

New Zealand Geothermal Association (NZGA) News - 5 August 2013

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

President's Report

The NZGA flourishes because of your contribution. I am delighted you are reading this newsletter because it opens up to you contributions from your fellow NZGA members.

I welcome and appreciate your contribution to, and effort expended for NZGA. The future of NZGA lies in your active participation in the interest groups which the Board is actively fostering. I encourage you to get involved in your areas of interest and grow geothermal in the space you have interest. These newsletters will provide some insights, whilst getting involved will provide reward.

As I take up the role of President (as of the June 2013 Board Meeting) it is very appropriate to acknowledge and thank Spence McClintock for his terrific contribution and service as President over the last three and a half years. Really appreciated and thanks Spence. Spence moves to Past President and will continue to be available on and to the Board in that role. With Spence moving to Past President the position shuffle sees Colin Harvey relinquishing his Past President role. It is also appropriate to thank Colin for his efforts for you in the NZGA, having been on the Board now as a member, President and Past President for over 8 years. Thank you Colin.

As of the June Board meeting there are four new board members who take up board roles after the AGM. Welcome to Andrew Rae, Mark Green, John Burnell and Katherine Luketina having been accepted as Board members by the NZGA Nominating Committee without the need for a membership election as there were 4 nominees for 5 vacancies. Welcome and thanks for being available. I look forward to your contributions.

I commend this newsletter to you to catch up on what is occurring in geothermal energy in the NZGA space in New Zealand and internationally. Read on.

Brian Carey

President New Zealand Geothermal Association.

August 2013

WHAT'S IN THIS ISSUE?

- *Welcome*
- *WGCP 2015 Planning - UPDATE*
- *Lead Story*
- *Special Interest Groups*
- *Geothermal News*
- *EO and Board Update*
- *Events/Training; Industry Papers*
- *Membership*

Geothermal Regulations and NZS2403 Review Committee

The working committee met on 3 July and are scheduled to have a first draft of the revised NZS2403 completed by the end of August. At the present time MBIE is focussed on other issues and is likely to move on to a review of the Geothermal Regulations early in 2014. In advance of MBIE commencing this review, NZGA is planning to have their NZS2403 review completed together with a submission to MBIE on the geothermal industry perspective on the Regulations by the end of November.

World Geothermal Congress 2015 Planning - UPDATE

Barry Goldstein is now actively chairing the Organising Committee for WGC 2015. A joint Organising Committee/Steering Committee meeting was held at the Melbourne Convention and Exhibition Centre in July. The facilities there are impressive! Preparation for paper review is in hand and reviewers will be finalised by the end of the year. Key things to note:

- **Papers** - A call for papers is due soon.
- **Sponsorship** - A sponsorship list is being built up (so if you want your company name to have a high profile at this global event then contact the Executive Officer), and Arinex will start approaching potential major sponsors this month.
- **Fellowships and Courses** - Preparations are also being made for fellowships.
- **Short Courses and Field Trips** - Short courses and field trips are being finalised, though short courses will need a critical number to ensure they break even. New Zealand presence will be prominent, and Andy Blair at GNS Science will help to coordinate New Zealand activities.



LEAD STORY:

Professor Michael McWilliams, Chief of CSIRO's Earth Science and Resource Engineering Division, has been named as the new Chief Executive of GNS Science. Prof McWilliams will take up his role in September 2013. He succeeds Dr Alex Malahoff, who retired in December 2012.

As divisional Chief at Australia's national science agency for the past five years, Prof McWilliams leads a team of approximately 450 scientists and engineers engaged in research for exploration and production of mineral and energy resources. He is also Executive Manager of the Queensland Centre for Advanced Technologies, Australia's largest research and development precinct for the resources sector and associated advanced technology industries. Prior to that he was Director of the John de Laeter Centre of Isotope Research in Western Australia and Professor of Geophysics and Geological Science at Stanford University's School of Earth Sciences.



