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## **Newsletter October 2009**

It seems unreal that another four months has passed since the last newsletter. The busier life gets, the quicker it passes. Our newsletters seem to be getting longer and longer but we believe this is a reflection of the increased activity in a wide range of interest areas.

### **Board Activities**

The NZGA Board continues to be busy in many areas. Our most recent meeting was held after the very well attended NZGA Seminar in mid-August at the GNS Science offices in Taupo.

### **New Board Members and Farewell to Retiring Board Members**

As a result of Board nominations process completed in August we now have four new Board Members who will start their three year terms after the AGM in November.

We congratulate and welcome the new Board Members who are:  
Gina Rangi, Chris Mann, Brian Carey and Tricia Scott.

As detailed in our last newsletter, Colin Harvey, Pat Brown, Judith Magyari and Greg Raasch will retire at the end of this year. Jim Lawless will also relinquish his Past President role while Colin Harvey will now move into this position. Jim will continue to attend Board meetings in an ex-officio capacity in his IGA liaison role.

A subcommittee has been working to appoint the new executive which will include the roles of president, treasurer and secretary.

### **Financial**

At the recent Board Meeting, Pat Brown presented a Treasurers report that showed current bank accounts were down to \$2,500 in the face of high expenditure from the Executive Officer and late receipt of income from sponsors and conference profits. While a "bit dismal", Pat did not think this was anything to lose sleep over. Further significant income was expected (of the order of \$30,000) which should see accounts in the black at the end of the year. It is a concern however that costs have increased significantly over the past twelve months due to increasing interest and activity in the geothermal sector from both Government and commercial interests. Alternative ways may be needed to raise funds.

An option under consideration is to structure the sponsorship levels to attract more support. Another option here is to charge a management fee on top of all contracts undertaken through the NZGA. Alternatively there could be specific projects for which companies may perhaps take on the costs.

Brian will talk with East Harbour management to discuss alternative funding ideas used by other Associations with a view to improving profitability and sustainability. Pat Brown, Colin Harvey and Spence McClintock have agreed to undertake a review of this increased workload on the Executive Officer and his support staff. Brian is operating with a budget that reflects the current funds and he is currently finding it difficult to cover all bases.

## **NZGA Seminar**

The Board and Executive Officer wish to express their thanks to Paul Bixley and Brian Carey for an excellent Seminar, and for Paul's input and efforts to make it the success that it was. They would also like to thank all of the presenters who volunteered time and useful insights for those who were present. About 70 people had enrolled for the Seminar which was held at the Bayview Wairakei Resort on 19<sup>th</sup> August. Paul enthused a very broad representation from across industry, the regulators, the consultants and researchers to cover both above surface and subsurface monitoring for reservoir sustainability. Brian Carey had done an excellent job at setting the scene for a broad-based group of attendees in terms of his introduction. It was recognised that there was difficulty in pitching the Seminar content across the broad levels of knowledge present, but it was done really well. 40 people stayed for the dinner at which Jim McLeod spoke as the after dinner guest. Thanks were also expressed to Kay Elliston of GNS Science for all of her administrative work.

## **Industry Archive**

New Zealand has been a pioneer of geothermal development. In the distant past we have had government-run visitor centres with some collected information and equipment, but there is no central archive or museum. Some of us are of the view that there is a valuable resource that needs to be collected and made accessible to the public. We are privileged to have some of the early pioneers of geothermal development still with us, and capturing some of their impressions and knowledge will be useful and interesting.

Last year Contact Energy hosted and catalysed a range of functions related to a celebration of 50 years of Wairakei operations. This year, Brian White has had informal discussions with Contact to see if more can be done on a long term basis. However, collections of equipment, information or interviews are an industry-wide issue for which wider solutions will be required. We would be interested in suggestions.

## **Membership**

Our numbers continue to climb with the current total of 270 members. We still believe that some companies are growing in staff numbers which may not be translating into NZGA membership but the continued positive response is indeed encouraging. Can you please circulate this newsletter to any non-members you feel would benefit by joining us.

## **The August 2009 NZGA Board meeting**

Discussions and outcomes of the August Board Meeting included:

IEA Lobbying for Geothermal with IPCC. Colin and Jim provided input to the IEA Geothermal Annex for the International Panel on Climate Change at their Madrid meeting.

