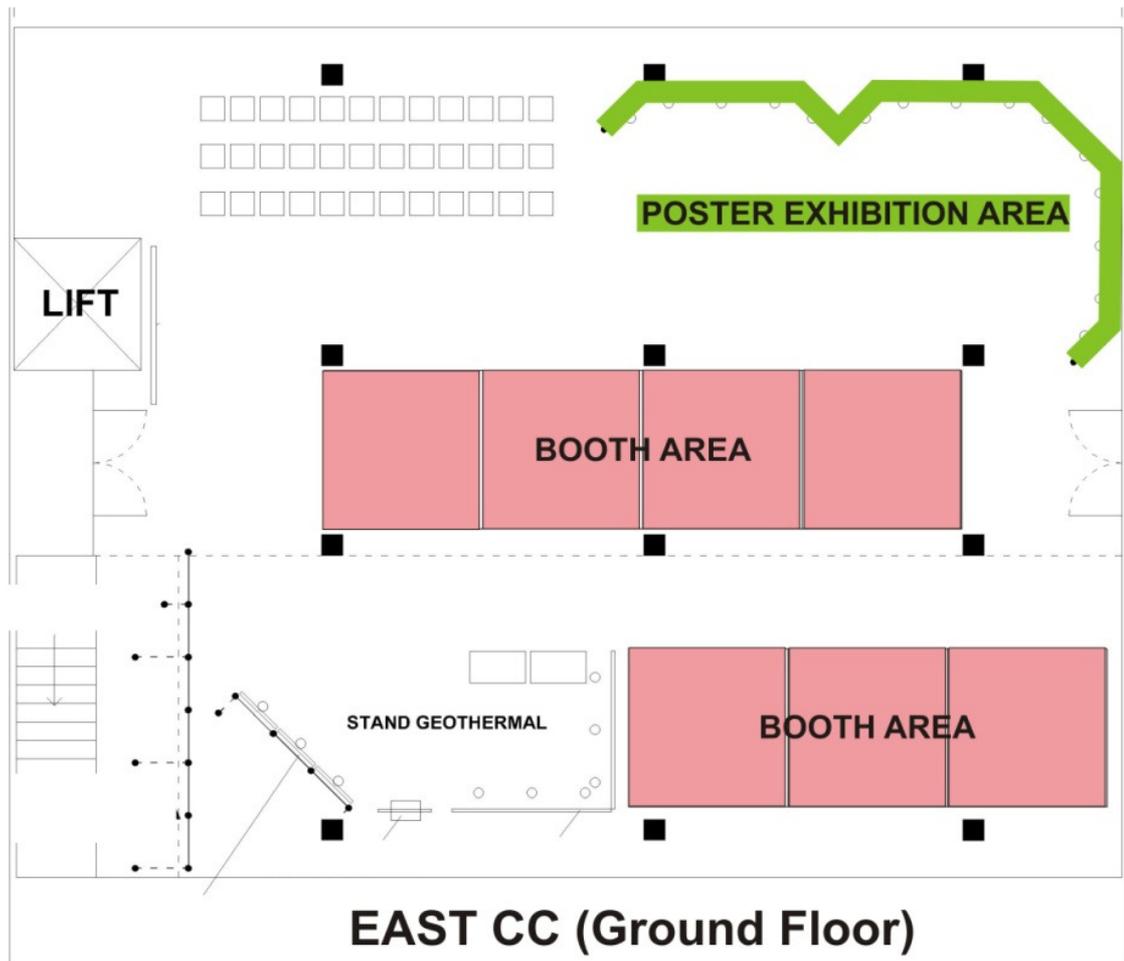
ITB Campus Map



A East Campus Center
Technical Session
Pre- Workshop ITB &
USC – ITB

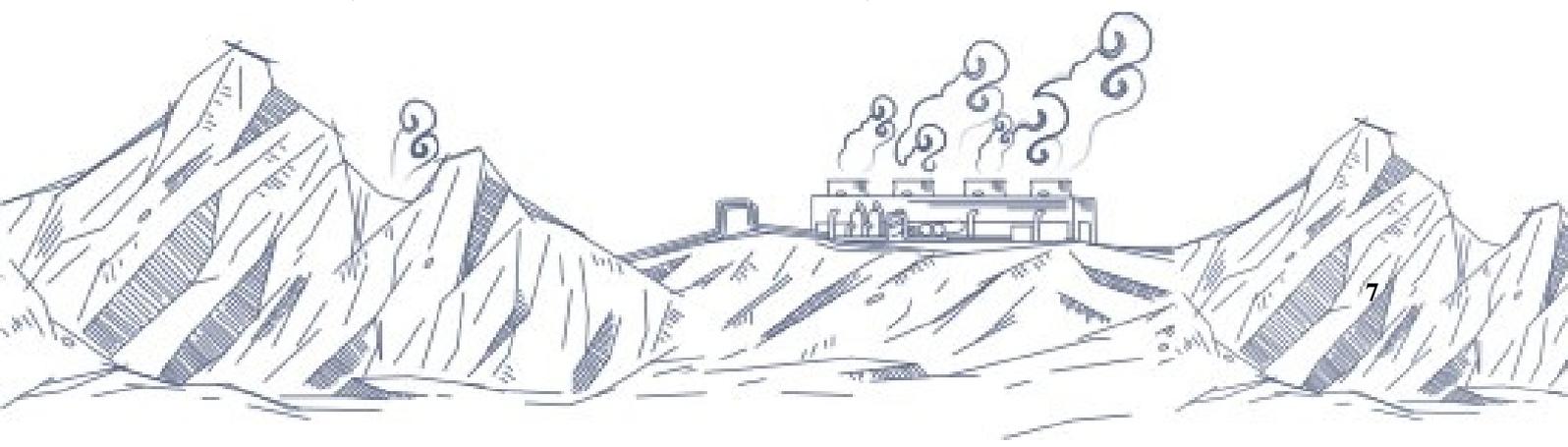
R
East Hall
Plenary Session
Symposium Dinner

