



WGC2010

Daily News



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WGC2010

Geothermal, a Solution for Global Warming



DEVELOPING geothermal energy can be the best solution to address global warming issues. The efforts to speed up the development of geothermal energy have to be carried out immediately to reduce the world's dependence on fossil fuel that harms the environment.

Those were highlights of the speech by the Indonesian President Susilo Bambang Yudhoyono when officially opened the World Geothermal Congress 2010 on Monday at the Bali International Convention Center in Nusa Dua, Bali.

Also attending the opening ceremony were Iceland President Olafur Ragnar Grimsson, the Indonesian Coordinating Minister for Economy, Hatta Radjasa, and the Indonesian Research and Technology Minister, Suharna Supranata.

"We are already beginning to feel the impacts of the reality of climate change," President Yudhoyono said.

"The level of carbon emissions into the atmosphere since the start of the industrial revolution in the 19th century has risen to dangerous levels. All of us know, of course, that to a very large extent, this is due to the increasingly intensive burning of fossil-based fuels to support human economic activity, and reckless consumption," he said.

He emphasized that it is urgent to reduce dependence on fossil fuel and replace it with renewable energy.

"We should now make a sustained effort to tap sources of energy, that do not further add



Indonesian President Susilo Bambang Yudhoyono hits the gong, marking the opening of WGC2010

to the problem of carbon emissions. To many countries, including Indonesia, a large part of the solution to that problem is, the successful tapping of vast resources of geothermal energy," Yudhoyono said.

"What is at stake in this congress and in your work is, a world that is changed for the better through the use of a cleaner, safer and more environment-friendly source of energy," the Indonesian president said in front of 2,500 congress participants, comprising academics, experts, policy makers and geothermal companies.

Aware of the importance to develop renewable and environmentally-friendly energy, Indonesia will spur the development of

geothermal projects to generate electricity.

Indonesia is currently only using 1,100 MW, some 4.2% of geothermal reserves in the country, which constitutes about 40% of the world's geothermal potential. "This is going to change. It is my intention that Indonesia will become the largest user of Geothermal energy," Yudhoyono added.

Indonesia already have in place a set of long term policies for the development of geothermal energy, as embodied in the Geothermal Development Roadmap of 2004-2025. Indonesia envisions that by 2025, about five percent of our national energy needs, will be met through the use of geothermal energy.

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Olafur Ragnar Grimsson
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WGC2010 : Geothermal, a Solution for Global Warming

Indonesia have taken several important steps toward that goal, including the four projects covered by the Steam Purchase Agreement between PT PLN and PT Pertamina Geothermal Energy, the establishment of financing arrangements with the World Bank for the tapping of geothermal energy, and the delegation of authority over significant geothermal energy reserves, to the provincial governments of Central Java, South Sumatera and West Lampung.

These activities, involving a total investment of US\$ 8.6 billion, will eventually produce some 2,885 MW of power and will help close the 4,500 MW energy gap that Indonesia is now contending with, as a result of its rapid economic development.

Indonesia will also invest in a network of geothermal centre of excellence, to develop the know-how and expertise required to accelerate the exploitation of this resource. "If we find the ways and means of tapping these geothermal energy resources and make full use of them, there would be substantially less carbon emissions, in the atmosphere of our planet. That would significantly help to mitigate the impacts of climate change," Yudhoyono said.

President of International Geothermal Association (IGA), Ladislaus Rybach, appreciated Indonesia's success in developing geothermal. The expansion of geothermal use in the country has grown up to 5% per year, the highest growth rate among countries that developing the energy.

Indonesia ranks third in the utilization of geothermal as a source of energy, after the United States and the Philippines.

"Indonesia is the first in the growth rate of producing geothermal energy," Rybach said.

Iceland President Olafur Ragnar Grimsson highlighted that WGC2010 should be a defining moment to accelerate geothermal use as an

alternative energy.

"We now enjoy an opportunity to highlight the importance of geothermal production, innovation, technological breakthroughs of geothermal sector that countries have brought to the forefront," he said.

"Geothermal can be harnessed to combat climate change and provide clean energy and thus enhance the prosperity of people in the whole world."

Grimsson said that Iceland has enjoyed great advantages from the utilization of geothermal.

Taking the theme "Geothermal: The Energy to Change the World", WGC2010 is supported by many governments with high-level representatives attending from China, Germany, Iceland, Indonesia, Italy, Japan, Kenya, Mexico, New Zealand, The Philippines, Uganda and USA, as well as from international institutions and financial organizations such as The World Bank, United Nation Environment Program and the European Union.

