

The New Zealand Geothermal Association Action Plan 2006

Prepared by

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Background

The following report sets out initiatives that can reasonably be undertaken under the lead of the New Zealand Geothermal Association to assist appropriate development of New Zealand's geothermal resources.

This report follows a more detailed Action Plan prepared by the NZGA for EECA in 2003. That report covered a wide range of initiatives to assist geothermal development that could be undertaken by developers, EECA and the NZGA. The original report flowed from the 2003 NZGA Seminar in Taupo, whereas this refocused report follows discussion at the 2005 NZGA Seminar in Rotorua.

About the New Zealand Geothermal Association

To quote from our by-laws:

"The New Zealand Geothermal Association is a scientific, educational and cultural organisation established to operate in New Zealand. It is a non-political, non-governmental, non-profit organisation. It has no political affiliation. Its aim is to encourage, facilitate and, when appropriate, promote co-ordination of activities related to worldwide and national research, development and application of geothermal resources."

The Association has a diverse membership. It not only includes those whose main interests are large-scale geothermal energy development, such as developers, consultants and service companies, but also research institutions, universities, regulatory authorities and Maori groups. This means that the Association provides an excellent forum to debate geothermal policy and market issues as well as technical matters – though it can make it difficult to reach a consensus viewpoint in some cases.

The Association has an interest in the following markets:

1. Large and small scale electricity generation from geothermal sources.
2. Large and small scale direct heat use from geothermal sources. The Association acknowledges that this may be more thermodynamically and commercially efficient where a good match between sources and use exists.
3. Development of minerals and biota associated with geothermal environments.
4. Non-extractive uses, such as tourism.

The Association recognises the special value placed on the geothermal resources by the communities that live nearby.

Priorities

The Association's priorities are:

1. Accurate and useful information dissemination,
2. Encouraging and facilitating timely and appropriate development of geothermal resources,
3. Facilitating networking of members and other interested parties.

A Shortlist of Activities

The following shortlist of activities is based on Seminar and subsequent NZGA Board discussion. Activities outside the direct influence of the Association or completed activities have been omitted.

An immediate priority is to establish hard information about current usage, potential and development costs.

Action	Status	Comments	\$k	Priority
Website Update	Continuing action	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.	10	1
Update Field Capacity Tables	In hand	Draft is currently being reviewed by Board members.	0	1
Annual NZGA Seminar and the New Zealand Geothermal Workshop	Date set and planning initiated	The theme this year for the NZGA Seminar will be Generation and linking current developments to resources. The theme for the Workshop will be Pacific Rim Geothermal. The two conferences will be held in conjunction. This will be the premier industry event for information dissemination and networking.	30	1
Assessment of Direct Heat Usage	There are conflicting estimates from Statistics NZ and as reported at the World Geothermal Congress 2005	A more careful probe of usage will both provide a reliable estimate from which baseline movement can be measured, and also give greater attention to current usage from which Case Studies can be derived. This is part of a fundamental inventory.	10	1
Description of Major Geothermal Developments	No single report exists	This report, aimed at the public and those with a general geothermal interest would replace several more intrusive studies suggested previously, including the station efficiency study. It would include short (1 or 2 page) descriptions of the field and of the station including simple schematics and photos, followed by short descriptions of operational history with graphs of past discharges and generation. Some of this material could feed into sustainability discussions, assisting further development. This will effectively be a collection of case studies.	20	2
Manufacturing and Service Capability	This report is a follow-on report from the Personnel Capability report	This report will look at typical New Zealand components of geothermal developments e.g. drilling rigs, pipe and pressure vessel manufacture, insulation, electrical services, civil contractors. An assessment will be made of their ability to handle an upturn in geothermal work, related issues, and whether there are alternatives to their use.	15	2
Cost of Geothermal Power Development	Initiated within the NZGA Board	There are indications that previous estimates of geothermal development costs in New Zealand may be light. Changed factors in recent years include major exchange rate movement, escalating raw material prices and a changed drilling scene. Costs should be revisited so geothermal generation can be more accurately compared with alternative generation forms.	10	2
Geothermal Heat Pump Study	Initial enquiries to installers	An installer of heat pumps has been found along with real New Zealand cases. Initial indications are that, in niche situations, this could compete with solar hot water so could be a significant contributor to our national energy future. A New Zealand report is	12	2