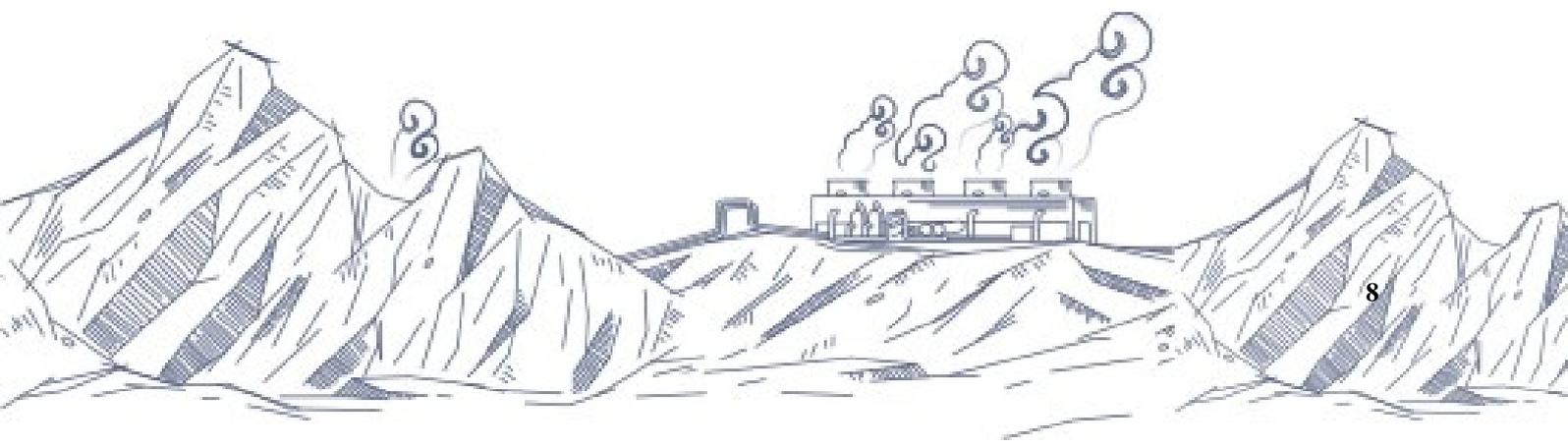




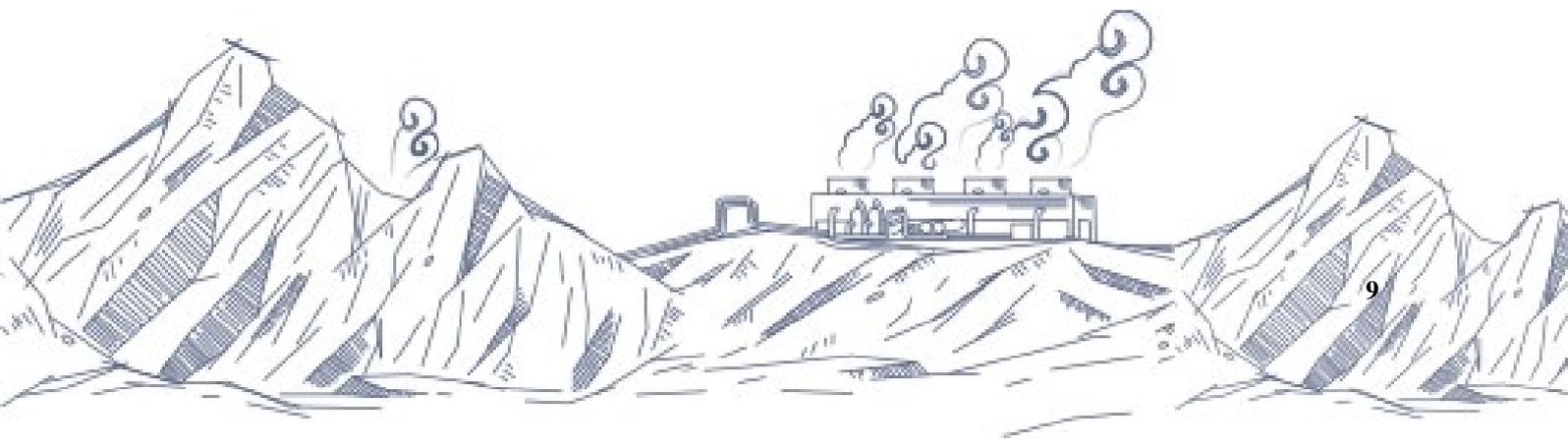
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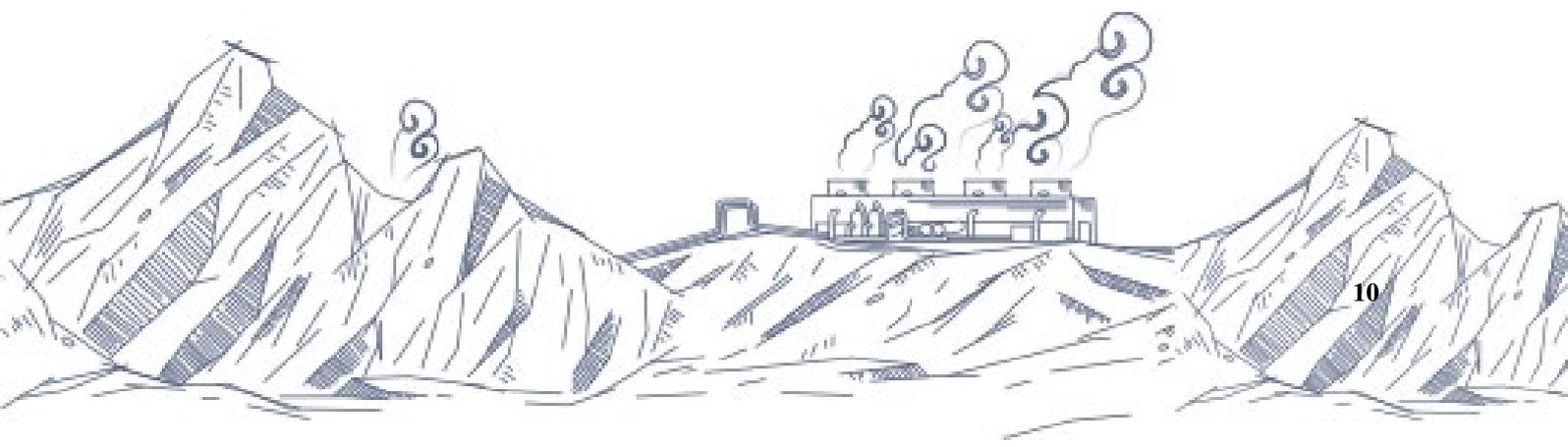
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PRE-WORKSHOP COURSES





Pre-Workshop Course (USC-ITB)