Chile Geothermal Interests. New Zealand is part of a "P4" agreement including the four countries of Brunei, Chile, Singapore and New Zealand (with Australia and the US as possible future members). There is strong interest in providing support to Chile through GNS Science and the University of Auckland for environmental issues related to geothermal development.

International Partnership for Geothermal Technology. The IPGT is a geothermal partnership with roots in the MIT Geothermal report, currently including US, Iceland and Australia, and for which membership is at government-government level. Colin has been talking with MoRST while Brian has made contact with MED about NZ joining this. Brian and Colin met jointly with representatives of MoRST and MED in September to progress this proposal. Colin expressed the view that the IPGT was already active and there would be information benefits over and above those associated with the IEA Geothermal Annex that would outweigh the additional reporting requirements of the Partnership. MoRST is considering supporting this, while MED has agreed that MoRST should take the lead because of the Partnership's strong R&D focus

MED (Roger Fairclough) Geothermal Tour. Several Board members were visited by Roger Fairclough and Alice Hume of MED. This has been part of both a networking exercise and wider geothermal industry fact-finding on behalf of government.

NZGA Business Case. Following from the Treasurers report, emphasis now needs to be placed on the development of an NZGA Business Case with **actions**, feeding intended **outcomes**, with clearly identified **benefits** to potential or current members. It was commented that if the business case was clear then generators might be prepared to increase their previous support.

Agreement on AGM date of 17 November. The NZGA AGM is set for the afternoon of 17 November 2009 in association with the NZ Geothermal Workshop in Rotorua.

IGA Affiliation Agreement. A new IGA affiliation agreement has been offered by IGA. Wording is similar to the current agreement but the annual rate jumps from US\$1000 per year to US\$10/person/year. Shortly we will have 290 members, so ignoring exchange rate movements, this represents a trebling in costs to NZGA. Colin, who is also Treasurer of IGA pointed out that this brought New Zealand in line with the rate for other developed countries.

IGA Issues. IGA currently operates on a meagre budget of around US\$40k/year, but has been pushing for a World Bank contract that could push it's total budget up significantly. However, this was still under consideration by the World Bank. Any such contracts would be initiated through a newly established IGA service company. The IGA Secretariat will shortly move from Iceland to be hosted in Germany. Colin pointed out that there have been benefits flowing to the host nation from closer liaisons with agencies such as the World Bank.

WGC 2010 Issues. Brian reported there had been very limited interest in an NZ Inc booth. However, there was clear interest in a function such as a wine and cheese evening. Through government there is strong interest in an NZ Inc approach to marketing so effort could be directed into an NZ function. This could be via the casual approach used for Turkey, coordinated buying or possibly a function organised in connection with the NZ Embassy (they bring in the wine). Colin is to follow up NZ Inc options on behalf of NZGA, including with Graham Smeaton of NZTE.

Future Options for Action Plan Discussion. The NZGA develops an Action Plan on an annual basis in discussion with its members to set pro-active direction for the Association. In the past this has been done in an NZGA Seminar which follows the NZ Geothermal Workshop which have operated as combined events, though not this year. The Board agreed that there would be no future option to discuss the Action Plan this year, with no real opportunity at the Workshop. Hence the best option was for Brian White to generally solicit input by email from members. Watch out for this email.

All NZGA members should keep in mind that this is their opportunity to influence areas for Association attention. The Association has limited funds but it can undertake studies or catalyse change. Suggestions will be considered by the Board before a new Action Plan is advised next year. **We really do want your input.**

The following table shows the status of the current Action Plan:

Action	Comments	Status
<b>HIGH PRIORITY</b>		
Government Lobbying and Raised Public Awareness	There is now a new Government. 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)	Meetings held with Minister and various officials
Submissions on Policy	NZGA will make relevant submissions in response to government consultation documents e.g. NPS on renewable electricity, climate change regulations, etc	Continued discussions and submissions on Climate Change regulations, input to Transpower annual planning report
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.	Subcommittee has met, Skills Action Plan report has been completed by Jane Brotheridge
<b>INTERMEDIATE PRIORITY</b>		
Website Update	The website will be transferred to the Royal Society 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.	Continuing action, site transferred to RSNZ
Annual NZGA Seminar and the New Zealand Geothermal Workshop	These will be the premier industry events for information dissemination and networking.	NZGA Seminar held on 19 August (measurements theme) at Wairakei. The Geothermal Workshop will be at the Rotorua Convention Centre 16-18 November (Geothermal and the Market Place)
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. 3 courses were held in 2008 and a similar number is expected in 2009	See NZGA Seminar above. An acoustic borehole image interpretation course was held on 20 August at Wairakei. A 1 day short course will be held around the time of 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
Personnel Capability Report	This is intended as an update on a industry report prepared in 2005.	Complete (as part of Skills report above by Jane Brotheridge with EECA funding)
Geothermal Drilling Review	NZ geothermal drilling should be reviewed. The review should include: the Code of Drilling Practice, certification of drillers, industry resources, drilling training programmes (possibly including NZ and Aus crews)	Hagen Hole has been invited to undertake a scoping study on drilling regulation and legislation as an initial step
Incentives for Geothermal	In terms of policies to incentivise development, there is a need to consider the specific New Zealand context to help shape government policy in this area, including a look behind the reasons for types of policies. Additional incentives may be required to meet renewables targets. Barriers to development should also be reviewed.	Eric Martinot has provided recent papers on international policies to encourage investment in renewables and a New Zealand Seminar has been advertised around Wellington members. <a href="http://www.martinot.info/re2005.htm">http://www.martinot.info/re2005.htm</a>
Small Generator Issues	While large generators can handle their issues, there may be a large number of issues faced by small generators. The various hurdles should be reviewed to outline solutions or to identify barriers to officials with a view to regulatory changes.	Not actioned by NZGA – no funding. However, MED staff are looking at these issues directly as part of a wider review of geothermal energy in New Zealand.
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.	Complete (report by Beca with EECA funding)
Assessment of Direct Heat	Baseline data is now available. Future requirements are for ongoing monitoring of changes. This should be	Complete (an East Harbour report with EECA funding).

Usage	updated before the 2010 WGC conference and associated country update	
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Status of Cost of Geothermal Report. SKM has been working on a report covering the cost of geothermal electricity generation for several years. This was an Action Plan item and forms part of a suite of reports prepared on the major sectors of New Zealand geothermal development i.e. electricity generation, direct use and heat pump applications. This initially included strong guidance from various Board and industry members to ensure developed costs closely aligned with industry experience. The project stalled for a period, largely in connection with financial modelling.

Paul Quinlivan reported that there had been a further review of the model and associated corrections had been made. This now left large high temperature projects in the range 6 – 8 c/kWh, while smaller lower temperature projects were more expensive. These costs were generally in line with industry views, and were in 2007 dollars so do not carry implications of being exactly current. The Board approved Paul finishing this report as quickly as possible (he estimated 1 or 2 days of actual work), with this to be added to the NZGA website.

The Skills Report. The Skills report has indicated that in terms of personnel, the industry is either about right in size or needs to expand to be able to handle the foreseen workload i.e. the current situation is sustainable or nearly sustainable from a personnel perspective. However, with many specialists approaching retirement, succession is still an issue. The Board does intend to revisit the Skills Action Plan at the end of the report in the near future. The report can be found on the NZGA website at:

[http://www.nzgeothermal.org.nz/Publications/Whats%20New/Skills%20issues%20in%20the%20Geothermal%20Industry\\_2009\\_FINAL.PDF](http://www.nzgeothermal.org.nz/Publications/Whats%20New/Skills%20issues%20in%20the%20Geothermal%20Industry_2009_FINAL.PDF)

Note that this report brings together and completes two Action Plan items, and has been completed by Jane Brotheridge with EECA funding. The Board thanked Juliet Newson for managing the Skills contract. The Skills contract had provided a wide view on training requirements and opportunities. Juliet is developing thoughts around the need for alignment of training by industry with NZQA accreditation.

Direct Heat Use Update. A further Action Plan item related to an update on geothermal direct heat use with a view to this feeding in to the World Geothermal Congress New Zealand Country Update. EECA funded this study undertaken directly by Brian White.

