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## Newsletter 5<sup>th</sup> Oct 2010

Hi Everyone,

This Oct issue of the newsletter is set out as follows:

- President's Report
- Geothermal News / Articles
  - NZ focus
  - International news sample
- Board Update
  - Elections and Board Matters
- Recent Submissions
- Major Events/Conferences
- Training / Vacancies Update
- Action Plan
- Membership

### President's Report

Welcome to this quarter's edition of the New Zealand Geothermal Association Newsletter. We had some good feedback from the last Newsletter, feel free to contribute. Please send any articles or advertising in to [connie.crookshanks@eastharbour.co.nz](mailto:connie.crookshanks@eastharbour.co.nz)

Work continues establishing the various committees and agreements required to make WGC 2015 happen in Melbourne. The joint hosting of this event creates a unique opportunity for New Zealand geothermal to demonstrate our progress which by 2015 could be right up with the best in the world.

This last quarter has seen continued strong progress in process heat utilisation. The geothermal steam supply from Ngati Tuwharetoa Geothermal Assets to Svenska Cellulosa Aktiebolaget (SCA) tissue plant in Kawerau began commissioning during September.

SCA's Kawerau plant produces approximately 60,000 tons of tissue or 155 billion sheets of 2-ply tissue, that's a lot of tissue whatever conversion rate is applied. All of this is to be dried with geothermally raised clean steam - congratulations to NTGA and SCA.



Looking forward the GeoNZ 2010 Conference is on in Auckland 21 to 24 November, put on by the Geoscience Society of New Zealand and the University of Auckland. The NZGA will be holding an industry-led session at the Conference including industry updates and discussion of the NZGA action plan and AGM.

There is no separate NZGA Conference this year; the GeoNZ Conference has the endorsement and support of the NZGA. If you are interested in New Zealand geothermal you should consider going. The Conference has been scheduled to overlap with the New Zealand branch of the Australasian Institute of Mining and Metallurgy (AusIMM) and a special symposia on the Darfield earthquake is to be held.

See you there.

**Spence McClintock**  
**President, NZGA**

## Geothermal News /Articles

### NZ News

#### ***A possible “NZ-Inc” approach to international geothermal development***

The NZGA started to work closely with New Zealand Trade and Enterprise (NZTE) at the World Geothermal Congress, though there has been previous interaction. The support given by both NZTE and the New Zealand Embassy in Indonesia was tremendous and the Board has formally thanked those involved. We continue to develop these relationships.

NZTE believes that in the clean technology sector NZ geothermal capabilities offer a strong export opportunity. Clearly, while individual companies can promote their own capabilities there are a number of benefits from working together; economies of scale, pooling of costs and the presentation of a cohesive NZ Inc message about our collective NZ capabilities and overall resources. The impact of an “NZ Inc” approach is seen as much greater than that if each company acts in isolation.

To this end, a number of projects are now running in parallel:

- NZTE and Hawkins Infrastructure have jointly kicked off a project known as the “Renewable Energy – Geothermal Export and Investment Roadmap”. The objective of this project is to strengthen the competitiveness of the geothermal energy sector in New Zealand and significantly increase New Zealand’s share of this fast growth global energy sector through exports of services and outward direct investment. This project under researcher Nick Marsh of NEXT Corporation will require a high degree of cooperative engagement from the NZ geothermal sector, and the Board is behind this. Initially this will involve a review of capabilities and opportunities globally, with study outputs due by January 2011. Outputs will include a roadmap for NZ Inc based on a joined up geothermal export sector. Nick is currently interviewing a range of key people across the sector- Please contact him at [nick.marsh@nextcorporation.net](mailto:nick.marsh@nextcorporation.net) or 021 617 267
- HERA is actively working with NZTE and NZGA on the updating of the Geothermal Capability register they have previously produced (see <http://www.nzgeothermal.org.nz/publications/Reports/HERAReportR5-35.pdf>). You should contact Nick Inskip at HERA in Auckland with your latest company information. This will feed both into the NZTE study as well as being accessible to potential developers and EPC contractors interested in work in New Zealand.
- Brian Cox of East Harbour Energy will be representing New Zealand geothermal and bioenergy interests at a conference in Singapore in October,

again working closely with NZTE. He will be presenting company information where this has been provided to him and has arranged for a period of time for companies to make their own presentations. This initiative is also linked to a concept of a Geothermal-NZ cluster. The NZGA Board's intention is that this cluster concept is wrapped in to the NZTE Roadmap project so that there is a fully cohesive NZ-Inc front.