Monday, March 3rd 2014

Schedule

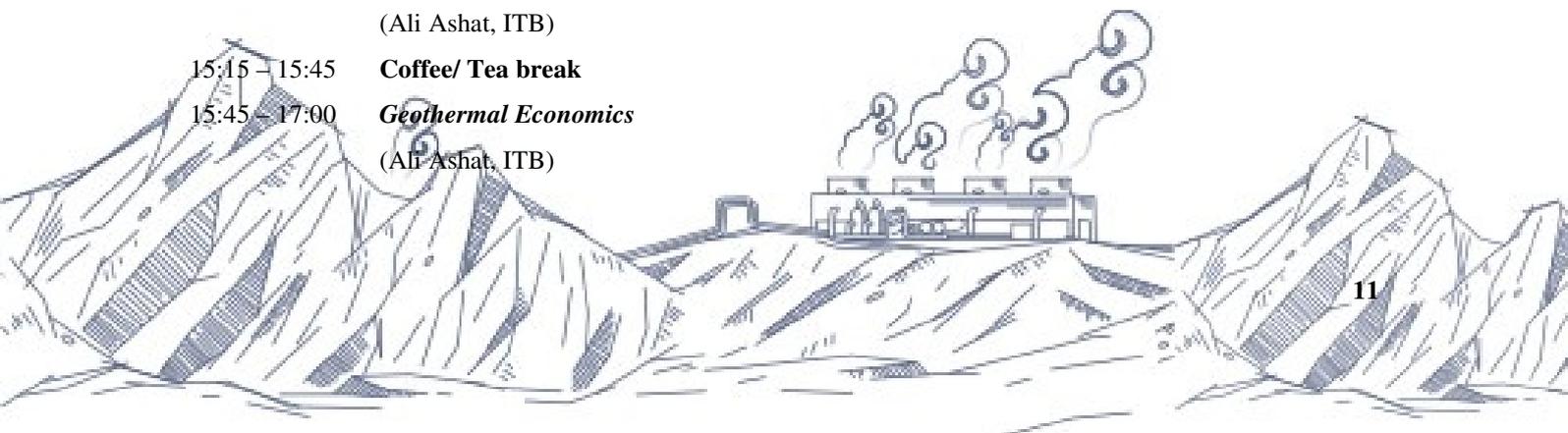
- 08:00 – 08:30 **Registration**
- 08:30 – 10:00 ***Introduction to MEQ Method***
(Rachmat Sule, ITB)
- 10:00 – 10:30 **Coffee / Tea Break**
- 10:30 – 12:00 **Tutorial**
(Andri Dian Nugraha, ITB)
- 12:00 – 13:30 **Lunch**
- 13:30 – 15:00 ***MEQ Case Study from Indonesia Geothermal Field***
(Andri D. Nugraha, ITB)
- 15:00 – 15:30 **Coffee/ Tea break**
- 15:30 – 17:00 ***MEQ Case Study from USA Geothermal Field***
(Danielle Sumy, USC)

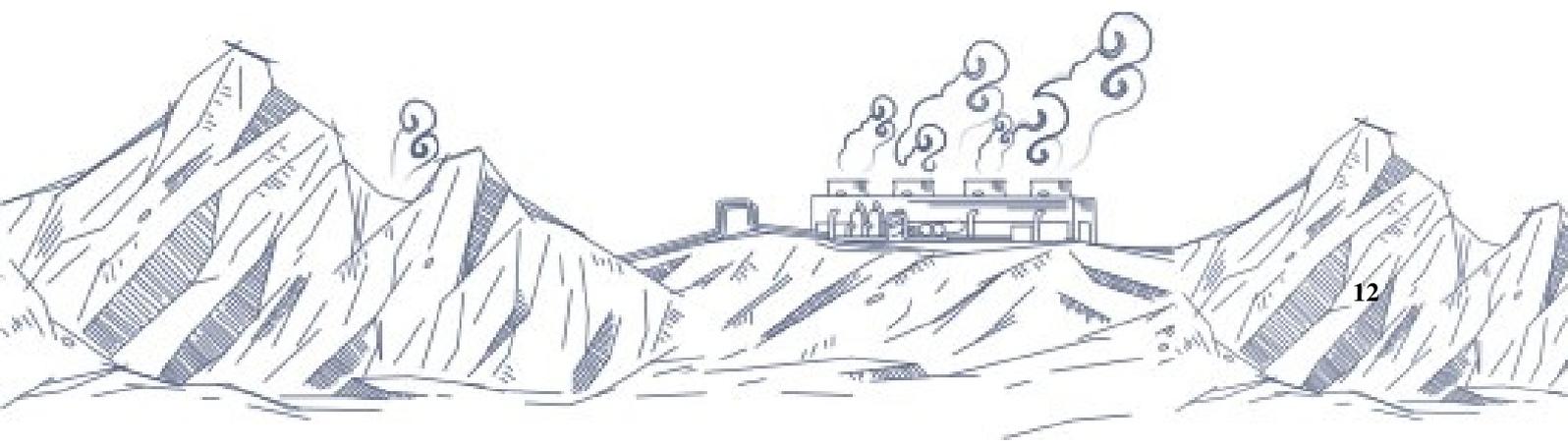
Pre-Workshop Course (ITB)