This fourth WGC involves representatives from 85 countries worldwide. The first congress was held in 1995 in Italy, followed by the second in Japan, and the third in Turkey. 🌱



The Signing of Geothermal Projects in Indonesia

IN conjunction with WGC2010, a number geothermal projects were signed during the Opening Ceremony . Among others were Power Purchase Agreements of Sarulla power plant by MedcoEnergi, PT PLN and Pertamina Geothermal Energy (PGE); and confirmation agreement with Sarulla consortium for geothermal energy. There has also been the MoU signing of some projects of Gunung Ungaran power plant project owned by PT Golden Spike Indonesia, Gunung Rajabasa power plant project owned by PT Supreme Energy.

PT Medco Energi Internasional Tbk ("MedcoEnergi/Company") through its indirect subsidiary, PT Medco GeoPower Sarulla ("MGS") , which is operated under its wholly owned subsidiary PT Medco Power Indonesia ("MPI"), with its consortium member Itochu, Kyushu, Ormat, and PT. PLN Persero ("PLN") have signed a Power Purchase Agreement ("PPA") of Sarulla 330MW Geothermal Power Plant, North Sumatra with electricity price of US\$ 6,79 cent/kWh. 🌱

WGC2010 DAILY NEWS

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To view current and past issues of the WGC 2010 Daily News online, please visit www.wgc2010.org

The views expressed in the articles, features and listings are not necessarily those of the WGC2010 Organizing Committee or the editors.

AGENDA | April 27, 2010

08.30am – 10.10am	Technical Session	Room A
10.40am – 12.20pm	Technical Session	Room A
12.20pm – 01.20pm	Lunch Break	
01.20pm – 03.00pm	Technical Session	Room A-J
03.30pm – 05.10pm	Technical Session	Room A-J
07.00pm – onward	Indonesian Cultural Night	GWK Park

NOTIFICATION:

THE MEMBER OF WESTERN PACIFIC REGIONAL BRANCH OF IGA ARE INVITED TO ATTEND THE ANNUAL GENERAL MEETING AT HIBISCUS ROOM OF BICC ON WEDNESDAY, APRIL 28 AT 5-6 P.M. PLEASE BE THERE.

WGC2010

Geothermal Energy Has Helped Iceland...

OLAFUR RAGNAR GRIMSSON
President of Iceland



ICELAND is known as one of the countries that have successfully maximized its geothermal resources. WGC2010 Daily News spoke to Olafur Ragnar Grimsson. Here are the excerpts:

WE congratulate you that Iceland is one of the few countries in the world which successfully develop geothermal resources. What has been the key to your success in this area?

It has been a very interesting and inspiring development and a history that many countries can learn from. It was not a grand government systems that lead to the development. It mostly came because of the initiatives taken by local communities as well as by the national government. It has also been helped by the work of our scientists, engineers and our experts.

Yes, indeed, geothermal energy has helped Iceland to survive the recent banking shock, especially because the cost of heating and electricity for ordinary people, families, homes and business companies was only a small proportion of what it is in other European countries. But also because our geothermal resources make Iceland a very attractive location for industrial investment, and will do so even more in the coming years : for aluminium smelters,

data-storage centres, high-tech industries and other profitable enterprises.

When did the development of the geothermal industry first start up in Iceland? How was this accomplished?

We first started to use geothermal in Iceland in the 1930's and 40's. Throughout my lifetime the geothermal sector has moved from a very limited space heating programme to heating the whole country then selling electricity to aluminium smelting company's and also selling data storage to foreign companies through the use of the electricity created by geothermal energy.

Out of all the power generation in Iceland how much is generated through geothermal resources?

It is ever increasing. From about one quarter to a third of all our power is generated by geothermal resources.

What Indonesia can learn from Iceland?

It is important for Indonesia to put emphasis on local and regional geothermal projects, as the country is extremely rich in geothermal resources. It is important to utilize the geothermal resources and to be aware of not only the electricity potential but also the potential of other economic growth factors such as spas and greenhouses.

Bali is often described as an island with strong traditions. How would you compare with your own people?

I believe that people who live on islands and close to the ocean have an understanding of harmony and respect of nature. I also believe that people who live on islands develop a sense of self-reliance. Respect of nature and self-reliance are two traits that both Iceland and Bali share.

Recently there was a volcanic eruption in southern Iceland which hindered a lot of travel across Europe. Did you have any issues?