The final nature and costs of an NZ-Inc structure has yet to be determined. However, the Board recognise that there is considerable opportunity internationally for New Zealand geothermal interests, so is supportive of these initiatives and will be looking to maximise it's involvement for the benefit of its members.

**What next?** - At this stage, if you are interested, please advise the [Executive Officer](#).

### ***Geothermal in the MED Statistics***

In the June issue of the NZGA Newsletter we reported that NZ Geothermal was really "taking off" with a significant growth in electricity generation. In September, MED released the June 2010 quarter edition of the New Zealand Energy Quarterly. It confirms that NZ geothermal is 'steaming ahead'.

Key highlights this quarter include:

- geothermal generation made up 13 percent of total electricity generation this quarter
- renewable generation accounted for 73 percent of New Zealand's total electricity generation for the quarter
- gas displaced coal for electricity generation
- the highest level on record of sub-bituminous coal production was achieved
- petrol demand decreased two percent and diesel demand decreased five percent, in line with normal seasonal variations
- the high level of geothermal electricity generation and a preference for gas over coal in electricity generation saw electricity emissions drop to their lowest level since 2000
- the residential gas price has decreased six percent over six months due to a big price cut from Genesis.

Energy Minister Gerry Brownlee was allegedly hailing a shift from coal to geothermal electricity generation as a sign that the market can deliver on climate change.

### ***What is in the Wind for Wind***

Although we are riding a wave of geothermal developments and geothermal generation has risen to around 13% of total generation, the thought occurred to Colin Harvey – how is this growth related to the relatively low rate of economic

growth. In addition, with the Tararua wind farm performing so well (45% performance reported) where exactly is wind? Colin posed 3 questions on this:

1. What is our current demand growth pattern?

Based on MED data, demand/generation growth is currently pretty flat (since 2006)

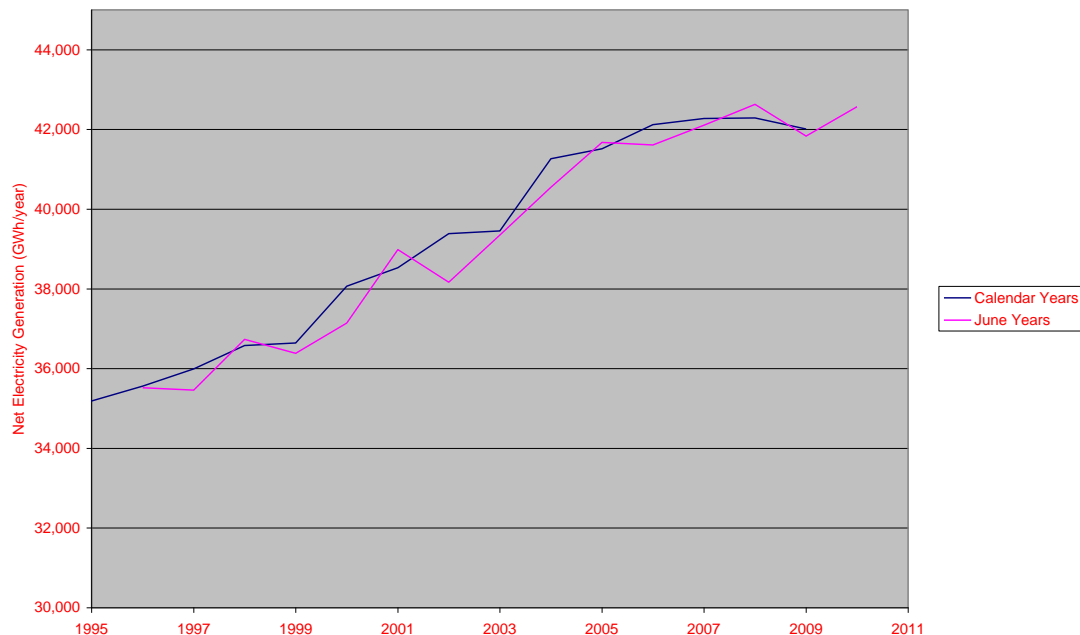


Figure 1 Energy demand curves (MED)

2. How much wind is installed and operating?

Installed wind generation is 498 MWe which generates for between 30 and 45% of the time (efficiencies vary from site to site) but currently accounts for close to 5% of our total generation.