Tuesday, March 4th 2014

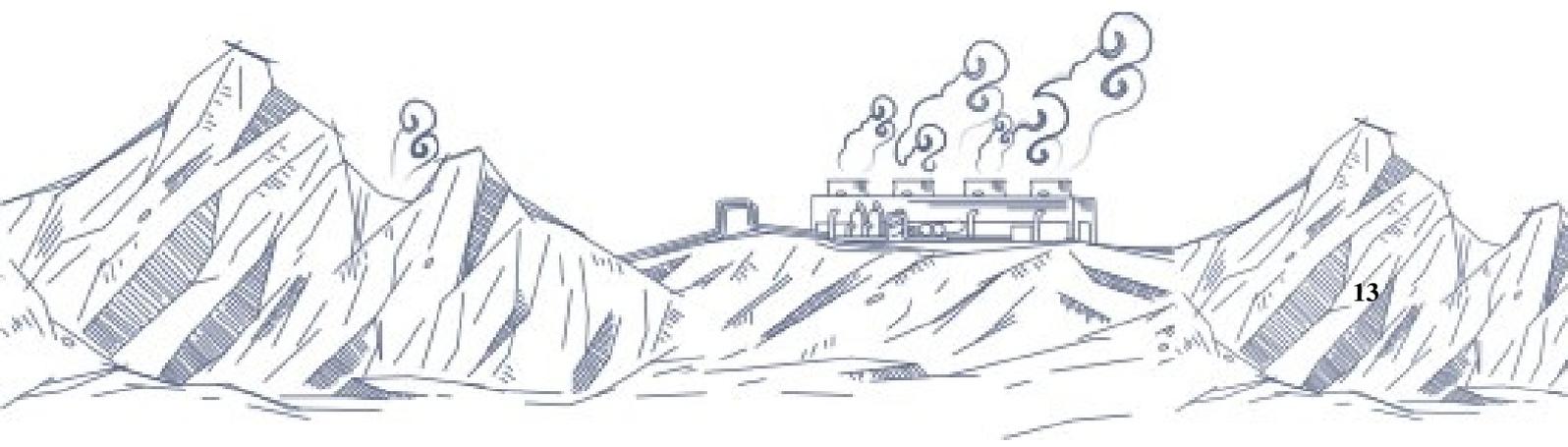
Schedule

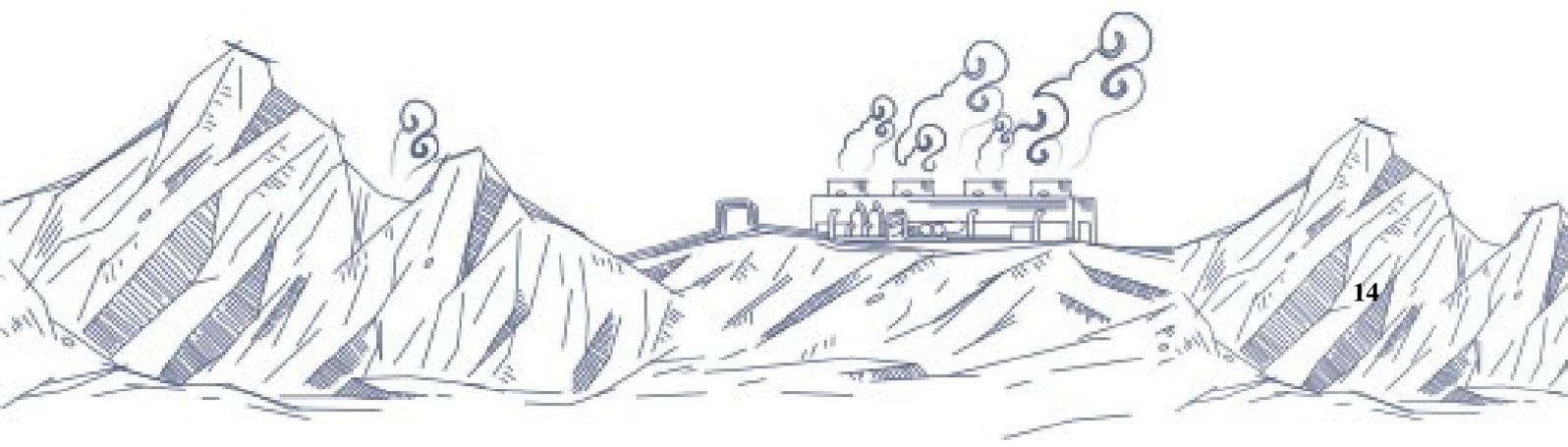
- 07:30 – 08:00 **Registration**
- 08:00 – 10:00 ***Geothermal System***
(Suryantini, ITB)
- 10:00 – 10:15 **Coffee / Tea break**
- 10:15 – 12:15 ***Geothermal Production and Utilization***
(Nenny Saptadji, ITB)
- 12:15 – 13:15 **Lunch**
- 13:15 – 15:15 ***Environmental Aspects***
(Ali Ashat, ITB)
- 15:15 – 15:45 **Coffee/ Tea break**
- 15:45 – 17:00 ***Geothermal Economics***
(Ali Ashat, ITB)