Because of the nature of the eruption and the wind direction it was only within the last few days that air travel out of Iceland was stopped and we had no issues with leaving the country. However I do know that some of the other delegates from Iceland could not attend, as they couldn't change their flights. I am not worried to fly since we have a very high safety standard. 🇮🇸



Olafur Ragnar Grimsson



WGC2010 Daily News spoke to Olafur Ragnar Grimsson

African Rift Geothermal Risk Mitigation Program (ARGeo)

—R. GORDON BLOOMQUIST, *Chair IGA WGC 2010 Steering Committee*



THE World Bank, realizing that substantial barriers stand in the way of accelerated geothermal development, initiated two programs to address the needs of countries in Eastern and Central Eurasia and the East African Rift Zone. The latest, ARGeo program initially designed to serve six East Africa Rift Zone countries, was initiated in 2006. Now after numerous delays, it appears that final World Bank Board approval for the initiation of activities will take place later in 2010.

The ARGeo program has two windows of focus: A Technical Assistance (TA) window and a Geological Risk Insurance (GRI) window.

A major component of ARGeo is directed toward TA and the focus is upon capacity building, removal of legal, institutional and regulatory barriers and conducting exploration activities. Under the ARGeo program the UNEP will be in charge of all pre drilling TA while the World Bank retains management of the Geological Risk Insurance Window and also has the ability to provide limited TA to address post-drilling issues. Some post drilling issues, however, must receive at least limited attention prior to the initiation of the drilling phase and can be covered by the World Bank. These activities include negotiation of the concession or lease agreement and where outside financing is required, the basis for a Power Pur-

chase Agreement (PPA) that will provide project participants with an assurance that if the drilling phase is successful that there will be a market for the power that may be produced. Other post drilling TA can be provided for the development of business plans and financing packages, final negotiation of the PPA and a recent addition to the program is an internship program where project developers can nominate individuals to receive internship positions with geothermal developers and/or operators in to gain needed expertise prior to the project coming online.

The greatest impediment to more wide spread geothermal development in the ARGeo eligible countries is, however, the high risk and substantial financial investment that developers must make in conducting exploration activities and reservoir confirmation drilling. The Geological Risk Insurance program, which is the corner stone of the ARGeo program, is designed to absorb a major portion of that risk by providing an insurance against the failure of the reservoir confirmation drilling program to confirm the existence of an economically exploitable geothermal resource. Criteria for success or failure is negotiated prior to the initiation of the drilling activities. The insurance coverage applies only to eligible cost factors and any failure is based solely on geological parameters and no coverage is available to

cover so called drilling risk for which conventional drilling insurance is normally available.

The insurance program is in the form of a contingent grant and no money is made available to the recipient of the insurance coverage until such a time that the well is deemed to be a failure.

The World Bank has, however, considered alternatives to World Bank backed Geological Risk Insurance. One alternative that has been discussed at length is the purchase of insurance coverage from conventional insurance providers. The major downside of such an approach is the lack of such insurance providers and the very high premiums that any such insurance provider would require.

However, the major advantage of such an approach would be that given enough experience in the provision of insurance by the insurance industry, premiums would begin to fall as accrual data became more available. In addition, if a viable geothermal insurance industry was so created it would continue to serve the geothermal industry long after the World Bank and other governmentally sponsored programs have been terminated.

A third approach could well be the hybrid of the above two with enough insurance industry involvement so as for the industry to be able to gain accrual data without having to absorb unacceptable risk and /or requiring premiums that would be unacceptable to project developers. 🌱

BALI AND BEYOND

WGC2010

GWK, Bali's Massive Cultural Park



AMONG the WGC2010 escapades outside the conference venue is the Indonesian Cultural Night held at Garuda Wisnu Kencana (GWK) Park, tonight. The main attraction of the park, located on a hilly area 263-meter above sea level in Ungasan village, is Garuda Wisnu Kencana statue. The statue, created by noted Balinese sculptor I Nyoman Nuarta, depicts the God of Wisnu riding his mythical bird Garuda.

In this place you must be amazed! You can see a huge statue, built as a symbol of global and environmental conservation mission. It is projected to be visible from some 20 kilometers away, thus can be seen from Kuta, Sanur, Nusa Dua and Tanah Lot.

Made of a mixture of steel and copper, this unfinished statue is 4,000-ton weight, 75-meter high and 60-meter wide. Once the construction is completed, it is said to be the largest statue in the world, even larger than

Bronze statue of God Wisnu, the park's main attraction





Natural lime rock dominates the massive view of GWK



The gigantic mystical Garuda bird

the Liberty.