3. What has been consented and what is planned?

By a quick check of the wind energy website plus a review of power company reports

- Another 8 wind farms (total up to 700 MWe) are currently consented but not under construction (bold in Table 1). Comments from the power companies for some consented sites are that construction is awaiting favourable economic conditions
- A further 1800 MWe has been applied for and is either under appeal or has been called in. For example, the Environment Court has been ordered by the High Court to reconsider its decision to cancel resource consents for Meridian Energy's \$2 billion, 176-turbine wind farm on the Lammermoor Range.

Site	Generator	Capacity MWe	Location	RMA status	Notified
<a href="#">Awhitu</a>	Genesis	18	Franklin	Consented after appeal but on hold	Apr-04
<a href="#">Titiokura</a>	Unison/Roaring 40s	Up to 48	Hastings	Consented after appeal	Apr-05
<a href="#">Hawkes Bay</a>	Hawkes Bay Wind Farm	Up to 225	Hastings	Consented after appeal	May-05
<a href="#">Taumatototara</a>	Ventus	Up to 54	Waikato	Consented but on hold	
<a href="#">Kaiwera Downs</a>	TrustPower	Up to 240	Gore	Consented after appeal	Nov-07
<a href="#">Taharoa</a>	Taharoa C and PowerCoast	up to 54	Kawhia	Consented after appeal	Dec-05
<a href="#">Project Central Wind</a>	Meridian	Up to 130	Ruapehu & Rangitikei	Consented after appeal	Jul-08
<a href="#">Mt Stuart</a>	Pioneer Generation	Up to 6	Clutha	Consented after appeal	Dec-08
<a href="#">Long Gully</a>	Windflow	Up to 12.5	Wellington	Consented	May-09
<a href="#">Project Hayes</a>	Meridian	Up to 630	Central Otago	Appealed	Nov-06
<a href="#">Mill Creek</a>	Meridian	Up to 71	Wellington	Consented but appealed	Apr-08
<a href="#">Mt Cass</a>	MainPower	Up to 69	Hurunui	Declined but appealed	Jun-08
<a href="#">Waitahora</a>	Contact Energy	Up to 177	Sth Hawkes Bay	Declined but appealed	Sep-08
<a href="#">Hauauru ma raki</a>	Contact Energy	Up to 540	Waikato	Called in	Sep-08
<a href="#">Tunitea</a>	Mighty River Power	Up to 360	Manawatu	Called in	Jan-09
TOTAL	PROJECTED	?? 2500 MWe			

Table 1 Current Situation of Wind Farm Consents and under Appeal

## NZ Clean Energy Centre



The site of the Centre is at the intersection of the new State Highway 1 bypass to Taupo (opening in 3 weeks) and State Highway 5 to Napier and is therefore highly visible. The centre is due to open in March 2011.

The Centre will house a cluster of clean energy businesses – to date NZCEC has commitments from companies in the geothermal, biomass and solar sectors – and will also be a national focal point for the demonstration of clean energy solutions. Those demonstrating solutions at the centre need not be tenants.

Technology commitments to date are as follows:

- 2 geothermal boiler tube heat exchangers
- 2 and possibly 3 small scale wind turbines
- 2 solar photovoltaic solutions
- 3 solar thermal solutions
- NZ developed inverter solutions



Each system generating heat or electricity will be metered, so that visitors to the building can see real time as well as historical performance. More details at: <http://www.nzcleanenergycentre.co.nz/>

### **Taupo hospital makes switch to geothermal supply**

Taupo's deteriorating air quality and the contribution made by the hospital's coal fired boilers drove Lakes District Health Board (LDHB) to inquire about the possibility of geothermal back in 2004. Ian Thain offered to study the opportunity, at that time on behalf of Lake Taupo Development Company, the parent company of the New Zealand Clean Energy Centre (NZCEC).

The AC Baths had recently installed a Schlumberger pump and were reporting good service, so a project was conceived around this technology. Geophysics indicated that the water temperature was 115 degrees at the mid aquifer depth of 100-120 metres. The project was designed around getting 100 degree fluids from this mid aquifer and reinjecting them into the upper aquifer at 80 degrees – the same temperature as existing water in that aquifer.

The results of the study were positive, however a decision was made to conduct an expanded study using grant funding from EECA, to investigate a scheme which would also include Liston Heights Rest Home and Taupo Intermediate. NZCEC invited Energy for Industry (EFI) to review the financial possibility of being a heat supplier to the three facilities, however the economics did not stack up. Nonetheless, NZCEC gained resource consent for the entire scheme. The resource consent application was not challenged by users of the shallow aquifer on the grounds that the project would actually have a positive impact on the pressure of the aquifer they were using.