		needed on costs, practice and case studies.		
Desperate Generation (Future Must Run Auctions)	An initial approach has been made to Concept Consulting to develop a brief	Must Run auctions are a feature of the NZ electricity market. Currently on rare occasions generators compete to offer generation that must run into the market at periods of low demand. With forecast increases in wind and geothermal energy, some hydro generation that must run because of consent requirements, inflexible gas contracts and increased call on coal and oil-fired stations whose units should not shut down overnight then daily auctions will be required. Plant that must run will not be able to run and there will be efficiency losses. This study will look at which plants are likely to stay running, whether geothermal plants can respond through load-following or venting, possible changes to consenting regimes to enable more flexible operation and likely impact on load factor. This study may be run in co-operation with NZWEA.	20	3
Geothermal Short Courses	Two of these have been run already in cooperation with AUGI	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.	5	3
Regional Branch of the IGA	The concept is being developed and championed by Jim Lawless	A regional branch of IGA will improve international linkages and understanding of wider development issues.	0	4
Position Paper on Overseas Treatment of Renewables	Not started	This would collate policy papers on renewable energy sources with a view to identifying further positive action that could be undertaken in New Zealand	15	4

In addition to the specific actions above, the NZGA wishes to provide support to the following:

- Any further industry training initiatives, especially in conjunction with the Geothermal Institute,
- Efforts to establish eco-tourism ventures linking to geothermal, through information provision,
- Broader initiatives by industry aimed at accelerating the appropriate development of or research into resources at any scale.

To achieve, its goals the NZGA will be actively lobbying appropriate organisations and government agencies.

Specific Activity Descriptions

1. NZGA Website Update

The Nature and Scope of the Activity	<p>This activity involves further updating of the NZGA website, based on perceived weaknesses. The website is continually updated, but funding will allow additional features to be added.</p> <p>Improvements will include:</p> <ul style="list-style-type: none"> • A reassessment of field capacity • A reassessment of development cost (both electricity and heat) • Schematics of generation cycles (generation is one of the most visited pages) • Further text on direct use and a link to a GNS booklet on “Using Low Temperature Geothermal Resources” (subject to approval) – effectively mini-case studies on direct use • Maps and photos of geothermal fields • A new map of New Zealand low temperature resources • A brief section on use of minerals in separated water (with references to earlier research by Ian Thain) • A section on silica (appropriate silica treatment can allow further energy to be extracted from geothermal energy for electricity generation or heat) <p>Where other reports are undertaken for this Action Plan, the material will be added to the website.</p>
Rationale	<p>The website is an excellent communication tool with over 150 visits per day by national and international researchers. The site can alert people to possibilities, and assist appropriate development through simple descriptions of opportunities.</p>
Timing	<p>The tasks as outlined above can be complete by 30 June, though the website will be continually updated.</p>
Parties Involved	<p>Work will be led by the Executive Officer. The Board will provide some material on a voluntary basis. Generation cycle schematics are likely to be contracted to a third party. GNS will provide links to their low temperature report, map of low temperature resources and text on silica.</p>
Linkages Between Activities and Priorities	<p>This activity directly satisfies our priority of accurate and useful information dissemination. The website is one of the principal means by which we educate the public and inform our members. It can assist development through having informed public and informed potential developers.</p>
Financial	<p>\$10,000 is sought for direct funding. NZGA Board will be offering some information without charge.</p>
Outcome Monitoring	<p>Full updates as specified above should be on the website by 30 June. NZGA will continue to monitor website visits to ensure interest is retained. Any direct feedback will be noted.</p>

2. Update Field Capacity Tables

The Nature and Scope of the Activity	The task involves revision of tables initially prepared by Jim Lawless and Brian Lovelock setting out New Zealand field capacity, and then showing how this is reduced to a practical capacity, taking into account a range of constraints. The first table has been a principal source of information for a range of studies including the Ministry of Economic Development's Energy Outlook, and has informed EECA in its development of the Renewable Energy Target. The NZGA Board is currently consulting internally with a view to greater agreement on the assessments and their reduction to practically achievable capacities.
Rationale	The current tables do reflect personal views of publicly available information, but have significant impact on energy modelling for New Zealand. The Board has agreed to work towards a set of values that have a greater degree of acceptance, taking into account recently available information, but without compromising commercial confidentiality.
Timing	This work can be completed by 30 June 2006. It is likely that the tables will be updated from time to time in future.
Parties Involved	The NZGA Board is providing advice to Jim Lawless (the original author) who will co-ordinate responses and formalise the new tables.
Linkages Between Activities and Priorities	This activity aims to improve key information on geothermal resources in the public domain. A table showing practical capacity for all geothermal fields in the public domain alerts all possible developers to opportunities, thus encouraging development.
Financial	0?
Outcome Monitoring	When complete, this material will be added to the website (replacing a current table). Both MED and EECA will be advised on completion.