The already completed parts of the statue feature half of the body of Wisnu and the head of Garuda. This 250-hectare cultural park also boasts a unique architecture. It is situated in a limestone plateau in the southern coast of Bali. Pillars made of limestone, with the Garuda head

as the backdrop, is a stunning view in the park.

In several spots around the park, the limestone plateau is vertically engraved, forming tribune-like walls with a carpet of green grass on the ground.

Stretching from the backside of the park to the front of the Garuda statue is a con-block path

dividing the grass field. Various international-scale cultural events often take place here, since the park is big enough for thousands of visitor.

Therefore, don't forget to attend the Indonesian Cultural Night, because you will not only enjoy the unique artistic marvels of the park, but also the amazing performance of over 200 Balinese dancers. They will perform a geothermal dance known as *Bayu Pertiwi* (The force of nature) created by Bali's foremost coreographer, DR. Ni Made Ruastiti.

Don't miss it...👉

Powering The Country With Green Energy



PT Pertamina Geothermal Energy (PGE) is responsible for developing, managing and sustaining a diversified portfolio of upstream energy related business through organic expansion and strategic alliance planning. With over 30 years of experience in the geothermal field operator with a 95% delivery rate, PGE will constantly strive to be the "Center of Excellence for the Indonesia Geothermal Industry"

PGE Supported by qualified human resources in technology in the upstream geothermal industry. With large potential reserves for development and commercialization along with extensive assets, PGE is geared toward powering the country with green Energy.



Unique Booths, with Living Cultural Touch



Living culture creates the state oil and electric booth alive



AMONG 81 exhibition booths at the WGC2010, the one belonging to the Indonesian Ministry of Energy & Mineral Resources seems to easily catch everyone's attention for its unique, unusual theme that features modernity mixed with traditional Balinese touch.

The entrance is the key to its uniqueness, featuring a typical Balinese split gate on one side and the same structure on the other end. On the right side front of the gate there is an elevated structure where a small group of Balinese gamelan traditional musicians play live accompanying dancers to welcome every guest.

"Not only the structure, but also the living culture like the gamelan and the dancers that usually make our booth always crowded, being the center of attention" said Manto, the Indonesian Ministry of Energy & Mineral Resources exhibition project executive. The local tradition is to balance the modern, technological sides of the energy issue. "The living culture like dance and traditional music is the part that makes the modernity like geothermal engineering looks more harmonious with nature," explained Manto.

Another unusual feature is seen at Medco Energy booth. They come up with a unique corner, looking like a subway where visitors may walk

over a glass-window floor with magma-like light combinations which replicates flowing molten rocks underneath the earth. Another interesting feature of the booth is its organic-rice plantation model, a low-cost yet high value, healthy planting system of the Indonesian staple food.

Iceland, meanwhile, seems to try to impress visitors with its vast array of geothermal success story, featuring a number of engineering companies with segmented expertise in drilling, geo survey, construction, overseas investment, and even a geothermal financial partner.

Indonesian President Susilo Bambang Yudhoyono guided Iceland President Olafur



Lava rock flowing under the glass floor

Ragnar Grimsson to the exhibition hall. Both heads of the states seem to be happy with the initial success of the conference, highlighting the enthusiasm of the exhibitors.

They visited the exhibition right after the WGC2010 opening ceremony. 🌟

PHOTO GALLERY



Serene yet ecstatic atmosphere at the WGC2010 opening ceremony at Nusa Indah Hall



The Balinese dance performance attracts many to point their camera lens



The VIPs at the WGC2010 opening ceremony (from left) Indonesian Coordinating Minister for Economy Hatta Rajasa, IGA President Ladislaus Rybach, Iceland President and first lady Mr and Mrs Grimsson, Indonesian President Susilo Bambang Yudhoyono, INAGA President Surya Darma, and Head of Indonesian Geology Agency, R. Sukhyar.

GLOBAL CONSULTING COMPANY

SENIOR EXECUTIVE APPOINTMENTS – ENERGY SECTOR



Regional Director, Energy, Asia

You will be responsible for expanding and building Energy business in Asia with an initial focus on India, Indonesia and Vietnam.

You must have a strong focus on client relationships and business development. Over 10 years relevant working experience in Engineering Consulting Companies or Energy Utilities and Developers.