Ultimately, LDHB decided to proceed with a standalone project, which went live on August 12, 2010. The new geothermal system is delivering 200-300 kilowatts, replacing 320 tonnes of coal per year.



Benefits now being enjoyed by LDHB include reduced fuel costs, reduced maintenance & operating costs and reduced carbon emissions. The total cost of the

project was \$290,000 and the payoff is less than five years. Further work is now being done to try and add Taupo Intermediate School to the scheme, since they too are using coal and the hospital is requiring less fluid extraction than anticipated to meet their heating load.

### **Australia and New Zealand Square Kilometre Array project (anzSKA)**

Vastly more sensitive than the world's best existing radio telescopes, the Square Kilometre Array (SKA) will be one of the largest and most ambitious international science projects ever devised, the total build funding is estimated at around NZ\$3.1B. It will help answer fundamental questions about the evolution of the universe.

Australia and New Zealand (in a joint bid) have been shortlisted by the international science community as one of two potential locations for the SKA, the other being in South Africa.

The Australian Government, New Zealand Government, the State of Western Australia and Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO), are working together to maximise participation in the SKA by Australia and New Zealand companies. They are establishing a candidate core site in Western Australia and building the Australian SKA Pathfinder (ASKAP). NZTE is assisting a steering group of New Zealand firms, the New Zealand SKA Industry Consortium (NZSKAIC), which is exploring capability New Zealand may have to offer that would strengthen the A/NZ bid, and growth opportunities in New Zealand.

Several Australian and New Zealand universities are also actively engaged in SKA related research activities. Other international partners include the USA, Canada, South Africa, India and a number of European countries.

On 9 June 2010 the Australian Government committed \$47.3 million to develop sustainable energy solutions for the SKA. Two key pieces of infrastructure being built to support the SKA program will now have full-scale, clean energy generation systems.

- The Pawsey High-Performance Computing Centre in Kensington, Perth, will now use hot sedimentary aquifers to provide cooling and ventilation in the largest direct heat geothermal demonstrator in Australia at 10 MWth; and
- The Murchison Radio-astronomy Observatory, the Australia-New Zealand candidate core site for the SKA, will now use a full scale solar/storage/diesel energy generation system.

This investment has the potential to cut energy costs by \$5 million per year, and reduce Australia's carbon emissions by 12,000 tonnes per year - the equivalent of taking 6,000 cars off the road.

With a geothermal component included in the scope, it is now up to New Zealand and Australian companies to register their interest. The joint Australia/New Zealand SKA web site is [www.ska.gov.au](http://www.ska.gov.au), which includes, on the Industry page, a reference to the Australia/NZ SKA Industry Capability Directory "ProjectConnect"; New Zealand



firms can register interest at <http://www.skacapabilities.com.au>. Some further information on the SKA can be found on the NZ Industry Capability Network's SKA Project page: <http://www.icn.govt.nz//Projects/Square-Kilometre-Array/>

At present, the approach for registering SKA Industry Capability in Australia and New Zealand is in a transition phase; we understand next steps will lead to a consolidation on AusTender.

### **New geothermal plan for Rotorua**

Bay of Plenty Regional Council and Rotorua District Council are working together to formulate how to allocate Rotorua's geothermal resources following a joint workshop. The two councils are collaborating - and working with neighbouring regional council Environment Waikato - to look at the best possible gains to be made using the area's geothermal energy. The workshop was also convened to brief Rotorua's Elected Members on major issues to be addressed by the next Bay of Plenty Regional Policy Statement, and get an overview of future directions for geothermal use which is due for public release later this year. More [here](#).

### **Waikato Regional Council adopts new Regional Policy Statement**

On 26 August 2010 Environment Waikato adopted the proposed Waikato Regional Policy Statement (RPS), a far-reaching planning tool that enables the use of natural resources, such as water and land, and allows for the development of roads, infrastructure and buildings in ways that maintain a healthy environment.

Councillors voted 10 to 2 to adopt the proposed RPS for formal notification on 3 November. The delay in notification allows for regional boundary changes that come into effect on 1 November as part of the creation of the new Auckland Council.

In the meantime, the [draft text of the RPS](#) is available in the agenda for the Policy Committee meeting of 11 August. The agenda for the 26 August meeting includes the [draft text of the S32 analysis](#). The official text of both documents will be available on the website on 3 November 2010, as will the submission form. Submissions on the proposed RPS will close **28 February 2011**.