The study highlighted ongoing growth in direct use of geothermal energy in what has been a fairly steady growth path over the last 50 years. It appears that further significant growth will occur, and especially at Kawerau over the coming year as the SCA mill also looks to displace its fossil fuelled heat supply with a geothermal steam supply from NTGA. The report can be found on the NZGA website at:

<http://www.nzgeothermal.org.nz/Publications/Whats%20New/Updated%20Direct%20Heat%20Report.pdf>

Geothermal Heat Pump Report. Another Action Plan item was the completion of a report on geothermal heat pumps. This was also completed with EECA funding. The Association notes that there has been growth in this market sector with several companies now actively involved in this infant industry. It can be expected that several NZ-specific reports will be completed in the next few years. The report can be found at:

<http://www.nzgeothermal.org.nz/Publications/Whats%20New/NZ1-1922935-Geothermal%20Heat%20Pump%20Study%20Rev1%20.pdf>

The Climate Change Regulations Submission. The NZGA put in a strongly worded submission in relation to recent government consultation on Climate Change Regulations. Following this, Brian White has continued to work constructively with officials at MfE and their advisors to ensure regulations will be in reasonable shape when required. There has been further consultation on default emissions factors and a threshold value to avoid capture of minor direct use applications through the regulations.

For the principal submission see:

<http://www.nzgeothermal.org.nz/Publications/Whats%20New/Submission%20on%20Climate%20Change%20Draft%20Regulations%202009%20Fin.pdf>

At the Board meeting, Brian White noted the timely suggestion from Ian Thain that industry should look at converting current practice in terms of fluid sampling into an NZ standard so alternative sampling methodologies will not have to be adopted. This is something that will have to be led by the developers working with GNS, and is now in their court.

NZGA Display Stand. The Board has invested in a display stand which was completed and in use at the Seminar.

Nominations for Life Membership. The criteria for selection are currently under review by a Board subcommittee.

WGC 2015. Brian, Colin and Jim have had further discussions with the Australian geothermal associations and now await a decision by the IGA Board on whether or not the WGC 2015 will be held in Melbourne with field trips in New Zealand and Australia.



### **NZGA Annual General Meeting (3.30 pm 17<sup>th</sup> Nov 2009 at the Rotorua Convention Centre)**

Please make a diary note to attend this AGM in Rotorua. It is being held in conjunction with the 31<sup>st</sup> New Zealand Geothermal Workshop.

### **31<sup>st</sup> New Zealand Geothermal Workshop 16<sup>th</sup>-18<sup>th</sup> November, Rotorua Convention Centre)**

This November event should already be in your diary and should be very successful and worthwhile. The University of Auckland will be considering holding short courses again in conjunction with the Workshop.

Geologically young New Zealand is endowed with heat resources that have been utilized for geothermal energy for five decades. A new phase of investment and interest in geothermal heat for electricity generation and direct use in this country has paralleled exploration and R&D in other places worldwide, both in high and low enthalpy systems, and in systems where naturally permeable fracture systems require enhancement. This growing and complex market for geothermal is the theme for this year's New Zealand Geothermal Workshop, 16-18 November, 2009. The meeting will focus on those factors that drive investment and interest in Geothermal energy, R&D, and training. The meeting will also provide a venue for presentation and discussion of all aspects of geothermal geoscience and engineering for both natural and enhanced thermal systems. You are invited to join the large and vibrant Geothermal community at this annual meeting, this year in the City of Rotorua.

Please click on this web-site for more information: <http://www.geothermal.org.nz>



## Geothermal Courses at the University of Auckland

We have received the following update from Juliet Newson, Course Organiser and Lecturer, Geothermal Program, Department of Engineering Science, University of Auckland:

The 2009 Post Graduate Certificate in Geothermal Energy Technology at the University of Auckland is up and running (we are 8 weeks into the 17 week course). We have 26 students, 20 of whom are enrolled for the entire one-semester course, with the others attending for selected papers. We have students from Australia (6), Chile (1), Germany (3), Iran (1), Ireland (1), Kenya (2), New Zealand (7), the Philippines (3), PNG (2), and Switzerland (1).