GNS Science Chair Tom Campbell said Prof McWilliams stood out from the large number of international and New Zealand candidates who applied for the leadership role at GNS Science. *"His distinguished career both as a scientist and a science administrator means he will be an asset to GNS Science and to New Zealand."* Mr Campbell said Prof McWilliams' areas of expertise were a very good match for the research and consultancy work undertaken by GNS Science.

GNS Science is a Crown-owned company that employs 385 science and support staff and has offices in Lower Hutt, Taupo, and Dunedin. Its purpose is to secure economic, social, environmental benefits for New Zealand by undertaking research and technology transfer that increases resilience to natural hazards, drives innovation and economic growth in the energy and minerals industries, develops industrial and environmental applications of isotope science, and enhances our understanding of natural processes occurring in the Earth's crust.

NZGA Special Interest Groups – Update until August 2013

A brief update is set out below – for more details and previous Interest Group Updates please see the NZGA web-site. Key issues are as follows:

Structural Geology and Geothermal Geomechanics Special Interest Group - The Group have structure and geomechanics sessions planned during the NZ Geothermal Workshop (NZGW) and preparations of the 35th NZGW (Rotorua 18-20 November) are underway.

Tourism - The Geothermal Tourism group is currently developing a database of nationwide geothermal tourism operators. This information will be used to gain a better understanding of the NZ geothermal tourism landscape and will form the basis of an engagement plan with the industry.

Geothermal Reservoir Modelling Interest Group - 13 reservoir modellers attended the inaugural two day PyTOUGH Training Course. Evidence from TOUGH2 modellers at the 2012 TOUGH2 Symposium in Berkeley, CA, is that the development of PyTOUGH has been timely, and it has been received enthusiastically amongst the modelling community.

NZGA Environment and Legislation Interest Group - With proposed changes to the RMA, other environmental legislation, policy and standards that could impact on geothermal it is anticipated that the Group will be active in the months ahead. Noel Kortright has just taken over leadership of this group.

The Geothermal Heat-pump Association of New Zealand (GHANZ) - In 2013 GHANZ have been involved in the proposed Canterbury Land and Water Regional Plan hearings; working with Australia to develop an Australasian chapter of the International Ground Source Heat Pump Association (IGSHPA); and arranging a visit from an international expert is planned for Christchurch later in the year.

To download the August Special Interest Update- see [here](#)

GEONZ UPDATE - Note – there is no GEONZ update available at the time of publication.
Mike Allen will be circulating a report to GEONZ Members shortly. For any queries contact Mike Allen at mike.allen@xtra.co.nz.

Update from AGGAT



The Above-Ground Geothermal and Allied Technologies programme ("AGGAT") has been in progress through HERA and partners for almost a year now. HERA is hosting an AGGAT summit on 21st October 2013 at the HERA House in Auckland to which all NZGA members are also invited to hear about the latest developments in AGGAT research through the AGGAT programme. This will also be an opportunity to network with AGGAT team members and the wider geothermal and energy related industrial community.

Projects currently active include:

- Upgrade of an existing 1kW Organic Rankine Cycle (ORC) testing rig
- Conceptual design and development of a 100kW turbine testing rig
- Development and installation of a waste heat extraction unit in the ORC unit
- Selection and Modelling of Turbines
- Site Integration and Economics for power generation
- Control System Philosophies and Design for ORC units
- Market access pathways for Europe and the USA
- Conceptual design and drawings completed for pilot plant installation which are now under review.

A number of presentations on AGGAT-related research work will be presented at the NZ Geothermal Workshop being held on 18th – 21st November in Rotorua this year.

A conference on Organic Rankine Cycle Technology is being held at the De Doelen Centre in Rotterdam, The Netherlands from 7th – 9th October, 2013 including a field trip to the leading ORC manufacturer site Tri-O-Gen. HERA is leading a delegation to attend the conference and to visit businesses in Europe dealing with ORC technology. The itinerary is currently under development. If you would like to join the delegation or attend the conference, please contact HERA Senior Research Engineer Dr. Boaz Habib (boaz.habib@hera.org.nz) for further information.