The Geothermal section of the operative Waikato Regional Policy Statement has been reviewed in recent years and became operative on 21 December 2007, following resolution of all appeals to the Environment Court. Because of this recent review, no change is proposed to the tone and intent of the geothermal section during the current review.

Changes in formatting are made to ensure format consistency with the rest of the Proposed Regional Policy Statement. Objectives, policies and implementation methods are rearranged to ensure consistency with good practice in writing policy documents. There is now only one objective, the intent of which covers the wording of all the previous objectives. The intent of the remaining objectives has been captured in reworded policies. Duplication has been removed by joining together

some policies and methods and rearranging others. Some operative policies are more properly couched as implementation methods, so they have been reworded as such in the current review.

The Resource Management Amendment Act 2005 requires district plans to give effect to regional policy statements. The Environment Court decision on the operative geothermal section takes that into account, but since the policy was made operative greater understanding of how to appropriately implement that change has developed. In light of this, district plans are given greater responsibilities in the new Regional Policy Statement. Under the Resource Management Act (RMA), the RPS is required to identify the significant resource management issues for the Waikato region and set out how the regional community will manage resources such as air, biodiversity, coastal environments, freshwater, geothermal resources, landscapes, land and soils in ways that provide for the present without compromising the ability of future generations to provide for their own needs.

The council instructed staff to continue working closely with local councils and stakeholders on any yet-to-be resolved issues with the proposed RPS.

The Bay of Plenty Regional Council draft RPS has also been approved by their Council and will be notified on 3 November. Submissions will close on the earlier date of 8 February. The geothermal section seeks to align more closely with the Waikato RPS.

### **Nga Awa Purua takes out Energy Excellence Award**

The Nga Awa Purua Geothermal Power Station, a joint venture between Mighty River Power and the Tauhara North No.2 Trust, was named Project of the Year at the early September and inaugural Deloitte Energy Excellence Awards. Completed in May 2010, Nga Awa Purua is the largest plant of its type in the world. The project used leading edge geothermal technology and its innovative commercial approach has ensured that both partners gain maximum value from the completed power station.

### **Postgraduate Certificate in Geothermal Energy Technology 2010**

Students from the University of Auckland 2010 Post Graduate Certificate in Geothermal Energy Technology recently returned from the second of the two week long field trips undertaken as part of the course.

Geothermal companies make a huge contribution to the success of these field trips by providing lectures, lecture facilities, staff, and access to steamfields for data collection and interpretation exercises. The field trips are lead by Dr Sadiq Zarrouk and Dr Juliet Newson, who would like to thank all those in the geothermal industry for their support.

This year there are 16 students, 14 of whom are enrolled for the entire one-semester course, with the others here to complete the course after attending the first section last year. Students of 2010 are from Australia, Canada, Fiji, Indonesia, New Zealand,

the Philippines, and PNG. Graduates from the 2009 PGCertGeothermTech are now working for Contact Energy, Mighty River Power, GNS Science, and SKM.



PGCertGeotherm 2010 students and staff enjoying the rain at Te Kopia. Photo taken by Briony Jones

## International News

### UK launches a GBP 1 million geothermal fund

The Deep Geothermal Energy Fund, administered by the UK's Department of Energy and Climate Change (DECC), will help companies carry out exploratory work needed to find viable sites for this technology. Deep geothermal energy uses the natural heat found kilometres underground to produce renewable, non-intermittent electricity and heat at the surface. Energy from deep geothermal would strengthen and diversify the UK's energy mix, and would not depend on imported fuels. Chris Huhne, Secretary of State for Energy and Climate Change said, 'Deep geothermal energy is a real hot prospect as we dig deeper for new technologies that cut carbon emissions and provide home-grown power. *'Geothermal power from the South West alone could provide up to two per cent of the UK's electricity needs'*' Offering this funding give's UK-based innovators a chance to get their projects off the ground and into the UK's energy mix.

### US Department of Energy awards \$20m to 'non-conventional' geothermal projects

The US Department of Energy (DOE) has awarded \$20m in grants to seven 'non-conventional' geothermal energy projects. The grants are intended to demonstrate the technical and economic feasibility of geothermal energy technologies in three research areas: low temperature fluids, highly pressurised geothermal fluids and geothermal fluids recovered from oil and gas wells. The DOE said it hopes the research will bring down the high initial costs of geothermal development and supply

important costing and engineering information to developers. 'These innovative projects have the potential to expand the use of geothermal energy to more areas around the country,' said Energy Secretary Steven Chu. Awards as follows:

- Louisiana Geothermal was awarded \$5m to investigate the potential of highly pressurised geothermal resources in southern Louisiana and the northern Gulf of Mexico, which may also contain dissolved natural gas.
- NRG Energy was also given \$5m for research into highly pressurised geothermal resources.
- Oski Energy, Modoc Contracting Company and GreenFire Energy were awarded \$2m each, and Energent was awarded \$1.2m, to look at low temperature geothermal resources, which are not hot enough for conventional flash steam generation but could be exploited using a working fluid with a lower boiling point.
- In addition, ElectraTherm was awarded \$982,000 to look at making use of the excess heat produced in oil and gas wells.