2009 Post Graduate Certificate in Geothermal students at Tohia Ote Rangi Marae. There have been two field trips, both six days long, where the students have learnt about New Zealand's natural geothermal systems, and also about the many aspects of geothermal energy utilization that can be seen in the Central North Island. Geothermal companies in the area make a huge contribution to the success of these field trips; in particular we thank Contact Energy, MB Century, the Tuaropaki Trust, GNS Wairakei, the A8D Trust, and MRP for the time they give to helping the students learn about geothermal.

In addition to the field work there have been many interesting lectures from local geothermal experts. In particular we would like to acknowledge SKM who donate 14 hours of lectures encapsulating the knowledge and experience of senior staff.

### **International Geothermal Association and Western Pacific Regional Branch** (from Jim Lawless)

The major WPRB activity recently has been to organise a regional conference and seminar in Chengdu, China, on low temperature and unconventional electricity generation from geothermal. Paul Quinlivan of SKM was one of the three lecturers. It was well attended though with a lower international turn out than the previous WPRB seminars. See Jim Lawless if you want a copy of the material presented.

It is not yet clear what the main WPRB activity for 2010 will be as yet. One suggestion is a "masterclass" rather than a teaching seminar, on the topic of resource estimation, to be held in the Philippines. Any other suggestions and ESPECIALLY volunteers are welcome!

Both IGA and WPRB Boards will be up for re-election next year and nominations for possible NZ representatives to IGA are open now.

IGA is still desperately soliciting funds for fellowships to allow geothermalists from less developed countries to attend WGC2010. The response so far has been very low compared to previous congresses. If you can help even with a small donation, please contact Jim Lawless or Colin Harvey or visit this website: <http://iga.igg.cnr.it/WGCBali2010/>

The other big issue for IGA will be the decision on the venues for WGC2015. The joint NZ-Australian bid still looks to be well up in the ratings. Although there will be no official announcement until April 2010, the successful candidate will be notified after the next IGA Board meeting at the end of October which is not far away. Fingers crossed!

## **Sponsorship**

At this time we would like to thank the NZGA Corporate Members and sponsors for the 2009 financial year. These included: Contact Energy, Tuaropaki Power Company, Mighty River Power, Parsons Brinckerhoff, GNS Science, MB Century, Sinclair Knight Merz, Meridian Energy, Bay of Plenty Electricity, Institute of Earth Science and Engineering, Genesis Energy, AECOM, Halliburton, Ngati Tuwharetoa Geothermal Assets, Tiger Energy Services, Pukeroa Oruawhata Trust, Rotoma No 1 Incorporation, Weatherford, Hot Rock Ltd, and Geothermal Development Associates. Other parties are still considering sponsorship and Brian White is still actively approaching companies.

## **Personal Note from Colin Harvey**

In closing, this will be my final Newsletter. I have now had the President role for five years and I have found the role highly enjoyable with the highlight being the support and friendship I have had from all the Board members.

It was six years ago that Jim Lawless first proposed that the NZGA employ an executive officer and SKM led the way in offering a sponsorship of \$5,000. This leadership was followed by support from Contact Energy, Mighty River Power, Tuaropaki Power Company, Century Resources, GNS Science, PB Power and IRL. This support continues today and it has enabled the NZGA to grow in many ways.

Brian White was appointed as Executive Officer, has always been a delight to work with and still carries out a most effective role today.

Our membership numbers continue to climb. Five years ago our membership was pretty static at around 100 members. Today we have almost 300 members.

Five years ago geothermal generation was just over 400 MWe providing about 6% of New Zealand's generation. Today the installed generation is around 600 MWe and provides over 10% of total generation. Plans are underway for another 400 MWe over the next 4 years and more beyond.

We therefore see the NZ Geothermal Industry in extremely good heart but there is still need for good communication, good publicity and close interaction with Government at both the national and local levels. We have always aimed to have an integrated involvement on our Board of generators, regulators, consultants, service providers and researchers. I am convinced that this very balanced approach is a major reason why the Association works so well. The involvement of Iwi in geothermal also continues to increase and will be even more significant in the future.

Sincere thanks to all the Board and to the members for their generous support over the past years.

Colin

Brian White and Colin Harvey  
October 2009