3. Annual NZGA Seminar and the New Zealand Geothermal Workshop

The Nature and Scope of the Activity	A joint conference will be held at the University of Auckland in November. The NZGA Seminar is generally more issues-based and practical while the Workshop is more technical. This year the theme of the Seminar is “Generation” and how it relates to the resource, while the theme of the Workshop is “Pacific Rim Geothermal”.
Rationale	<p>This particular Geothermal Workshop marks the decision by the University of Auckland to reinstate a geothermal programme, and aims to gain strong interest from New Zealand and Pacific rim neighbours who may send students to the upcoming course.</p> <p>The Seminar theme on generation balances last year’s theme on direct use.</p> <p>The venue provides opportunity for NZGA to lobby for an IGA Regional Branch.</p> <p>The joint conference allows a strengthened position for both NZGA and the University in their future goals.</p> <p>The conference provides a principal means for interested parties to be updated on current areas of research and of development.</p>
Timing	The two events will be held 15 – 17 November 2006, University of Auckland, with seminar activities focussed on 17 November.
Parties Involved	NZGA and the University of Auckland are cooperating with the wider geothermal community and interested parties to run the joint event. The University’s conference convenors will undertake overall coordination. There will be a range of speakers from all geothermal and energy perspectives.
Linkages Between Activities and Priorities	The joint conference allows information dissemination, is strongly network orientated (including international linkages) and could assist development through greater comfort over the technologies and information available.
Financial	<p>NZGA has agreed to seed sponsor the event by \$7,500, but both the NZGA and the University are constrained from approaching any existing sponsors of NZGA under its sponsorship arrangements.</p> <p>The University and NZGA will jointly be seeking a further \$10,000 from EECA to fund this event.</p> <p>Conference fees have yet to be set but are likely to be around \$400 per person for the full event.</p>
Outcome Monitoring	The event will occur on the set dates. Media will be invited to attend the Workshop.

4. Assessment of Direct Heat Usage

The Nature and Scope of the Activity	<p>Estimates of direct use will be obtained from various Regional Councils and known major users of geothermal energy. The Concise Listing of Geothermal Fields will be used as a basis for ensuring known usage at all geothermal fields is covered.</p> <p>A start will be made to a database of geothermal direct usage. Where possible, known ground source heat pump applications will be included.</p> <p>A short report will be written summarising sources of information and providing a conclusion of total direct usage spread over the categories identified in the WGC template, and further split by region.</p>
Rationale	<p>There are great uncertainties around current direct usage, and a far better understanding is required, especially where a measure of increased usage of renewables is eventually required for a replacement NEECS target.</p> <p>The 2000-2005 New Zealand Country Update Report to the WGC reported 6,719TJ/year of industrial use and 694TJ/year of domestic use at Rotorua with all other domestic use unspecified, thus totalling just over 7,400TJ/year.</p> <p>Statistics New Zealand reported 11,427TJ of industrial/commercial use and 2,393TJ of Bay of Plenty region domestic use, thus totalling almost 14,000TJ for 2005. This ignores the extensive use in the Waikato region, and minor use elsewhere.</p> <p>Clearly gaps and differences are significant.</p> <p>Even rudimentary attempts to itemise current usage will have the effect of putting NZGA in touch with current users, and give greater understanding of usage.</p> <p>Step-outs from this activity could include:</p> <ul style="list-style-type: none"> • a comprehensive database of direct use, • a report on practices (and costs?) in New Zealand (and possibly recommendations for improvements e.g. rationalisation of developments in mini-district heating schemes), and • source material for case studies.
Timing	<p>A report setting out a national estimate of geothermal direct usage for the 2005 calendar year can be complete by June 2006.</p>
Parties Involved	<p>This work will be led by the Executive Officer and may be subcontracted to another party. The researcher will have to work with regional councils and will be directly contacting some parties (particularly major users) where they can be identified.</p>
Linkages Between Activities and Priorities	<p>This activity directly relates to our priority of accurate information provision. In that it places emphasis on direct usage, it puts us in closer contact with the direct use market and networking possibilities there.</p>
Financial	<p>The initial reporting and database can be undertaken for \$10,000</p>
Outcome Monitoring	<p>NZGA will be presented with a short report and a very preliminary excel or access database with some names/addresses and details of users.</p>