## Board Update

### ***Elections and Board Matters:***

#### ***• IGA Elections***

The New Zealand and WPRB nominees performed well in the IGA elections with only one member from Korea missing out. Congratulations to Colin Harvey, Juliet Newson and Paul Quinlivan who were all successfully voted on to the IGA Board. The results have just been notified in the latest IGA News.

The voting by the new 30 member Board for Executive positions will take place shortly.

In a related item, the NZGA Board also agreed to nominate Colin Harvey to the WPRB Forum, partly on the basis that he is an IGA Board member.

#### ***• NZGA Election Outcomes***

The Nominations Committee had received 6 nominations for the 6 available positions and recommended acceptance of all of the candidates. All 6 were accepted by the NZGA Board. Because the number of candidates matches vacancies there will be no need for an election. Congratulations to these volunteers who will start their duties from the Annual General Meeting (if not already on the Board). These people are:

- Paul Bixley
- Rick Smith
- Juliet Newson
- Warwick Kissling
- Andy Bloomer

- Peter Barnett

Note - the NZGA Board had previously agreed to temporarily coopt Rick Smith of PB Power to the Board until the AGM in November.

Now that we know the new members we can also extend our thanks to the following Board members who will retire from Board duties at the AGM. These are:

- John Burnell
- Phil Hutchings

The Board has valued the service of both of these people.

### • **NZGA Annual General Meeting**

The NZGA Annual General Meeting is set for 23 November 2010 at the GeoNZ Conference venue.

### **Recent Submissions:**

#### • ***International Partnership on Geothermal Technology***

The NZGA Board has recently written to Hon Dr Wayne Mapp, the Minister of Research Science and Technology indicating strong support for New Zealand joining the International Partnership on Geothermal Technology. Knowledge gained from this Government-Government partnership will help to keep New Zealand at the forefront of geothermal development.

#### • ***Climate Change Regulation Amendments***

NZGA made a submission covering minor changes to the CC Regulations, particularly affecting Wairakei. This was supportive of the intent but pushed for greater rigour in the wording and justification of changes. For details see [here](#). Time was also spent reviewing regulations around 2-phase sampling to see acceptability of GNS procedures.

#### • ***Draft NZ Energy Strategy and Energy Efficiency and Conservation Strategy***

NZGA also made a submission on the latest proposed NZES and NZEECS. This submission noted the favourable place given to geothermal energy but also noted the lack of substance in the current draft documents. For details see [here](#).

#### • ***Crown Minerals Act Review***

Crown Minerals Act Review. NZGA considered a submission on the Crown Minerals Act review but the Board agreed while it is grateful for the opportunity to comment, it does not see the need to make a submission at this time.

## **Major Events / Conferences:**

- **World Geothermal Congress 2015 Melbourne**

For those who don't know, New Zealand and Australia geothermal associations have jointly won a bid to host the next World Geothermal Congress in 2015, with the venue being in Melbourne but with field trips in New Zealand and Australia.

In recent months, effort was directed at finalising the agreement between the International Geothermal Association, New Zealand Geothermal Association, Australian Geothermal Energy Association and Australian Geothermal Energy Group (together this group is known as the Australia and New Zealand Geothermal Energy Associations or ANGEA). This agreement was jointly signed at the closing ceremony at WGC 2010. For New Zealand this was signed by Spence McClintock and witnessed by Alan Koziarski, who is the most senior NZTE trade representative in the region.

Efforts are now being directed towards the finalisation of other intra-organisational agreements, including an underwriting agreement. We are also in the process of establishing the Organising Committee which will have the task in coming months of developing the program and budget for the event, and is operating under the Vice-Chairmanship of Jim Lawless in the absence of an Australian Chairman. NZGA has nominated the following people to roles on this Committee: Brian Carey (field trips), Juliet Newson, Claude Bannwarth and Greg Bignall. We have also approached one or two other people to give an initial steer in setting up the budget and program. Brian White and Spence McClintock sit on an ANGEA Committee that gives overall direction to the event.