AGGAT team at the Inaugural team meeting in December 2012, University of Canterbury, Christchurch

GEOHERMAL NEWS

New Zealand News

- **Electricity demand falls to a four year low** - Electricity generation fell to a four-year low in the March quarter as heavy industry cut production and mild autumn temperatures trimmed demand. New Zealand generators delivered 10,029 GWh of electricity in the March quarter, almost 1 per cent less than a year earlier and the lowest three-month volume since the first quarter of 2009, according to the government's latest [Energy Quarterly](#) publication. Geothermal production slowed to 1,408 GWh, the lowest since March 2011.
- **Chinese deal in New Zealand receives critical reception** - There are critical voices to a recent decision by New Zealand's Overseas Investment Office that approved investment plans of a Chinese investor into the potential site of a geothermal power plant near Taupo. [Read More.](#)
- **Ngatamariki power plant reaches full capacity** - *Mighty River Power* reports that its \$484 million 82 MW Ngatamariki geothermal power plant near Taupo has reached full capacity for the first time in late June. July and August will see further testing and tuning of the individual units and the overall plant before Ngatamariki settles into its normal base-load role. The development takes MRP's geothermal capacity to more than 460 MW and increase's its geothermal share of total generation to more than 40%. [Read More.](#)
- **Positive initial response to Ngawha Expansion** – Top Energy's Ngawha Expansion Project (expansion of the 25MW geothermal plant near Kaikohe) is progressing through the early stages of technical planning and stakeholder engagement so that the project plans can be finalised and define the environmental effects for the exploratory drilling consent application. From a technical perspective, the well sites and the well pathways have been defined for the exploration drilling activities. The new pipeline route to incorporate well NG 8 into the reinjection network at the existing Ngawha site has been identified. The pipeline will cross over a QEII covenant, which requires consent from the QEII Trust. Also, further adjustments to the reservoir model have been made to recalibrate the model with the actual on-

site well data received.

Individuals and groups within the community that may be affected by the project are being offered briefings on the project and its effects and benefits. Many of these stakeholders will be consulted more closely under the project's Stakeholder Engagement Strategy, which provides a programme of careful communication and consultation. The initial response has been positive, with a lot of interest in the management of the thermal resource and environment, as well as the potential for new industry and jobs for the Kaikohe area. Read More – [Energy News article](#); [Northern News article](#).

- **Geothermal resources helps wood processors** - Clustering wood processing activities near the central North Island's geothermal fields may help lower costs and boost the industry's potential to develop new technologies and products, Crown research institute Scion says. With GNS Science, Scion is mapping the region's geothermal resource in order to get a fuller understanding of the industrial opportunities available. Once established, geothermal is a relatively cheap energy source, the steam temperatures required can be met by a geothermal supply, and there is a lot of untapped resource around Taupo and Rotorua. Potentially, processing clusters change the economics.
- **Callaghan Innovation (formerly IRL) geothermal modellers move to GNS Science** – Effective from July 15th, geothermal modellers John Burnell and Warwick Kissling have moved to GNS Science at the Avalon office.

• Other NZ Geothermal Developments (Reminder):

- **Contact Energy** is completing its 166 MW Te Mihi plant at its Wairakei field, and has also been working with the Taheke 8C Incorporation investigating a 35 MW project on the northern shore of Lake Rotoiti.
- **Norske Skog** this year commissioned a 25 MW plant (TOPP1) at Kawerau.
- **Eastland Group** has sought resource consents for a similar sized plant at Kawerau, its second in the area.
- **Ngati Tuwharetoa Geothermal Assets** has sought consents for additional Kawerau development.

NZ Geothermal Generation – Something to shout about?