Location: Flexible although anticipated to be in Singapore or Kuala Lumpur, Malaysia

Business Development Lead, Indonesia

You will be responsible for business development in the Indonesia Energy Sector as well as other infrastructure sectors particularly Water and Transportation.

You are required to prepare and develop proposals as well as manage and deliver engineering assignments.

Location: Jakarta, Indonesia

Geothermal Engineers

You will be part of the expanding geothermal energy team in Indonesia. You should be university qualified from Mechanical, Electrical or Civil engineering with a good command of the English language.

You should have a minimum of 5 years experience, however, new graduates may be considered.

Location: Jakarta, Indonesia

At AECOM our purpose is “To enhance and sustain the world’s built, natural and social environments”. As an engineering, design and program management company that employs 47,000 people worldwide, we have become the market leader in the development and delivery of major infrastructure around the world. Our culture thrives on people with passion and energy and an aspiration to win.

Our Global Energy business is a leader in providing clean energy solutions for a sustainable low carbon future. The range of services offered by AECOM Energy include management consulting, project evaluation, project financing, planning, conceptual and detailed design and project and asset management.

AECOM is experiencing rapid growth in the power and energy sector and the Energy Business Line has decided to expand their operations in Asia by appointing two senior executives capable of leading and developing a planning, engineering and project management business in the region. The business will focus on the following market segments: energy efficiency, carbon management, environmental management, transmission and distribution, hydropower and dams, thermal and geothermal, renewables and project and program management.

The positions will suit senior professionals working in the Energy Sector looking for a new opportunity to develop their career by taking a leadership role in an expanding global energy company. Candidates should possess excellent interpersonal skills, a tertiary qualification and proven business development and consultancy experience in the Asian power and energy markets.



ELVI NASUTION SCHACFER

Energy Specialist World Bank

In my opinion the geothermal issue is appropriate with the recent condition and this is the first time I join World Geothermal Congress. I cannot comment much since it is just officially opened. However so far I find all the arrangement of the congress is excellent, and the place is also appropriate for such world event. I just wish the congress every success.



EMILY CLEARWATER, New Zealand.

This is my first international conference so I am very excited. Bali has a wonderful culture.



JIALING ZHU, China

We are very happy to be attending the WGC again this time in Bali. We are looking forward to gain knowledge from people all over the world to take back to China.



PHILIPPE JOUSSET , France

I have found the conference very good so far it is very well organized and it is nice to visit Bali for the first time



RAMON CHITO CEDRIC M MALATE

Philippines

It is very exciting to attend the WGC2010. It is a great opportunity to catch up with old friends, and meet new ones while also learning at the same time.



GARETH COOPER, Australia

From an Australian point of view the scale of things is very impressive. I am very excited to see what the local people are doing and to pick up some tips from them and also share our knowledge.



ANIKO TOTH, Hungary

I am enjoying the conference so far. My favorite part so far was the Balinese dancing at the opening ceremony. It was very beautiful.



MAKKY JAYA , Indonesia

Being Indonesian even though I am now working in Germany it is very special that the WGC2010 is being held here in Bali.



HON KIRAITU MURAUNGI,

The Minister of Energy – Kenya.

Kenya has a very large geothermal resource so the WGC2010 is the perfect opportunity for us to meet new partners to work upon geothermal energy within our country. We are very excited.



BANYU BIRU DJAROT,

Direktur PT Antareja Resources

Our company is proud to be able to participate in WGC2010 in Bali. With the presence of the Iceland and Indonesian Presidents as well as a number of important geothermal players, we can notice the existence of Indonesia in the geothermal industry. Hopefully Indonesian target to establish 4000 MW geothermal power plant can be achieved and Indonesia can be a leader in geothermal use in the future.

CORNER



Ladislav "Ladsi" Rybach, IGA President (center) visited the WGC2010 Daily News room accompanied by Herman Darnel Ibrahim (WGC2010 chairman of the Organising Committee), Agusman Effendy (WGC2010 Organizing Committee), posing with the editorial members.

NOTIFICATION:

IGA WILL HOLD A GENERAL MEETING ON APRIL 28, 2010. THE MEETING WILL START AT 6 P.M. AT HIBISCUS ROOM AND FRANGIPANI ROOM AT THE BICC. ALL WGC2010 PARTICIPANTS ARE WELCOME TO THE MEETING WHERE INFORMATION ABOUT THE MAIN IGA ACTIVITIES IN THE PAST AS WELL AS PLANS FOR THE FUTURE WILL BE GIVEN.