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New Zealand Geothermal Association (NZGA) News - 23 July 2014

Dear Members and friends, welcome to this issue of the NZGA Newsletter!

President's Report

Welcome to the July 2014 New Zealand Geothermal Association Newsletter.

World Geothermal Congress (WGC) 2015 – Momentum Gathers!

Government Support - WGC 2015 has been identified by the NZ government as a strategically important event and has committed funding to the **NZ Inc.** project through the provision of a Project Manager, administrative support and direct matched cash funding of $100k. For more details read the 'NZ Inc' following 3 paragraphs down.

Event Registration - Registration is open with early bird registration fees applicable if you register and **pay** before 1 February 2015. Early bird registration will save you at least A$140.

If you are an NZGA member then you are an International Geothermal Association (IGA) member as NZGA is affiliated to IGA and the early bird fee is A$1,050.

It is time to register and to get your accommodation booked.

Event Papers - There are expected to be about **1400** papers delivered which is about 300 more than at Bali in 2010. Well done if you converted your abstract(s) into paper(s).

WHAT'S IN THIS ISSUE?

GEOTHERMAL FACTS – Record High Geothermal Electricity Production

Geothermal electricity production reached a new high in mid-July – an 850 MWh average was achieved for the week ending 20 July. .

WORLD GEOTHERMAL CONGRESS
19–24 April 2015 Australia – New Zealand

'NZ Inc.' - Marketing and Networking - WGC 2015 is all about Marketing and Networking. The project has been established focussed on coordinated, targeted marketing and networking activities. Participants will have a presence in a large New Zealand pavilion located in a high impact area of the WGC conference exhibition floor space. Participants will be able to be involved with international PR and media, event specific marketing collateral, networking events, in-country market briefings for attendees (e.g. from Philippines, Indonesia, etc), communications and coordination prior to and during the event.

To be part of the 'NZ Inc.' shared exhibition space the cost is NZ$7,000. By way of comparison the standard cost for a prime shell 9 m^2 exhibition space at the conference is AU$7,450 (NZ$8,004.50).

Interested? please contact Cate Hlavac (cate.hlavac@nzte.govt.nz) or Andy Blair (a.blair@gns.cri.nz). 'NZ Inc.' will keep you abreast of concept and design decisions along the way.

Field Trips - If you know of people travelling to the conference encourage them to ticket their airfares to New Zealand **VIA** Melbourne. If they arrive in New Zealand on the 25th / 26th April and depart from New Zealand in early to mid-May they will have been able to participate in the field trips in New Zealand and to tour around independently enjoying a pleasant 2015 New Zealand Autumn.

I encourage you to get involved and assist in show-casing New Zealand's geothermal prowess.

July Workshop - NZGA / HERA above ground technologies workshop is scheduled for 25 July. It is great to see

the interest in direct geothermal use and geothermal technologies. Get involved.

Read on for contributions from fellow NZGA members.

Brian Carey
President New Zealand Geothermal Association
July 2014

International News

World's largest geothermal power plant to get underway - Construction on the 330 MW Sarulla geothermal power plant is to commence as announced by Indonesia's coordinating economics minister. When completed, the plant in North Sumatra province will be the world's largest. Indonesia aims to get 12 per cent of its power from its estimated 29 GW of geothermal potential by 2025. Read more here.

In July, Toshiba announced that it had received a contract for the supply of three 60 MW steam turbine generators, each to form the core of 110 MW stages. Read more here . The design will include binary cycle units similar to Mokai and Rotokawa designs.

REN21 Report Released –The Renewables 2014 Global Status Report is now available (FULL REN21 Report). It has material on :

- supporting policies in developing economies
- electricity generating capacity
- renewables in heating and cooling
- shift in investment
- deployment leaders
- renewable energy evolution in the last decade

First released in 2005, REN21's Renewables 2014 Global Status Report (GSR) provides an overview of the renewable energy market, industry, investment and policy developments worldwide. It enables policymakers, industry, investors and civil society to make informed decisions. The report covers recent developments, current status, and key trends. It does not provide analysis or forecast. The Renewables Global Status Report relies on up-to-date renewable energy data, provided by an international network of more than 500 contributors, researchers, and authors.

Funding for EU Geothermal Projects – Geothermae (in Draskovec) and GEOSTRAS (in France) – About 15 million euros each has been awarded to the Geothermae project in Croatia and the GEOSTRAS project on the French-German border from EU's 1 billion euro NER 300 programme. This programme is funded from the sale of 300 million emission allowances from the new entrants reserve (NER) as part of third phase of the EU emissions trading system.

The Geothermae geothermal project will produce electricity and heat from a geothermal aquifer and from associated natural gas. The project, in Draskovec, Croatia, will generate 3 MWe from geothermal brine using an Organic Rankine Power Cycle.