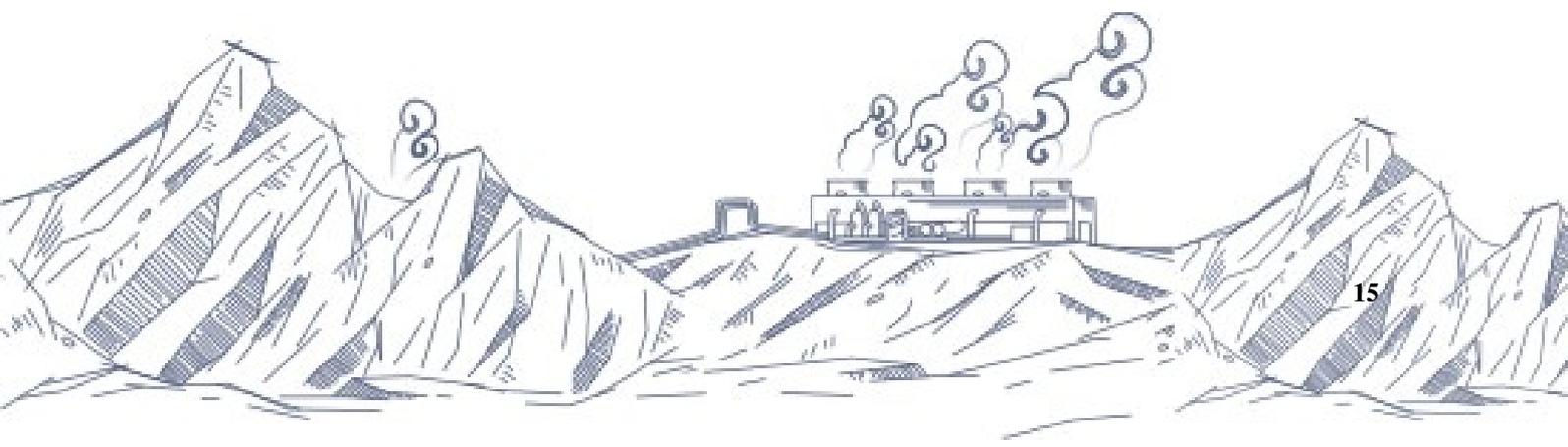
WORKSHOP





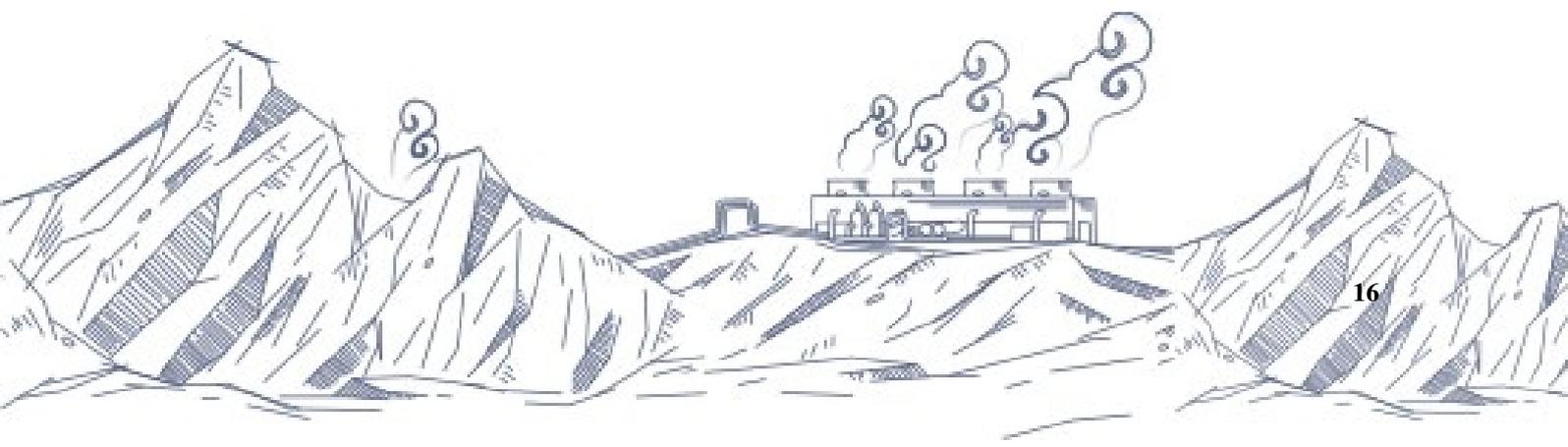
Schedule

- 08:00 – 09:00 **Registration / Welcome Drink**
- 09:00 – 09:30 **Opening**
- 09:30 – 09:40 **Angklung Performance** by KPA-ITB
- 09:40 – 10:00 **Keynote Speech**
(Abadi Poernomo, Head of Indonesia Geothermal Association – INAGA)
- 10:00 – 10:20 **Coffee/ Tea Break**
- 10:20 – 10:40 ***Business Strategy for Medium Enthalpy Geothermal System Development, Lesson Learned from Montelago Project, Mindoro, Philippines***
(Antonie de Wilde, Emerging Power-Philippines)
- 10:40 – 11:00 ***Human Resource Development for Supporting Geothermal Development in PT Pertamina Geothermal Energy***
(Rony Gunawan, President Director PT Pertamina Geothermal Energy)
- 11:00 – 11:20 ***Innovation for Human Resource Development***
(Sanusi Satar, Senior Representative Star Energy Geothermal Wayang Windu)
- 11:20 – 11:40 ***University Partnership Program for Encouraging Geothermal Research and Education***
(Retno Setianingsih, Energy Program Specialist USAID Indonesia)
- 11:40 – 12:00 ***West Java Geothermal Centre of Excellent***
(Tubagus Nugraha, Department of Energy and Mineral Resources of West Java Province/Dinas ESDM Propinsi Jawa Barat)
- 12:00 – 12:30 **Question and Answer Session**
- 12:30 – 13:30 **Lunch, Exhibition**
- 14:00 – 15:30 **1st Technical Session**
- 15:30 – 16:00 **Coffee / Tea Break**
- 16:00 – 18:00 **2nd Technical Session**
- 19:00 **Symposium Dinner**



Schedule

08:00 – 08:30	Registration / Welcome Drink
08:30 – 10:00	3rd Technical Session
10:00 – 10:30	Coffee / Tea Break
10:30 – 12:00	4th Technical Session
12:00 – 13:30	Lunch, Exhibition
13:30 – 13:50	2nd Plenary Session Opening
13:50 – 14:10	<i>Build Up Cooperative Education Program Global Human Resource Development in Earth Resources Engineering: School on The Move (ASEAN Japan)</i> (Prof. Ryuichi Itoi, Kyushu University)
14:10 – 14:30	<i>Education Program Partnership between USC and ITB</i> (Danielle Sumy, University of Southern California)
14:30 – 14:50	<i>GeoCAP The Netherlands Consortium</i> (Jan Diederik van Wees, Geothermal Capacity Building Program)
14:50 – 15:10	<i>German-Indonesian Cooperation on Sustainable Geothermal Energy Development</i> (Kemal Erbas, GFZ German Research Centre for Geosciences)
15:10 – 15:30	<i>Partnership Program at ITB</i> (Nenny Saptadji, Institut Teknologi Bandung)
15:30 – 16:00	Question and Answer Session
16:00 – 16:30	Closing



Power Point File Check-In

For you who have not yet sent us your power point file via email in advance, you will be asked to give your PowerPoint file on first day of workshop (March 5). Please visit the author check-in desk in Campus Center Timur (UG) on March 5.

Time Allowance

The time allowance for each presentation in Technical Session is 15 minutes followed with a 5 minutes of Questions and Answers Session, which means that the total time you will have is 20 minutes. The speakers will be announced when the time lapse.

Please follow the bell signal:

First bell: You will have 5 minutes to finish your presentation (10 minutes passed)

Second bell: Your time is up (15 minutes passed)

Note for the Speakers:

Please be present in the room where you will give presentation 15 minutes before your session starts

