



# PROGRAMME

## INTERNATIONAL WORKSHOP ON MINERAL SCALING IN GEOTHERMAL ENVIRONMENT

25-27 MAY 2011  
HOTEL INTERCONTINENTAL MANILA  
MAKATI, PHILIPPINES



# PROGRAMME

Day 1 - 25 May 2011

730 H	Registration
	Opening Ceremonies
	National Anthem
	Welcome Remarks <b>Antonio F. Yee</b>
830 - 915 H	Introduction to the Keynote Speaker <b>Manuel S. Ogena</b>
	Keynote Address: <b>Financial Issues of Scaling</b> <b>Richard B. Tantoco</b>

### Panel Discussion 1: Experiences and Control of Silica Scaling in Geothermal Environment

Facilitator:

Time	Presentation	Presenter
915 - 1000 H	Thermodynamics and Kinetics of Silica Deposition	<b>Kevin Brown</b>
1000 - 1015 H	S N A C K S	
1015 - 1100 H	Present Control of Silica Deposition	<b>Paul Hirtz</b>
1100 - 1200 H	<b>D I S C U S S I O N</b>	
1200 - 1300 H	L U N C H	

### Technical Session 1: Experiences in Silica Deposition in Wells and Pipelines

Facilitator:

Time	Presentation	Presenter
1300 - 1330 H	Silica Deposition Experiments: Past Works and Future Research Directions	<b>Ed Mroczek</b>
1330 - 1400 H	Silica Scaling in Production Wells and Injection Lines	<b>Larry Villaseñor</b>
1400 - 1445 H	<b>D I S C U S S I O N</b>	
1445 - 1500 H	S N A C K S	

## P R O G R A M M E

### Technical Session 2: Controlling Silica Deposition

*Facilitator:*

Time	Presentation	Presenter
1500 – 1530 H	Experiences in Silica Deposition and Control Using Chemical Inhibitor	<b>Almario Baltazar Jr.</b>
1530 – 1600 H	pH Modification Scale Control Technology	<b>Darrel Gallup</b>
1600 – 1630 H	Silica Scale Prevention Effects of Brine pH Modification at Hachobaru Power Station	<b>Yumi Kiyota</b>
1630– 1730 H	<b>D I S C U S S I O N</b>	
1830 – 2100 H	COCKTAILS Bahia Room, Hotel Intercontinental	

**Day 2 - 26 May 2011**

### Panel Discussion 2: Experiences and Control of Calcite and Anhydrite Scaling in Geothermal Environment

*Facilitator:*

Time	Presentation	Presenter
830 – 915 H	Accurate Evaluation of Thermodynamic Properties of Geothermal Gases from an Equation of State with Field Applications	<b>Joselito Ruaya</b>
915 – 1000 H	Calcite Scaling in Mindanao 1 Geothermal Production Field	<b>Benson Sambrano</b>
1000 – 1015 H	S N A C K S	
1015 – 1100 H	Precipitation Mechanism of Carbonate and Sulfate Scales in EGS System at Hijiori, Japan	<b>Norio Yanagisawa</b>
1100 – 1200 H	<b>D I S C U S S I O N</b>	
1200 – 1300 H	L U N C H	

## P R O G R A M M E

### Technical Session 3: Controlling Calcite and Anhydrite Deposition in Wells and Pipelines

*Facilitator:*

Time	Presentation	Presenter
1300 – 1330 H	Prevention and Dissolution of Anhydrite Deposit Using Chemical Agents for Production Wells at the Mori Geothermal Field, Hokkaido, Japan	<b>Daisuke Fukuda</b>
1330 – 1400 H	Calcite Inhibition System: Lihir Experience	<b>Adrian Daimol</b>
1400 – 1445 H	<b>D I S C U S S I O N</b>	
1445– 1500 H	S N A C K S	

### Technical Session 4: Future Trends in Mineral Blockage Control

*Facilitator:*

Time	Presentation	Presenter
1500 – 1530 H	Recent Developments in Geothermal Scale Control	<b>Mark Stapleton</b>
1530 – 1600 H	Development of a "Green" Hydrothermally Stable Scale Inhibitor for Geothermal Wells and Pipelines	<b>Leon Lee</b>
1600 – 1630 H	Antimony and Arsenic Sulfide Scaling in Binary Plants	<b>Kevin Brown</b>
1630 – 1730 H	<b>D I S C U S S I O N</b>	
1730 – 1830 H	IGA-WPRB 6 <sup>th</sup> Annual General Meeting	<b>Herman Ibrahim</b>
1900 – 2300 H	COCKTAILS Ballroom 2/3, New World Hotel	

## Day 3 – 27 May 2011

### Field Trip

Facilitator: **Chevron**

Time	Activities
800 – 1000 H	Trip to Makiling - Banahaw
1000 – 1200 H	Tour
1200 – 1300 H	Lunch
1300 – 1500 H	Tour
1500 – 1700 H	Tagaytay Tour and Return to Manila

### FIELD TRIP

A Field trip on 27 May 2011 to Makiling-Banahaw Geothermal Field of CGPHI would let the participants view one of Chevron's well-managed geothermal field. The trip will become more exciting as participants will take a glimpse of the world's famous Taal Volcano in Batangas Province. Cost of travel, inclusive of pack meals and AM/PM snacks, is P1,500.00/pax.