Despite recent declines in electricity demand, geothermal generation produced about 14 % of the country's electricity last year, about twice its contribution a decade earlier, according to government data. Average daily production from grid-connected geothermal plants exceeded 650 MW, according to NZX Energy data. NZ today has almost 800MW installed, with 3 new plants being commissioned during 2013. NZ scientific and engineering skills have contributed to at least 2,000 MW of geothermal power developments internationally. (Source - <http://hawkinsinfrastructure.co.nz/nz-chile-s-strategic-partnership-in-geothermal-energy/>)

In June, MBIE published New Zealand's Energy Outlook – Electricity Insight. This scenario-based study attempts to gain insight in our energy markets to allow preparedness for future changes. Some extracts follow: "There is likely to be significant investment in geothermal plants over the next 30 years. In all of our four scenarios, geothermal increases its share of generation from 14% in 2012 to between 21% and 29% in 2040. The growth in new geothermal generation is focused on the central North Island, where the highest quality and lowest cost resources can be accessed." "Maintaining a robust central North Island transmission network will be vital to delivering the expected increase in geothermal electricity to our main demand centre in Auckland." "If geothermal and wind remain the cheapest new generation options, their relative economics will have a large bearing on where future transmissions investments will be required. The cheapest geothermal resources are all in the central North Island; however, quality wind resources are found all around New Zealand." "Access to New Zealand's low-cost geothermal resource is likely to be a key factor in limiting wholesale price increases. Generators, land owners (including iwi) and government will need to continue to work together to maximise the economic, environmental and cultural benefits from geothermal resources." (Source - <http://www.med.govt.nz/sectors-industries/energy/energy-modelling/modelling/pdf-docs-library/electricity-insight/electricity-insight.pdf>)

FUNDING NEWS

Technology Demonstration Funding from EECA - The Energy Efficiency and Conservation Authority (EECA), is offering funding to encourage industry to take up new energy efficient technologies not yet widely available in New Zealand. The technology demonstration project is a first for EECA and up to \$100,000 will be available in the first of two rounds of funding. New technologies could include industrial-scale heat pump water heaters, or high-efficiency condensing steam boilers. EECA is particularly interested in participation from businesses working in the export sector, but also those using high levels of thermal heat. Other energy intensive business sectors, such as food processing, wood processing and industrial manufacturing are also encouraged to apply. See the [EECA Business web-site](#).

Opportunities outlined at ASEAN Meeting



The Association of Southeast Asian Nations (ASEAN) is a grouping of ten economically, culturally, and politically diverse Southeast Asian nations in our neighbourhood. As a region, the ASEAN nations have committed to weaving a closer future together through the ASEAN Community.

NZ Geothermal Association Members Marcel Manders, Sadiq Zarrouk and Chris Mann attended a recent ASEAN Function in Auckland. The Government launched New Zealand's ASEAN Partnership: One Pathway to Ten Nations - on 12 July in Auckland. The ['NZ Inc' strategy](#) includes priorities for international education. The launch was followed by a road show event commencing on 15 July that was destined for stops country-wide (see [here](#)).

Opening the event, PM John Key talked about the growing investment, exports and business opportunities in the 10 ASEAN countries (population 620M). While he did not explicitly mention energy in his speech, there was a strong focus on providing technical skills, education and training. This training and skills focus is consistent with ongoing initiatives from which NZ geothermal experts can and are benefitting.