5. Description of Major Geothermal Developments

The Nature and Scope of the Activity	<p>This activity involves the preparation of a report covering each power station/steamfield development and the Norske Skog Tasman direct heat supply, if possible.</p> <p>The report would include short (1 or 2 page) descriptions of the field and of the station including simple schematics and photos, followed by short descriptions of operational history with graphs of past discharges and generation.</p> <p>The report will require a lot of interaction with the generators and careful vetting of text.</p>
Rationale	<p>The intention is to collect standardised information on existing developments for public consumption. While the full report will be made available on the website, the further intention is to show the information on each station as a case study on the website.</p> <p>Each New Zealand development is worth showcasing. Showing a brief history, particularly of early developments, emphasises the sustainability of developments, and the economic constraints that prevent over-exploitation. In this respect it eases the way for new developments.</p>
Timing	Suggested deadline is December 2006
Parties Involved	<p>The Executive Officer would coordinate the study working with representatives from each of the generators and NST. Subcontracts may be required for artwork and for the report generally. Original equipment manufacturers may want to vet any material entering the public domain.</p>
Linkages Between Activities and Priorities	<p>This feeds into the ongoing improvement of our website with the goal of providing accurate and useful information and this should assist the consenting of future developments.</p>
Financial	\$20,000
Outcome Monitoring	<p>A report will be produced by the end of the year and new pages will be loaded on the website.</p>

6. Manufacturing and Service Industry Capability

The Nature and Scope of the Activity	<p>This report will look at manufacturing and service industry capability to support an upturn in geothermal development. It will consider the typical New Zealand components of geothermal developments e.g. drilling rigs, pipe and pressure vessel manufacture, insulation, electrical services, civil contracting. A list will be developed in consultation with developers of the broad areas and specific contractors.</p> <p>A crude assessment will be made of level of service required for a 25MW and a 50MW development.</p> <p>The contractors will be contacted in an attempt to identify current workloads and markets (e.g. oil and gas industry will be a focus for heavy engineering, Auckland roads may be diverting civil contractors), possible constraints on their service (e.g. availability of well casing), and their preparedness for geothermal development.</p> <p>Where necessary, the report may recommend that developers consider adding further components to EPC contracts.</p>
Rationale	<p>The New Zealand geothermal industry is preparing for a significant upturn in new generation. However, this may not be appreciated by the service industries that might otherwise support the new development.</p> <p>This report will probe the availability of manufacturing and service industries to support new development, and in the process, alert these industries to upcoming development of a general nature.</p>
Timing	<p>June 2006</p>
Parties Involved	<p>The Executive Officer will coordinate the study. The work will be subcontracted to a third party.</p> <p>The work will involve close consultation with developers and with the New Zealand-based service companies that might support their development. Industry associations such as HERA and Contractors Association will have to be contacted. The Board will review the study before it is finalised.</p>
Linkages Between Activities and Priorities	<p>This report follows an earlier report on Personnel Capabilities (funded by EECA), and was recommended as an extension from that study. Through enabling developers to better understand the availability of locally based services, it can assist in their planning for development including appropriate packaging of work for an EPC contractor. Similarly, alerting manufacturing and service industries to an upturn in work could assist in their preparation and readiness for timely development.</p>
Financial	<p>\$15,000</p>
Outcome Monitoring	<p>A report will be published and included on the NZGA website.</p>

7. Cost of Geothermal Power Development

The Nature and Scope of the Activity	In this activity, costs of geothermal power generation in New Zealand will be reviewed to ensure that best estimates are in the public domain. The approach is still being developed to avoid compromising commercially confidential information held by parties. The final goal is a band of unit costs for a number of development scenarios (e.g. high temperature field, productive wells). The report should indicate how unit costs are expected to move with changes in exchange rate.
Rationale	There are indications that previous estimates of geothermal development costs could be light. Changed factors in recent years include major exchange rate movements, escalating raw material prices and a changed drilling scene. Cost estimates inform MED's modelling of future generation costs and the development of price paths under different scenarios. Given the closeness in unit costs for a range of renewable and thermal generation costs, it is important that reasonable estimates be available on a consistent basis to assess likely uptake.
Timing	May 2006
Parties Involved	Board members are currently consulting internally, while avoiding disclosure of confidential information. Final collation of information into a brief report will be required.
Linkages Between Activities and Priorities	This activity addresses the need for accurate and useful information in the primary area of future geothermal development in New Zealand, and one critical to New Zealand's security of supply.
Financial	\$10,000
Outcome Monitoring	The NZGA will publish updated information on geothermal power development costs on the website and directly advise MED and EECA of the results.