The French-German cross border GEOSTRAS geothermal project aims to produce electricity and heat from a high temperature geothermal resource near Strasbourg. It involves creating a circulation loop several kilometers long at a depth of between 4 km and 5 km that will function as a semi-open underground heat exchanger. The proposed geothermal plant is expected to produce about 6 MW of electricity and 35 MW of heat. More details can be found here.

Costa Rica - Japan/Europe funds Geothermal Projects - A geothermal programme valued at $958 million US dollars was approved by members of the Costa Rican Legislative Assembly in mid July. Over $600 million of the total is proposed to be funded by the Japanese International Cooperation Agency and the European Investment Bank. The Japanese agency will provide $540-560 million, and the European bank $70 million. The remainder will come from the Costa Rican Electricity Institute. Three power plants around 50 MWe in capacity are being considered as Costa Rica pushes for 100% renewable electricity by 2021.

Gas discharge incident from well at Biliran in the Philippines – Reports from flow testing of Biliran well BN-4 identify gas exposure to personnel who were on the site. Your organisation may wish to use your internal hazard alert processes to highlight issues around gas exposure and appropriate control methods.

National News

Greenhouses for Ngati Tuwharetoa?	TeMihi is operational	Gas Re-injection – other ways to decrease CO_2 discharges
Ngati Tuwharetoa Geothermal Assets is researching development a large greenhouse development at Kawerau with the assistance of Amsterdam-based Wageningan UR institute. Geothermal direct use developments form part of an investment model based on renewable energy utilisation and job creation.	Contact Energy accepted the 166 MW Te Mihi power station from its contractors on 5th May 2014. The $400 million-plus geothermal development is part of a six-year, $2 billion investment the company has made in renewables to lower its long-term generation costs and shift its gas-fired plants into more flexible roles.	Auckland University is investigating ways to return non-condensable gases into geothermal reservoirs. GNS Science is undertaking work on re-saturating geothermal brine with gas in order to return the gas to the underground rather than atmospheric discharge. The work has a modeling component and aims to model the transport and trapping mechanism for the non-condensable gases and their impact on in reservoir fluid-rock interaction.

New Geothermal Generation High

Geothermal electricity production reached a new high in mid-July – an 850 MWh average was achieved on for the week ending 20 July. Production has routinely been above 800 MW since Contact Energy accepted the 166 MW Te Mihi plant on 5th May 2014.

Grid Transmission Strengthening - Wairakei Ring Main Commissioned

On 3 July 2014, Transpower completed the commissioning of the Wairakei Ring Main Reinforcement. This $141 million transmission project was built to enable future geothermal investment in the area.

The Transpower economic case for the proposal assumed that:

a) new geothermal generation in the area is able to be constructed and dispatched at a lower cost than other new generation in New Zealand;

b) investment in geothermal generation is likely to occur, but is contingent on transmission investment in the Wairakei Ring region;

c) there are transmission constraints in the Wairakei Ring region; and

d) there is no other way of relieving the constraints or promoting investment in low cost geothermal generation other than making a transmission investment of this type.

The work will now move to removing the old “Wairakei-Whakamaru B” line with the removal of the lines and towers accelerating from November 2014 being scheduled for completion mid-2015.

Now that installation work is completed, geothermal stations in the region are not constrained by transmission capacity, and capacity will exist for the future connection of Tauhara II and other stations.

Norske Skog Tasman seeks buyer for power plant

Norske Skog Tasman is seeking a buyer for its 23 MWe TOPP-1 geothermal power plant using investment bank Deutsche Craigs. The plant was committed to in May 2011 ahead of Norske Skog rationalisation of operations in Australia and New Zealand. In January 2013, paper machine PM2was closed down, halving the Kawerau site's newsprint production, reducing electricity with the loss of about 110 jobs. Globally, Norske Skog is shifting focus away from newsprint and has started looking at the potential of wood-based biofuels as an adjunct business. See http://www.energynews.co.nz/node/17451

IEA Geothermal – what's new?

IEA Geothermal provides a flexible and powerful framework for international geothermal collaboration among countries, industries and industry organizations, and operates under the auspices of the International Energy Agency (IEA), Paris, France.

See here for more about the IEA Geothermal Goals, Activities, Benefits, and Obligations.

News/Events - http://iea-gia.org/category/news-events/

Recent Publications

- Deep Geothermal Energy in the EU Horizon 202 Programme. 29 April 2014
- Protocol for Induced Seismicity, 16 January 2014, General guide to address induced seismicity associated with EGS.

NZGA Event - Above Ground Geothermal Technologies workshop – 25th July, Auckland

Jointly hosted by the New Zealand Geothermal Association (NZGA) and the Heavy Engineering Research Association (HERA), the sessions will focus on industry perspectives in above-ground technologies and development activities taking place currently.