International News

NZGA 2013 WEBINARS

- **Rebranding of geothermal from baseload reliability to automatic grid control** - In a changing electricity supply environment, the attribute of baseload might not be the main selling angle for geothermal going forward, as it could provide an even more important value – namely being able to cover swings in the supply or actually the lack thereof from other renewables. [Read More](#).
[Editor's note: the comments in this article about ability to respond rapidly to demand changes are more likely to be possible with steam-dominated reservoirs than liquid-dominated reservoirs as found in New Zealand].
- **EGEC recommendations on how to finance geothermal energy projects** - In a newly released policy paper, the European Geothermal Energy Council (EGEC) sets out how to finance Geothermal Energy with innovative financial tools and smart support schemes in Europe. [Read More](#).
- **Challenging environment delaying development in Indonesia** - Indonesian geothermal development seems to be stalled until there is clarity on the new feed-in-tariff scheme and regulatory/ permitting issues are simplified. Indonesia's energy reforms will give developers the certainty to invest USD \$15 billion in geothermal developments, government officials say. Project delays in recent years have caused headaches for local and international companies, including several New Zealand firms looking to capitalise on the potentially lucrative market. However, the Ministry of Energy and Mineral Resources expects a pick-up in geothermal developments with a new pricing regime, streamlined forestry regulations and tax incentives for foreign investors. [Read More](#) and [More Here](#).
- **Funding for Petrotherm is restructured - "Geothermal energy strikes commonsense"** - The announcement from the Australian Renewable Energy Agency in late June that funding for Petratherm would be restructured with more modest objectives was, it has been alleged 'a victory for commonsense'. Petratherm was originally awarded a \$62.8 million grant by the Australian government under the Renewable Energy Demonstration Program to support construction of a 30MW project; as well as \$7 million under the Geothermal Drilling Program. New funding arrangements have been set out in the announcement. [Read More](#).
- **AU's Habanero Plant Generates** - In a major milestone for Geodynamics, its 1MW Habanero pilot plant in South Australia has started producing electricity utilising the heat resource from the Innaminka Deeps Project. This project development is highly significant because it is the first of its kind in Australia (and one of a small handful globally) to produce power employing a technique known as an [Enhanced or Engineered Geothermal System \(EGS\)](#). [Read More](#). Most recently Geodynamics confirmed a successful test program at the 1MWe Habanero Pilot Plant. The first half of an approximate 100 day planned test program has successfully been completed. [Read More](#).

NZGA hopes to introduce a series of webinars in 2013. The likely format is a half hour online presentation followed by questions.

If you are interested in making a presentation or would like to suggest a speaker for NZGA to secure please contact the [Executive Officer](#).

Board and Executive Officer Update

- **Brian Carey is the new NZGA President.** Brian Carey took over this role following the last Board meeting on 11 June. Spence McClintock had been waiting to pass on the Presidency, and a change of duties at GNS Science enabled Brian to take on the role. Spence is now Past President which means that Colin Harvey can finally step down from the Board. Congratulations Brian, and thanks to both Spence and Colin for their past service.
- **Bylaw revisions.** Jane Brotheridge (NZGA Secretary) has largely completed revisions of the bylaws in consultation with the Board and will be able to take this to members soon. The changes are more of a “tidy up” nature than anything radical.
- **Board elections.** The news is that there won’t be Board elections this year. Jane has led a process of calling for nominations for Board membership. Five members must retire or will stand down at the AGM and four members have been nominated. As there are fewer nominees than vacancies, all will go through to the next Board and there is no need for an election. From the AGM Juliet Newson, Paul Bixley, Peter Barnett, Rick Smith and Warwick Kissling will retire or stand down while Andrew Rae (GNS Science), Mark Green (Contact Energy), John Burnell (Callaghan Innovation – but now GNS Science) and Katherine Luketina (Waikato Regional Council) will join the Board. Short profiles of these upcoming Board members follow this update. Again, thanks to the Board members who have served (and continue to serve) on the Board, and to those who have made themselves available for future service.
- **Subscriptions.** We are just collecting the final subscription payments. We currently have 345 individual members with 10 payments to come.
- **Membership certificates.** This year we have issued membership certificates. Why not display these so people will know who is in the NZGA and others will be encouraged to join too?
- **Life membership.** The NZGA Board has voted for Jim Lawless to become a Life member of NZGA starting next year. This recognises years of service to the geothermal industry.
- **NZGA website.** Our website is www.nzgeothermal.org.nz. On a typical day we have around 120 visits with about 35% from New Zealand, 20% from USA, around 5% each from China, Germany, Great Britain and Australia, and so on. There is strong interest in what is happening in New Zealand and in the various reports that are on our website (e.g. information about New Zealand fields, or a Beca report on Geothermal Heat Pumps, or an SKM report on the Cost of Geothermal Electricity Generation). The website can be a way of getting your company name in the market place. NZGA has a number of research reports that need to be written indicated in our action plan, so why not consider whether you could write one of these and contact the Executive Officer.
- **Energy Gatherings.** The last quarter has been busy with meetings. These include a Japan/New Zealand Geothermal Workshop (18-20 March), Pacific Energy Summit and Expo (24-26 March), NZGA Seminar (Supermodels Workshop) 12 June and the Maori Geothermal Symposium (9-10 July). Many of these are reported elsewhere in this newsletter. Make sure your calendar includes the 35th New Zealand Geothermal Workshop 18-21 November in Rotorua (part of the larger 26th International Applied Geochemistry Symposium). And it is also time to start planning for the World Geothermal Congress in April 2015, with the call for papers due any day. Budgets will need to be set for strong industry representation, for sponsorship and for exhibition booths.
- **Geothermal Exploration Paper.** NZGA Board, with the assistance of other members has reviewed a report for IGA on “Geothermal Exploration Best Practices: A Guide to Resource Data Collection, Analysis, and Presentation for Geothermal Projects”. The report had already benefited from input from Colin Harvey and from GNS Science, and was funded by a number of groups including the International Finance Corporation (part of the World Bank Group) (see http://www.geothermal-energy.org/fileadmin/user_upload/documents/best_practice_guide/IFC-IGA_Geothermal_Exploration_Best_Practices-March2013.pdf for the unedited copy).