8. Geothermal Heat Pump Study

The Nature and Scope of the Activity	A report will be written on geothermal heat pumps in New Zealand. This will describe the technologies, reference some actual examples, give actual costs and show comparative costs. The report may also indicate some knowledge gaps.
Rationale	<p>There is an incorrect national view that geothermal heat pumps are too expensive or cannot be done in New Zealand. This mental and knowledge barrier is blocking development of an energy option that can be attractive.</p> <p>An installer/designer has now been identified, and it should be possible to obtain real case studies.</p> <p>Heat pumps provide a means of highly efficient heating (or cooling). Geothermal heat pumps can achieve higher conversion efficiencies than air source heat pumps, can be used almost anywhere in the country and can compete directly with other renewable technologies. The task continues the process of broadening the thinking on potential geothermal applications.</p>
Timing	A new NEECS is being developed, and this geothermal heat pump study should be available to inform the NEECS before drafts are issued in July. Given workshops will be held from April to June 2006, then the report should be ready before the end of that process for feedback in a workshop. A late May completion date would allow some discussion before the end of that consultation process.
Parties Involved	A report will be written under the direction of the Executive Officer by an energy consultant. The consultant will work in cooperation with Phil Davis (and other designer/supplier/installers)
Linkages Between Activities and Priorities	This report will feed into the NZGA website. It will inform the market and break a psychological barrier to uptake. The report can be used as part of marketing material for niche markets identified and accelerate uptake.
Financial	\$12,000
Outcome Monitoring	A report will be published on the NZGA website. A preliminary presentation of results can be given to EECA at a date in May.

9. Desperate Generation (Future Must Run Auctions)

<p>The Nature and Scope of the Activity</p>	<p>This activity involves a study of “Must Run” generation and auctions. A report will be written looking at these (and events that approach this situation) to see likely market response when demand and must run generation closely match.</p> <p>An assessment will be made of possible financial and operational responses to possibly restricted dispatch of plant.</p>
<p>Rationale</p>	<p>Must Run auctions are a feature of the NZ electricity market. Currently on rare occasions generators compete to offer generation that must run into the market at periods of low demand. With forecast increases in wind and geothermal energy, some hydro generation that must run because of consent requirements, existing cogeneration projects, inflexible gas contracts and increased call on coal and oil-fired stations (whose units should not shut down overnight) then daily auctions will be required in a few years time, and price for all generators will collapse through the affected trading periods. Plant that must run will not be able to run. This study will look at which plants are likely to stay running. Specifically for geothermal generation the study will look at whether geothermal plants can respond through load-following or venting, possible changes to consenting regimes to enable more flexible operation and likely impact on load factor.</p> <div data-bbox="507 882 1273 1346" data-label="Figure"> <p>The figure consists of two charts. The left chart is a line graph showing 'Total National Demand (MW)' on the y-axis (0 to 6,000) against 'Morning Trading Period' on the x-axis (1 to 15). The demand starts at approximately 4,000 MW at period 1, drops to a minimum of about 3,400 MW at period 9, and then rises to about 5,200 MW at period 15. The right chart is a stacked bar chart showing 'Minimum Generation Without Spill, Venting or Wastage (MW)' on the y-axis (0 to 6,000). The bar is composed of several segments: Geothermal Current (yellow, ~500 MW), Geothermal Future (green, ~300 MW), Wind (white, ~1,200 MW), Minimum Huntly (2 units) (grey, ~200 MW), Minimum New Plymouth (1 unit) (dark grey, ~200 MW), Taranaki CC (min) (red, ~200 MW), Otahuhu B (min) (blue, ~200 MW), e3p (min) (light blue, ~200 MW), Cogeneration (dark blue, ~200 MW), and Must run hydro (light blue, ~200 MW). A legend on the right lists these categories.</p> </div> <p>This study may be run in co-operation with NZWEA. There are significant energy efficiency implications of this issue that may warrant much wider remedies e.g. load shifting, limited pumped storage.</p>
<p>Timing</p>	<p>This work is not urgent, but should be done over the coming year. It could await appointment of a new Executive Officer of the New Zealand Wind Energy Association.</p>
<p>Parties Involved</p>	<p>This is a project that can reasonably have direct sponsorship by a number of generators, Electricity Commission, EECA and possibly MED. The report should be prepared by electricity market specialists, and Concept Consulting has already started work on developing scope and budget.</p>
<p>Linkages Between Activities and Priorities</p>	<p>This report aims to develop a more accurate view of future generation load factor and revenue potential. This may allow timely changes to consent conditions (to have these rephrased in terms of weekly or annual takes) and timely study of geothermal wells within a field capable of use for load following (for a specific benefit. Recognition of some load-following capability on a field could lead to installation of additional generation capacity to take advantage of the load-following mode.)</p>
<p>Financial</p>	<p>\$20,000</p>
<p>Outcome Monitoring</p>	<p>A report will be published on the NZGA website and be made available to the sponsoring parties.</p>