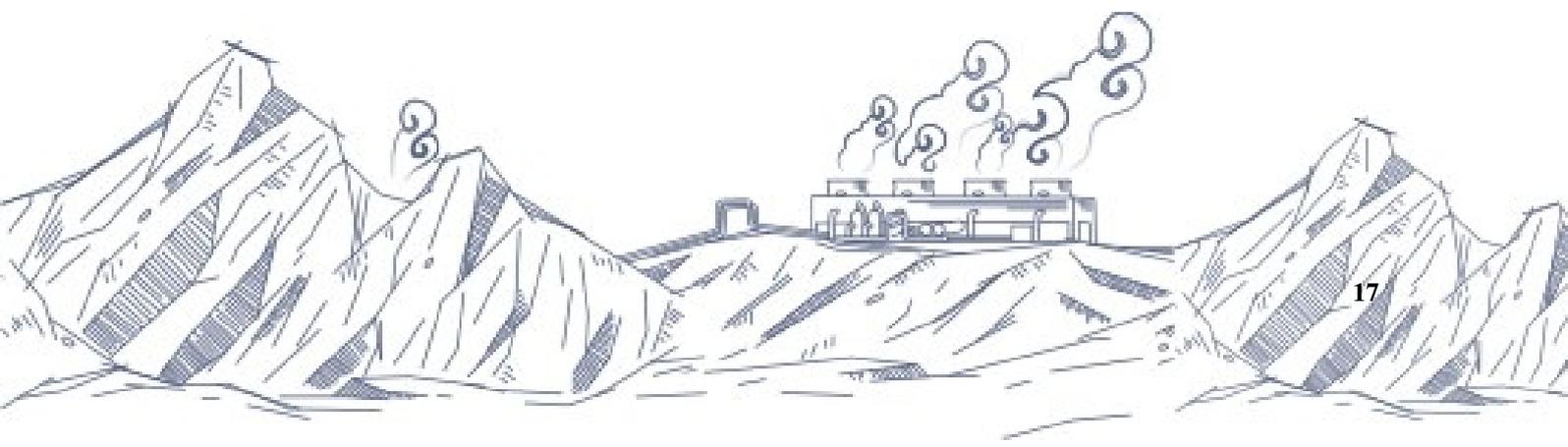
Paper Code

201 : 2 → Room 2 (The paper will be presented in room 2: Gallery of East Campus Center)

01 → Paper Number

— : Exploration

— : Engineering



Technical Session - Day 1

Wednesday, March 5th 2014

	Room 1 Room G 5 East CC 3rd Floor	Room 2 Room G 2 East CC 2nd Floor	Room 3 Auditorium East CC
	Chairperson: Sutopo	Chairperson: Hendra Grandis	Chairperson: Prihadi S.
14.00 – 14.20	101	207	314
14.20 – 14.40	102	208	315
14.40 – 15.00	103	209	316
15.00 – 15.30	Question and Answer Session		
15.30 – 16.00	Break		
	Chairperson: Bonar M.	Chairperson: Eka Aditya K.	Chairperson: Prihadi S.
16.00 – 16.20	104	210	317
16.20 – 16.40	105	211	318
16.40 – 17.00	106	212	319
17.30 – 18.00	Question and Answer Session	213	320
	Question and Answer Session		

1st Session

2nd Session

Note:

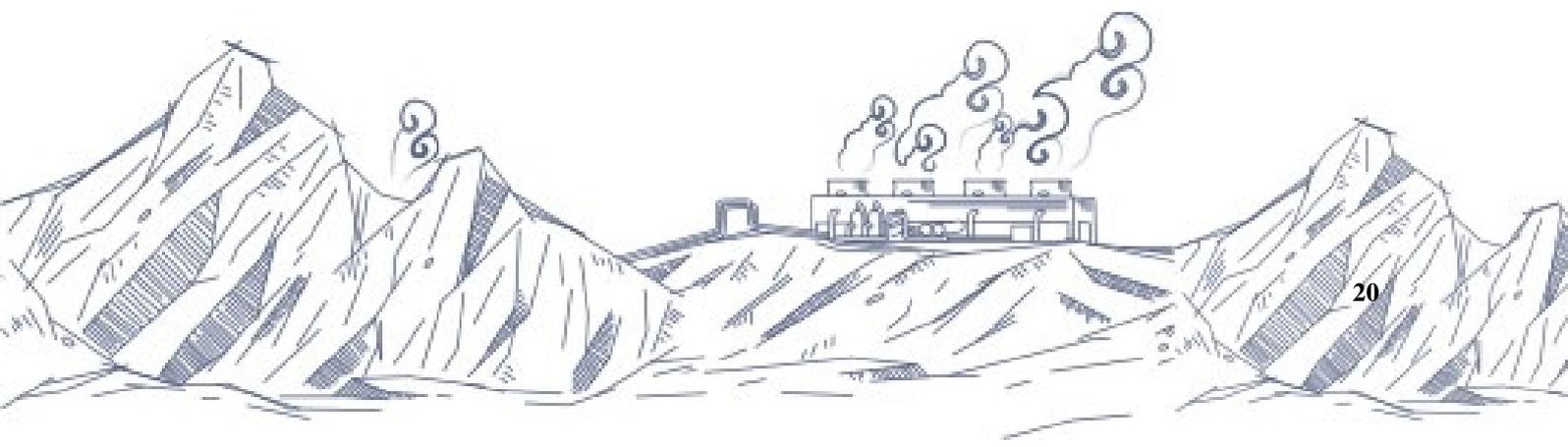
□ : Paper Code - See the "Author List" on page 17 for details