Profiles of the upcoming Board Members (duties will start after the AGM):

Andrew Rae – Geologist - Andrew Rae joined GNS Science in September 2005, to work as a geothermal geologist. During this time he has been involved with ongoing GNS Science geological wellsite services and supervision (Contact Energy at Wairakei, Tauhara, Ohaaki and Taheke; Mighty River Power at Kawerau, Rotokawa, Mokai and Ngatamariki), along with geothermal resource consenting processes and evaluations (both nationally and internationally). His research interests have focussed on New Zealand’s high enthalpy geothermal systems, in particular their temporal and spatial distribution and hydrothermal alteration processes. As a new member of the NZGA Board, Andrew would like to raise the profile for geothermal science and engineering education, and investigate new opportunities for applying New Zealand’s geothermal technical expertise internationally.



John Burnell – Research Scientist - John is a senior scientist at GNS Science in Wellington. He was previously with the Applied Maths team at Callaghan Innovation/IRL in Wellington. The Applied Maths team has been at the forefront of the development of techniques for modelling geothermal systems since the early day of the operation of the Wairakei system. John has worked in geothermal reservoir modelling for over 25 years, undertaking both research and consulting. He has worked on the development of models of geothermal systems throughout the world, including models for consenting, resource planning and research purposes. In New Zealand he has worked on models of Rotorua, Ngatamariki, Rotokawa, Wairakei-Tauhara, Mokai and Kawerau. John develops software used for modelling, he is currently the developer of a Tough2 pre-processor, a wellbore simulator and has added many customisations to Tough2 for clients. John is the NZ convenor of the IPGT Reservoir Modelling Group.



Mark Green – Drilling Manager - Mark has worked for Contact Energy as Drilling Manager for the past 3 years managing a team of Drilling Engineers and numerous international Contractors that contribute to the drilling operations. Mark has been the driving force behind many process improvements within the Geo-Resources and Development Group over the past few years and is also heavily involved and passionate about health and safety on the rigs. Mark has always been a strong advocate for training and development and has recently sat on an Exito workgroup developing Drilling Qualifications for New Zealand Industry, this work now being taken over by MITO. Prior to emigrating, Mark was Managing Director of Discovery Drilling in the UK for 11 years until its sale to Irish company Glover in 2008 when he became the Managing Director for Glover UK. The company was engaged in geotechnical and environmental drilling for major infrastructure projects such as port developments, motorway construction, airport construction, rail extensions and water infrastructure. Mark was an active member of the British Drilling Association in the UK, sitting on steering committees developing codes of practice and was instrumental in the development of the BDA Drilling Qualification. Mark has a degree in Mining & Exploration Geology from Cardiff University and a Masters degree in Engineering Geology from Newcastle University.