#### Tour Condition

Tour and itinerary are subject to change. Please contact the Organizing Committee for further details.

#### Inclusions:

- Tour will depart with a minimum of 5 persons
- Tour and transfer itinerary with air-conditioned vehicle
- English speaking guide
- Entrance fee
- Lunch and AM/PM snacks

#### Exclusions:

- Tips, gratuities and other personal expenses



The Mak-Ban (Makiling-Banahaw) or Bulalo geothermal field is located approximately 70km southeast of Makati, in the vicinity of Mt. Makiling. The field is located in a populated area, with communities located close to the surface facilities, and this presents various challenges in operating the field, particularly from a safety point of view.

The area was first explored in 1973 and Bulalo-1, the discovery well, was drilled in 1975; this well continues to be an active producer.

Commercial operation began in 1979, with the start-up of the first power plant (2 x 55MW) and the installed capacity today is 458.53MW, including 15.73MW of binary plants. The field is one the most prolific in the world as the productive area of only 7 km<sup>2</sup> still supports over 300MW of generating capacity after 32 years of commercial operation.

A total of 113 wells have been drilled to date, with 68 presently being used for production and 16 for injection.



The production and injection facilities at Mak-Ban are operated by Chevron Geothermal Philippines Holdings, Inc. (CGPHI) while the power plants are owned and operated by Aboitiz Power Renewables Inc. (APRI).



Taal Volcano and Lake is located about 70-km south of Manila and is wholly located in the province of Batangas. The northern half of Volcano Island falls under the jurisdiction of the lake shore town of Talisay, and the southern half to San Nicolas.

Taal Volcano, in the Philippines, has been called the smallest active volcano in the world.



The volcano is located on an island inside a lake called Taal Lake. What makes Taal Volcano more unique is the fact that the volcano itself has a lake of its own inside its crater which is called the "Crater Lake."

## REGISTRATION FEES

A single rate registration fee of **US\$300** will be charged to the participants. The low registration fee was made possible thru the kind assistance of IGA-WPRB and sponsors. Fill-out the registration form that is attached to this announcement and send to the in-charge below. Participants and sponsors are urged to register on-line and send your payment to:

**METROBANK**  
Savings Account No. 492-3-49201033-3  
Account Name: NGAP

Please send details of deposit to:

Sylvia G. Ramos  
[ramos.sg@energy.com.ph](mailto:ramos.sg@energy.com.ph)

On-site registration will begin at the venue in the morning of 25 May 2011, but it is hoped that most registration will be done beforehand using the website Registration Form. Payment may also be done during the first day of the Workshop.

## FELLOWSHIPS

The Organizers will offer Fellowships to interested participants from developing countries. The number of Fellowships that can be granted will be largely dependent on the amount of money that can be raised for this purpose. Please note that people with partial support from other sources will have a higher preference for IWMSG2011.

The Fellowship will pay for:

- Registration at the Workshop
- Hotel Accommodation
- A daily allowance to cover meals during travel
- Field Tour

The Organizers reserve the right to change the above entitlements for individual applicants. The decisions of the Organizing Committee will be final and no correspondence will be entered into regarding their decisions.

Please use the on-line Application Form of the IGA for the Fellowship Grant.

## ACCOMMODATION

Two Hotels in Makati, **Intercontinental Manila and New World Hotel**, have been selected as Official Hotels for the International Workshop on Mineral Scaling in Manila Philippines. The Organizing Committee has secured accommodations of participants for a special group rates. Both Hotels have 5 star ratings and offers room rate from **PHP6500 – PHP7400 Nett/day**. The New World Hotel is just 7-10 minute walk to the workshop venue.

## EXHIBITION

A specific area near the Function room is allotted for the suppliers and sponsors to exhibit their products and accommodate prospective clients. Booths are free of charge for the Exhibitors and will be prepared by the Organizing Committee. The exhibits will be available from 25-26 May 2011.

For Hotel Accommodation, Exhibition and Field Trip inquiries and details, please contact:

The Organizing Committee c/o

Almario D. Baltazar Jr.  
[baltazar.ad@energy.com.ph](mailto:baltazar.ad@energy.com.ph)

## ORGANIZING COMMITTEE

### Chairman

**Manuel S. Ogena**  
Energy Development Corporation

### Co Chairman

**Colin Harvey**  
GNS Science

### Members

**Noel D. Salonga**  
Energy Development Corporation

**Lauro F. Bayrante**  
National Geothermal Association of the  
Philippines  
Energy Development Corporation

**Almario D. Baltazar Jr.**  
Energy Development Corporation

**Anthony Menzies**  
Chevron Geothermal Philippines  
Holdings, Inc.

### Sub-Committees

**Technical**  
Lauro F. Bayrante  
NGAP/EDC

**Venue/Exhibit**  
Francis Edward B. Bayon  
EDC

**Finance**  
Sylvia Ramos  
NGAP/EDC

**Field Trips**  
Vilma Capuno  
CGPHI

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IN GEOTHERMAL ENVIRONMENT 2011

*Sponsored by:*