HERA Innovation in Metals

- Download the workshop flyer here.
- Download the workshop registration form here.

Geothermal Associations Around the World

Geothermal Association's around the world have offerings in terms of publications and approaches from which we can learn. Here are two Geothermal Associations with interesting resources – Canadian Geothermal Association and the European Geothermal Energy Council.

CanGEA Canadian Geothermal Energy Association	EGEC Geothermal
Canadian Geothermal Association	**European Geothermal Energy Council**
CGA Resources of interest • Geothermal Technology Roadmap: Global Best Practices Summary - Exploration Through Generation • Canadian Geothermal Projects Overview 2013	**EGEC BROCHURES** • Geothermal Electricity • Geothermal Innovative Applications for a Sustainable Development • Geothermal Heat Pumps – Ground Source Heat Pumps • Geothermal Energy Use in Agriculture • Geothermal District Heating • Geothermal Desalination

Electricity Demand

NZ situation mirrors that in the UK and AU…..but what about Geothermal?

According to MBIE's recent ***Energy Quarterly*** publication electricity generation slipped to a four-year-low over summer, continuing a trend of flat to declining demand. Generation in the three months to March was down 0.6% to 9,935 GWh, compared to 9,992 GWh for the same period a year earlier. This flat or downward trend is evident globally. In Australia, electricity consumption (as measured by scheduled demand) for an adjusted 2012 (because it was a leap year) was 195.5 TWh, this fell by 4.9 TWh in 2013 (2.5 per cent). This is consistent with a downward trend in consumption since 2009.[1] During the European financial crisis, Europe's consumption of electricity shrank by 5%, with primary production also facing a noticeable decline. Between 2007 and 2012, the UK's peak electrical demand has fallen from 61.5 GW to 57.5 GW [2] Average generation in 2012 was about 32.8 GW and about 3% lower in 2013. Since 1949, U.S. electricity generation has grown dramatically, with an average annual growth rate of 4.2 percent. Since 2000, however, U.S. electricity generation has grown at an average rate of 0.7%. Projections of 0.9% growth have been noted for the period 2013 – 2040.[3]

And geothermal? Despite increasing geothermal contributions and strong hydro-storage levels renewable energy's share of electricity production in NZ was down to 79% from 85% over the December quarter. But compared to the previous March period, generation from renewable resources was up from 73%. Geothermal production continued to grow, reaching 1,594 GWh, up from 1,584 GWh in the three months to December and 1,407 GWh in the 2013 March quarter.

Geothermal generation accounted for 16% of New Zealand's total electricity generation, MBIE says in its latest quarterly publication. In recent weeks, geothermal has contributed 18% and this higher contribution should be reflected in September quarter figures.

NZGA – 5 YEAR PLAN

In May 2014, NZGA posted its 5 year Vision, taking the Association through to June 2018. The Vision is:

"To play a pivotal part in New Zealand continuing to be a Geothermal Centre of Excellence fostering the increase of Geothermal resource use in New Zealand through:

- *Effective influence and promotion at a political and industry level*
- *A numerically growing and mobilised Membership*
- *Superior communication to and education for our Members and the community*
- *Strong links with the international Geothermal community*
- *Support for Geothermal research."*

To access a full copy of the Vision see here on the NZGA web-site.

NZ Geothermal Interest Groups - Update

The NZGA Special Interest Groups have been quiet in recent months….BUT this is a great time to get involved. Members are encouraged to use these groups as a means of networking, learning and sharing experiences. If you would like to get involved, contact the Group Convener.

See more details about NZGA's Special Interest Groups and the current update on activities.

[1] http://reneweconomy.com.au/2014/power-consumption-falls-as-renewables-make-up-12-of-australia-market-2013

[2] [a] [b] [c] "Peak Light Bulb". *New Scientist*. 4 January 2014. p. 4.

[3] http://www.eenews.net/assets/2013/12/17/graphic_ew_01a.png

Board and Executive Officer Update

Board Nominations - Over recent weeks, NZGA Secretary, Jane Brotheridge has been receiving nominations for the next Board rotation.

World Geothermal Congress 2015 - World Geothermal Congress 2015 organisation is progressing rapidly. Roland Horne has reported that nearly 1400 papers have been received of which 955 had been reviewed by mid-July. The Organising Committee together with arinex have finalized and advertised sponsorship and exhibition packages. Registration forms have been finalised and registrations are now coming in. Content of Opening and Closing ceremonies are being worked on, along with entertainment during the dinner and welcome functions. Short course content and venues are now being finalized as are field trips.
As this event is hosted jointly by New Zealand and Australia, but with conference held in Australia, we are sorting out appropriate 'Welcome to Country' and 'Maori welcome' protocols, with this effort being led by Rawiri Faulkner of GNS Science.