Katherine Luketina – Geothermal Scientist - Katherine Luketina is a geothermal scientist with Waikato Regional Council, a position she has held for sixteen years. She has a MSc in Physics from the University of Auckland and a PGDip Environment Management from Waikato University. For the council, she is involved in geothermal resource consent hearings, policy development, environmental and resource monitoring and reporting, and local, national and international liaison. Katherine served two 3-year terms on the NZGA Board until 2003 and since then has acted as Council's liaison with the Board. She therefore brings to the board 16 years' continuity of service and understanding of the board's history and role, as well as providing a regional council perspective to board proceedings.



Fact-Finding Mission to Germany - UPDATE



Plans are firming up now for the New Zealand-German Business Association fact-finding mission to Germany focused on renewables, and transfer of knowledge.

Fact-finding missions are specifically aimed at those who make and influence decisions - including government policymakers, administrative authorities and opinion leaders - enabling them to gather first-hand information on German renewable energy technologies. The missions focus on the on-site viewing of examples - the purpose here is to promote the transfer of knowledge, especially with regard to solutions and technologies.

The trip will now cover the following four sectors: solar, biomass, geothermal and wind. It will take place **23-27 September 2013**. Please find more details (including the program for the visit) - [visit the Business Association website for more information](#)

So far, there has been great interest and a good number of registrations from various key decision makers in New Zealand. Site visits, bus transfers, events and networking functions will be paid for by the German Federal Ministry of Economics and Technology, but you will pay for your own travel and accommodation.

If you are interested and want to discuss these and other ideas then contact Oliver Rube ORube@germantrade.co.nz

2013 NZGA Geothermal Supermodels Seminar – Report Back

Sponsored by



The **2013 NZGA Geothermal Supermodels Seminar** was held on Wednesday 12th June at Bayview Resort, Wairakei. This was a day of discussion & presentations on how we define, and represent, the high-temperature geothermal systems of New Zealand. 50 geothermalists attended this meeting, which started with how we picture geothermal fields through scientific disciplines, and how modelling techniques have developed to ensure that system interpretations are consistent with all the geo-scientific data.

Interesting presentations followed, which discussed managing New Zealand geothermal systems, and relating resource management to numerical modelling. The final sessions of the day were presentations on developing the next generation of numerical simulators. The day finished with a lively discussion on resource management, modelling, and data collection.

Five take-away points emerged from that discussion. Geothermal scientists and engineers need to:

1. Integrate all disciplines into conceptual system models, such that conceptual models are consistent with all the data.
2. Define the goal of modelling the entire TVZ.
3. Economic modelling needs to assume greater prominence.
4. To be able to better quantify uncertainty.
5. Build good data management systems, and ensure consistency of data.

Drinks and dinner at the Wairakei Resort rounded off an excellent and informative day.

The seminar was followed by a two-day course on using the Python 'PyTOUGH' library to process TOUGH2 reservoir simulation files. This was taught by Dr Adrian Croucher from the University of Auckland, and attended by 13 reservoir modellers. We consider that this was a very impressive number for a small country like New Zealand, and is an indication of the depth of reservoir modelling knowledge and skill in our country. The PyTOUGH course was sponsored by Contact Energy, the University of Auckland, and GNS Science.

"Thank you to all attendees and presenters for a great day, from the seminar organisers" - Andy Blair, Juliet Newson, and Trudy Stuart.

The Maori Geothermal Symposia – Report Back

The Maori Geothermal Symposia was held over two days in Rotorua on 09 – 10 July attracting over 130 delegates. The event theme; He Kai Kei Âku Ringa – The Crown-Māori Economic Growth Partnership Report stems from the earlier work by the Māori Economic Taskforce which identified the need to increase the productivity of land and other resources within Māori and iwi communities.