Technical Session - Day 2

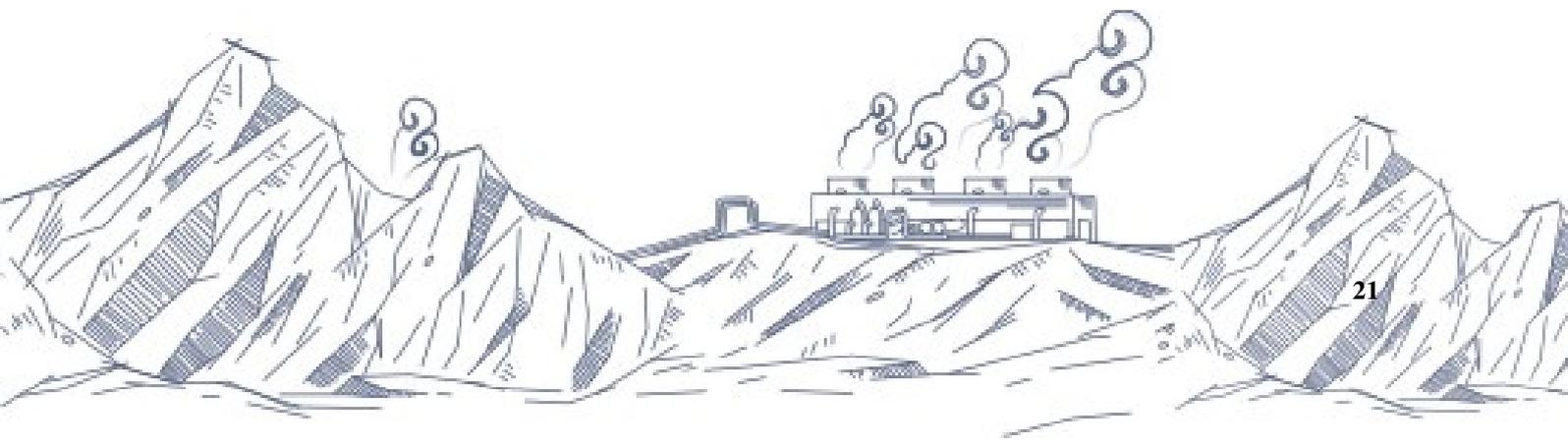
Thursday, March 6th 2014

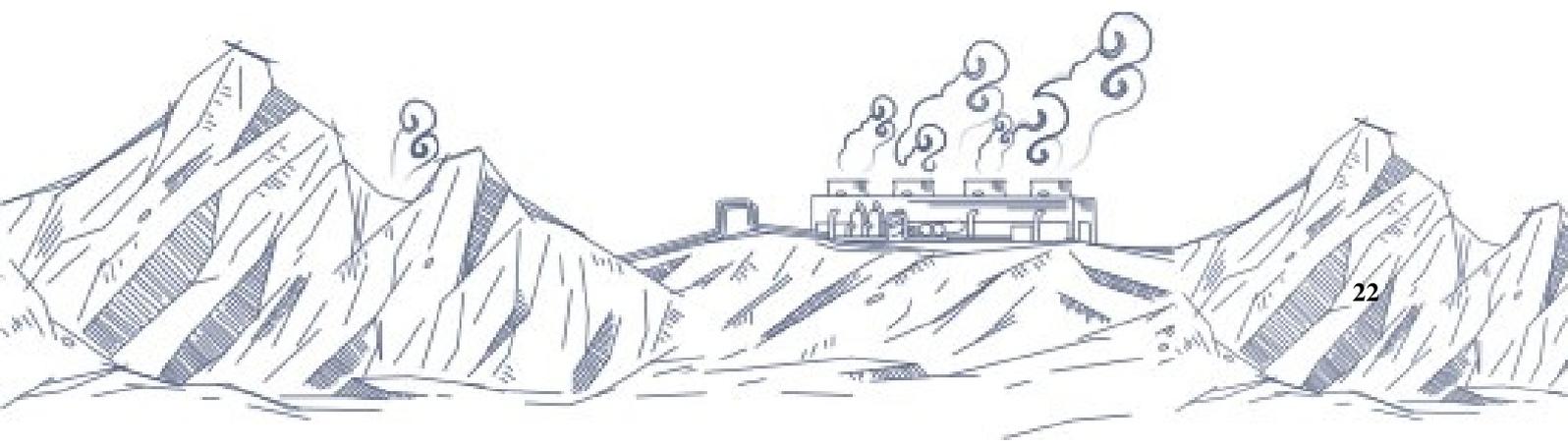
	Room 1 Room G 5 East CC 3rd Floor	Room 2 Room G 2 East CC 2nd Floor	Room 3 Auditorium East CC
	Chairperson: Sitti N. Asnin	Chairperson: Mia Uswatun	Chairperson: Dicky A. Zaky
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09.30 – 10.00	Question and Answer Session		
10.00 – 10.30	Break		
	Chairperson: Akbari	Chairperson: Bilqis A. A.	Chairperson: Mia Uswatun
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	4 th Session		





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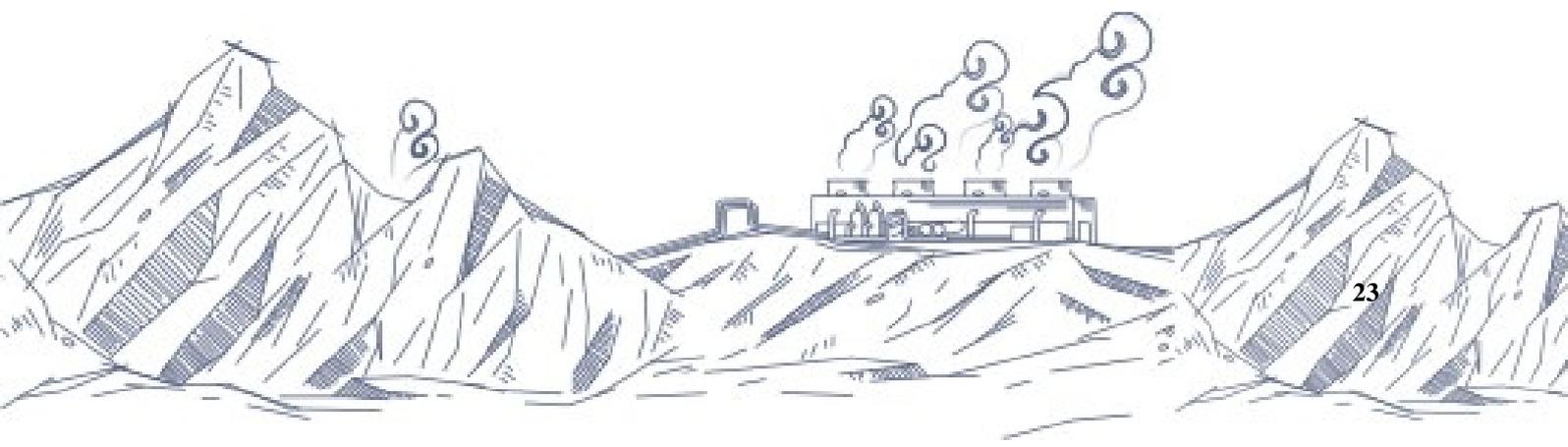
Field Trip
Friday, March 7th 2014