- **New Zealand Geothermal Workshop**

The New Zealand Geothermal Workshop will take place in Auckland 22 – 24 November 2010 as part of the wider GeoNZ 2010 conference. For details see [www.geonz2010.co.nz](http://www.geonz2010.co.nz). Please note that there is \$100 discount on registration fees for NZGA members.

The NZGA Board has agreed to provide direct sponsorship to GeoNZ 2010, and will look to provide further assistance in the form of industry update sessions and other input.

Note - there is no separate NZGA Conference this year; the GeoNZ Conference has the endorsement and support of the NZGA. If you are interested in New Zealand geothermal you should consider going.

The Conference has been scheduled to overlap with the New Zealand branch of the Australasian Institute of Mining and Metallurgy (AusIMM) and a special symposia on the Darfield earthquake is to be held.



This is a great time to be involved in geothermal - all the figures point to a booming geothermal industry in New Zealand just now so I encourage you to come along to and support the event.

### **Training / Vacancies Update:**

A NZGA Skills Action Plan will be posted on the NZGA web-site soon.

We note that several geothermal companies are recruiting currently many bringing in experience from overseas.



## Geothermal opportunities

SKM's geothermal capability is world renowned. Our experience covers over 115 geothermal sites in 26 countries, we have an unparalleled record of providing geothermal exploration and development services to clients worldwide. Our geothermal expertise covers; all scientific disciplines, drilling, reservoir, steamfield, power plant and transmission engineering.

We are currently recruiting for the following geothermal positions:

Senior Geothermal Scientists    Process Engineers    Mechanical Engineers  
 Project Managers    Reservoir Engineers    Drilling Engineers  
 Power Plant Engineers

Come and join our large team of geothermal scientists and engineers based in New Zealand, Australia, Chile and the UK. Whether you are looking for big project experience or a place you can build your career by working with the leaders of the industry, we have the clients, projects and people to give you what you want.

For more information on how you can join our highly regarded geothermal team, contact Lissa Carthew on: 0064 9 928 5813 or visit [www.skmconsulting.com/careers](http://www.skmconsulting.com/careers)

[www.skmconsulting.com](http://www.skmconsulting.com)



### **Action Plan:**

The New Zealand Geothermal Association seeks to assist and promote geothermal interests through a range of means that are put forward by its members and agreed by the Board. These actions are set out in an Action Plan developed on an annual basis. Current status of this Action Plan (Sept 2010) is shown below.

Action	Comments	Status
<b>HIGH PRIORITY</b>		
Government Lobbying and Raised Public Awareness	NZGA should meet with the new Minister of Energy to generally present a case (and allow a briefing by his officials specifically on geothermal energy). NZGA should continue to lobby for NZ membership in the International Partnership for Geothermal Technology to ensure NZ remains a force in geothermal science and technology	Ongoing prompts on IPGT
Submissions on Policy	NZGA will make relevant submissions in response to government consultation documents e.g. climate change regulations, etc	Submission made on MED Geothermal Barriers paper Submission on EBOP Regional Policy Statement Decision made not to submit on Crown Mineral Act review