The report *'Provides a blueprint for a productive, innovative, and export-orientated Māori economy for development through to 2040. This includes 26 action points which include areas such as education and on-job training; governance of Māori assets and access to capital; and land productivity.'*



The report was released last year by Ministers Joyce and Sharples, and was the culmination of a number of reports and work undertaken by the taskforce as well as government and BERL economists over 5-6 years. This arises from the report recommendations and as an example - the significant evolution of Māori involvement in geothermal. The Māori Geothermal Symposium is one opportunity to give effect to the intent of the report by bringing together iwi, hapū, business, Government and associated partners to map a pathway forward. The key conclusions of the discussion recognise that economic success for Māori is economic success for all New Zealand.

A copy of the evaluation result and a link to GNS Website link to symposia images
<http://www.gns.cri.nz/Home/News-and-Events/Events/Maori-Geothermal>. Diane Bradshaw

NZGA Membership Details

NZGA Membership stands at 345(July 2013).

- 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](#).

Welcome to the following new Members:

- M Chrisp – Environmental Management Services
- J Wheble – JWA Energy
- F van De Wydeven – Aecom
- F Wylie – Downer New Zealand
- J O’Sullivan – University of Auckland
- J Block – Weatherford New Zealand
- C Henderson – Aqualinc Research
- H Rutter – Aqualinc Research

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 REGULAR FEATURE – GEOTHERMAL TOURISM – Publications of Interest

“Geothermal water is Iceland’s white gold” - read more about so called [health tourism opportunities in Iceland](#).

Sustainable Tourism in Iceland – The number of tourists in Iceland has nearly doubled since 2000. Annual growth has averaged about 6% during this period, but was more than 15% in the last two years. A continuing increase is predicted and, therefore, there is a high probability of increased intrusion and pressure on Icelandic nature; over 80% of foreign tourists mention Icelandic nature as the country's main attraction.

Geothermal areas play a major role in all this and, therefore, Landvernd - the Iceland Environmental Association - launched its project Nature Conservation and Sustainable Tourism in Geothermal Areas in early 2012. The project is designed as the first part of the long-term protection of geothermal energy in Iceland. Iceland's magnificent and distinctive geothermal areas are almost unparalleled in the world, and their diversity is high, both in relation to geology and mineralogy or biology. [Read More](#).

NZGA ACTION PLAN

The NZGA Action Plan is a living document that sets out the workplan 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 August 2013.)

NZGA RESOURCES (on the NZGA web-site)

[NZGA Industry Papers](#) (@ Nov 2012)

[NZGA Media Statements](#) (@ Aug 2012)

[NZ Country Update 2012](#)

[NZGA Submissions](#) (@ March 2013)

What’s New - For all other ‘What’s New’ – see the NZGA web-site [here](#).

EVENTS - 2013

New Zealand Geothermal Workshop 2013 - 35th New Zealand Geothermal Workshop

- Technical Programme: Monday – Wednesday, 18 - 20 November 2013

NZGW 2013 will be held at the Rotorua Convention Centre in conjunction with the 26th International Applied Geochemistry Symposium. The conference is expected to attract more than 400 local and international delegates. Keynote speakers for NZGW include Pat Browne, Bridget Ayling, Hagen Hole, Colleen Barton and Stephen Finsterle. There are still opportunities to sponsor the workshop including being part of the exhibition hall, but spaces are filling fast! Contact [Rachel Fenton](#) or [Sadiq Zarrouk](#) for assistance. The [earlybird registration](#) closes 31st August.

EDUCATION/TRAINING - 2013

The Basics of Geothermal Science and Technology – short course - Thursday, 21 November 2013 - This is a one-day introductory course covering a basic understanding of geothermal science, technology and environmental issues. It is suitable for participants who deal with planning, conservation or business activities associated with geothermal activity and the geothermal industry. To be held at the Rotorua Convention Centre in association with the New Zealand Geothermal Workshop. For enquiries, please contact [Rachel Fenton](#). Please [register attendance](#) through the conference website.

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.

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If your contact details change – let us know here - [Executive Officer](#)