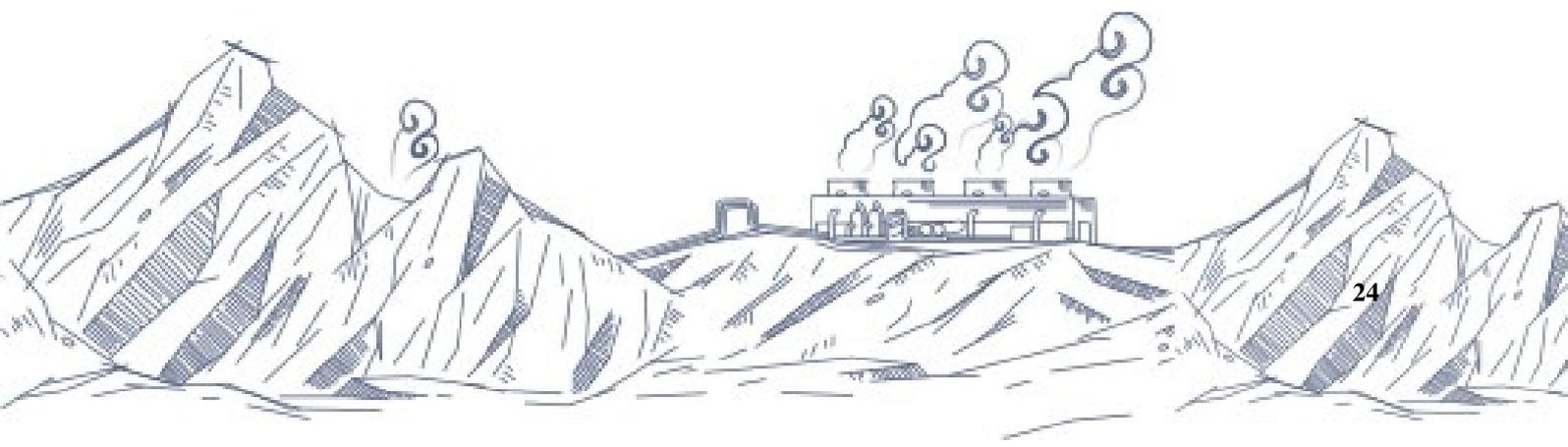
Schedule

This year's program provides the opportunity for the participants to visit **Wayang Windu Geothermal Field**. The Wayang Windu Geothermal field and power generation operations are being operated to world class standards by **Star Energy**. The trip will become even more exciting as participants will be given a chance to enjoy the refreshing and pleasant Malabar Tea Plantation in the end of the trip.

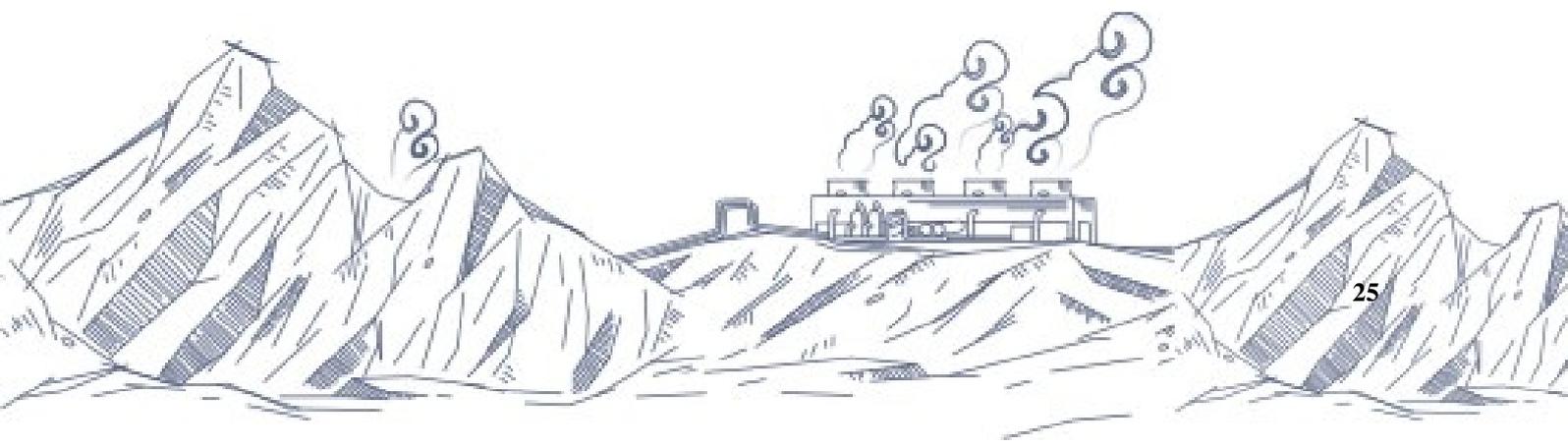
Instructors

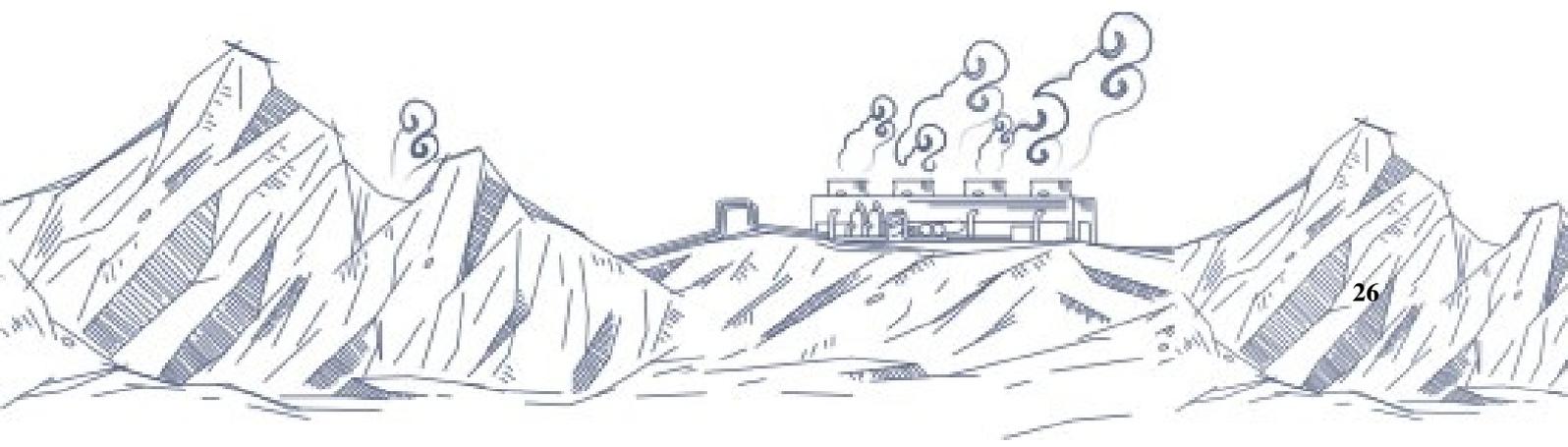
The Field Trip will be guided and instructed by the lectures of the ITB along with Star Energy representatives.





PAPER
(ORAL PRESENTATIONS)





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