Previous WGCs have had a declaration, so a draft Melbourne Declaration has been prepared for IGA review. Effort will now be directed towards an Honorary Committee to bring in international Government support. External to the work of the Organising Committee, NZGA has approached the New Zealand ambassadors of the Philippines and Indonesia seeking their support, but the focus of coordination with Government is now through NZTE. Brian Carey has mentioned that a prime New Zealand pavilion site has already been secured in the exhibition area with the assistance of Government funding through NZTE, though companies are free to secure independent spaces outside of this. Andy Blair together with Cate Hlavac (NZTE) are continuing to look at special New Zealand events before, during or after the Congress. Brian White and Brian Carey have previously met with Minister of Energy and Resources, Hon Simon Bridges who expressed interest in supporting the event and speaking at the event (subject to elections, Cabinet reshuffles, etc.)

We continue to encourage companies to make the most of this international event in our part of the world. This will include possible sponsorship, company exhibition, delegate attendance, and coordination with NZTE on the New Zealand visits outside of the Congress itself.

Country Update and Direct Heat Assessment - Some time was spent in collecting key data for the WGC New Zealand country update. Our direct use data was not current, but some support was secured from EECA who needed direct use data to assess regional changes and progress against renewable energy targets set out in the New Zealand Energy Strategy. The updated direct use figures reflect the significant influence of the closure of the PM2 paper machine at Kawerau.

Companies were approached for an indication of changes in professional personnel and figures showed that the industry peaked in 2012 with some contraction since then, especially felt by the construction companies as projects were completed.

This data in paper will be finalised at the end of October.

Submission on Major Hazard Facilities - MBIE has been consulting on developing regulations to support the Health and Safety at Work Act. NZGA has prepared a submission focused on major hazard facilities which seeks that geothermal binary cycle plant not be identified as a special class of 'major hazard facility', as only one of our power stations would come in the threshold range of working fluid quantities to be considered a possible major hazard facility. The process of profiling the 'risk landscape' has been useful in identifying that geothermal binary cycle plants are not major hazard facilities.

NZS 2403 Code of Practice for Deep Geothermal Wells - An NZGA committee under the leadership of Paul Bixley was responsible for initial technical changes to this internationally-used New Zealand Standard. Over recent months this has been back with a Standards New Zealand committee for further revision and they are now seeking public comment. NZGA will now make a final submission on this version. Members are welcome to download the document and comment directly.

- To download a copy of DZ 2403 CLICK HERE
- To download a comment form CLICK HERE

NZGA/HERA Seminar on Above Ground Geothermal Technologies See you in Auckland on 25th July.

NZGA Membership Details

Welcome to the following new members:

- **Bronze level Corporate Member: Geoscience Consulting (NZ)** – nominated members are Huw Williams and Greg Martin.
- **Karl Barrie** – of Nalco
- **Sarah Beadle** – of Wildland Consultants

- ***See who our Corporate and Institutional Members are here.***
- ***More details on membership benefits, fees and application forms are available here on the NZGA web-site.***
- ***NZGA operates 8 Interest Groups – find out how you can get involved here.***

NZGA relies on memberships fees in order to exist and to promote and provide services to the sector. The support of our members is much appreciated. Thank you.

NZGA RESOURCES (on the NZGA web-site)

NZGA Workshop Papers (@ Dec 2013)	NZGA Media Statements (@ Aug 2013)	NZ Country Update 2012	NZGA Submissions (@ March 2013)

EVENTS – 2014 and beyond…

24-26 Nov 2014:	**36th New Zealand Geothermal Workshop**
Venue:	University of Auckland
Theme:	*"Conventional Geothermal in the test of time"*
More:	http://www.geothermalworkshop.co.nz/
25 July 2014:	**Above Ground Geothermal Technologies Workshop**
Venue:	Beca Auditorium, Auckland
More:	NZGA / HERA Seminar
19-25 Apr 2015:	**World Geothermal Congress 2015 : Australia - New Zealand**
Venue:	Melbourne Convention and Exhibition Centre
Theme:	*"Views from Down Under - Geothermal in Perspective"*
More:	WGC 2015 flyer; WGC website

NZGA Action Plan

The NZGA Action Plan is a living document that sets out the work plan and activities for the year ahead.

As progress is made so the Plan reflects this. Read the latest version of the ACTION PLAN HERE (last updated April 2014.)

NZGA produces this Newsletter primarily for the benefit of its members and also for the wider public. We are happy for the material in the newsletter to be used but ask that the NZGA Newsletter be acknowledged as the source. We are always keen to promote our members and their project activities – please contact us with your news, vacancies or useful materials.

KEEP IN TOUCH –

If your contact details change – let us know here - Executive Officer