Review of Training Requirements	Information and Education Subcommittee should meet to set its own terms with a view to high level direction for NZGA, and to develop broad industry training strategies. Training and currency of information is critical in an expanding industry with ongoing development. This applies to electricity generation, heat supply and heat pump applications. It covers tertiary and trades development.	
Skills Action Plan	Board and industry members are to review and revise the Action Plan included in the Skills Action Plan. Industry and government should be lobbied to support educational programs in geothermal engineering and science to address skills needs as highlighted in the report. As companies and consultancies seek to increase their human resources, hiring of off-shore talent should not stop government and industry from increasing support of programs that seek to raise home-grown talent.	Skills Action Plan discussed by Board 30 June. Juliet Newson has commenced a short update which is up for Board input and review
Development of an NZ standard for emissions testing	With the ETS about to be implemented this year, industry should ensure that current emissions testing procedures are formalised into a standard to enable continued use	Brian Carey, Spence McClintock, Paul Bixley and Tricia Scott have reviewed this and are of the opinion that the current GNS published procedures suffice.
<b>INTERMEDIATE PRIORITY</b>		
Website Update	The website will be continually updated to include latest studies and information. Some of the tasks below reflect current weaknesses in the website and NZGA's knowledge base. This is one of the principal means by which we educate the public and inform our own members.	Ongoing
Annual NZGA Seminar and the New Zealand Geothermal Workshop	These will be the premier national industry events for information dissemination and networking.	A decision has been made not to have a seminar this year because of WGC 2010, but to fully support the Workshop and to incorporate elements of the Seminar within the workshop, including company update presentations and NZGA Action Plan discussion.
World Geothermal Congress 2010	This is a premier geothermal conference	Over 60 NZ delegates attended. The Executive Officer provided a range of support roles
World Geothermal Congress 2015	NZGA should provide necessary support for the joint NZ/Aus World Geothermal Congress 2015	ANGEA/IGA agreement was signed at WGC2010 and review of other agreements continues.
Geothermal Short Courses	Short courses (normally crammed into a day), can give a broad overview of geothermal energy for consenting agencies, developers and other interested parties. This assists development directly. Policy and industry overview meetings are still required	Standard University of Auckland courses have been advertised and we will give encouragement for a 1 day short course at the Geothermal Workshop.
Skills and Services Register	A skills and services register has been developed by HERA to emphasise NZ capabilities and has been added to the NZGA website. This should be updated on a regular basis. It needs to be broadened to include more than manufacturing and engineering skills. Members of the Industry Capability Network NZ have a role in linking EPC contractors with local support services.	Underway by HERA with a goal of a full update by the time of the GeoNZ conference.
Geothermal Drilling Report	Continuing a suite of geothermal reports, a report will be prepared on geothermal drilling and well design outlining current practice, costs, differences between conventional fields and EGS developments, new areas of development and issues to be addressed by industry	Have asked MB Century to undertake this work.
Development Guideline Report	While large generators can handle their issues, there may be a large number of issues faced by small generators. This will provide a beginners guideline to geothermal development.	Have had initial discussion in East Harbour
Description of Major Geothermal Developments	This information, aimed at the public and those with a general geothermal interest, is of general interest	All major developers were approached with information requirements. Contact and MRP have committed to complete this.
Geothermal Heat Pump Studies	Heat pumps are now entering the New Zealand market. Initial indications are that, for large domestic loads (including water heating) and above, this option is competitive with other common heating options so could be a significant contributor to our national energy future. This new review should look at the value chain	GNS Science is reporting on Heat Pumps as part of their Low Enthalpy research program

Memorabilia and Industry Archive Facilitation	It is recognised that key information and equipment could be lost if an industry archive is not established. The NZGA should facilitate discussions to collect and preserve this pioneering material.	Initial discussions were held with Contact Energy on a temporary storage location
Comparisons Between Conventional and EGS Developments	New Zealand consultants will have a growing interest and involvement with EGS developments, but there are some key differences. These should be outlined on the NZGA website.	A draft of this is now being considered by the Board
Emissions Trading Scheme Information	Major geothermal industries will be subject to emissions trading scheme regulation and potential trading. This is a major change in the industry for which there may be little understanding. Some paragraphs are required on the NZGA website.	Brian Carey and Tricia Scott will progress this.

## **Membership:**

- **Individual Membership**

The NZGA currently has 292 individual members. Currently, only 12 people have yet to pay their subscriptions (please do so soon).

- **Western Pacific Regional Branch membership**

The Board encourages members to consider the voluntary membership of the WPRB of the International Geothermal Association. This can be done by contacting Jim Lawless (JLawless@skm.co.nz). Currently there is a one-off joining fee of only \$NZ7.

- **Life Membership**

The Board acknowledges that there are many people who have made a significant contribution to the geothermal industry. One avenue of recognition that the Board can give is through the awarding of a limited number of Life (or Honorary) Memberships. The Board has recently agreed on the criteria to be used to determine eligibility for these Life Memberships, so now is able to consider nominations. Please note - the number of Honorary Memberships is limited. There are only two spaces and we can only nominate one person per year.

- **Corporate and Institutional Membership**

The latest drive for corporate and institutional membership is under way under the new tiered membership scheme. This still is the principle means by which funds are raised for the ongoing work of the Association. We now show the members against their membership level on the NZGA website (see <http://www.nzgeothermal.org.nz/about.html>) and include links to their respective websites. In coming weeks we will also add short profiles on each of these companies. We are still well below our target. If your company is involved in the geothermal industry, and so benefits from the long term advocacy and coordination of the NZGA, then we would encourage you to contact the Executive Officer or other Board Members about your support role.

The NZGA would like to thank all of its members for their ongoing support of this industry.

Brian White  
Executive Officer

Spence McClintock  
President

Colin Harvey  
Past President