10. Geothermal Short Course

The Nature and Scope of the Activity	An overview short course on geothermal energy will be provided on an as required basis.
Rationale	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.
Timing	A short course is normally timed to coincide with the Workshop and Seminar, to maximise the benefit for the participant.
Parties Involved	The course will be arranged through the Executive Officer. It would involve staff from the University of Auckland and from consultancies (some of whose time may be provided on a voluntary basis). Participants include a range of key people and interested parties.
Linkages Between Activities and Priorities	The short course provides focussed information transfer, assisting decision making for development.
Financial	\$5,000 (assuming some services are provided on a voluntary basis)
Outcome Monitoring	Courses will be held when there is sufficient demand, and will be advertised on the website.

11. Regional Branch of the IGA

The Nature and Scope of the Activity	NZGA is seeking to establish a Regional Branch of the IGA. This will require lobbying of various geothermal associations and individuals in the region. The Regional Branch may be able to take on members from countries that do not have their own associations e.g. Australia, Fiji.
Rationale	Stronger international linkages are always to be encouraged. IGA has had little focus on the region in terms of programs offered and a Regional Branch could add further lobbying weight for tailored activities in the region.
Timing	Jim Lawless is the champion of this task and has to the end of 2007 before his term on the NZGA Board ends and his current elected term on the IGA Board ends.
Parties Involved	Jim Lawless (SKM) with the support of the NZGA Board working with a range of international geothermal association representatives.
Linkages Between Activities and Priorities	International linkages and additional IGA program focus should lead to improved information dissemination and improved networking.
Financial	All costs borne by SKM
Outcome Monitoring	At the end of this process a Regional Branch should be formally established.

12. Position Paper on Overseas Treatment of Renewable Energy

The Nature and Scope of the Activity	A report will be prepared identifying regulatory instruments that can be used to accelerate uptake of renewable energy options. The report will comment on the effectiveness of these measures where they have been trialled to date.
Rationale	<p>The current NEECS and Climate Change initiatives have not been particularly effective at increasing renewable energy uptake over the business-as-usual base case, particularly given the steady growth in energy demand.</p> <p>The replacement NEECS media releases have already indicated the need for a more aggressive approach required to secure greater uptake, so international policy initiatives will be researched by EECA and other government agencies.</p> <p>Obviously, it is hoped that the geothermal industry will benefit as a result of wider renewables uptake, including accelerated uptake of geothermal energy options.</p>
Timing	This paper could usefully inform the upcoming EECA workshops and consultation on the replacement NEECS and would be most usefully complete before June 2006.
Parties Involved	<p>NZGA members should feed through any knowledge they have of useful interventions to the Executive Officer.</p> <p>The report will be written by a competent policy review consultancy.</p> <p>The report will be provided to EECA.</p>
Linkages Between Activities and Priorities	Currently government is seeking to be informed on issues related to a National Energy Strategy and a replacement National Energy Efficiency and Conservation Strategy, with NZGA's particular focus being on renewable energy targets. This activity gives information on policy initiatives that can accelerate uptake of renewable energy options, including geothermal energy. NZGA members will interact with "policy people" broadening their own thinking and understanding the context in which development will occur.
Financial	\$15,000
Outcome Monitoring	A report on international policies around renewables incentives will be published on the NZGA website after Board approval. Copies will be provided to EECA.