NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

# Scholarship, 2004

## Geography (93401)

## National Statistics

## Assessment Report

## Assessment Schedule

# Geography, Scholarship, 2004

## General Comments

The paper was set with the desire to:

- select a theme (context) of contemporary geographic and wider human significance
- select a theme (context) for which a range of different resource materials were available
- ask questions that fitted within the parameters of the published Geography Scholarship Standard (Ministry of Education) and the Assessment Specifications for Scholarship Geography (NZQA)

The intention was to provide both a context and set of resource materials that would be accessible for the average Year 13 student. Questions were set to allow candidates to show their understanding of geography and their attributes 'as geographers'. From the outset in the setting process, the aim was to provide candidates with every opportunity to reach Scholarship standard. The context, resource materials and questions were not set to be 'gatekeepers' of the Scholarship standard. The intention was to establish the standard required for Scholarship within the marking schedule and by the marking process.

Approximately 300 candidates sat the Geography Scholarship examination. 37% of these candidates gained Scholarship. Three candidates reached the standard required to be awarded Scholarship with Outstanding Performance.

At the meeting to set the marking standard for Scholarship, there was no predetermined number or percentage of successful candidates in mind. The purpose of the standard setting meeting was to establish the requirements that needed to be fulfilled to reach Scholarship standard. This standard was set through the development of a marking schedule and judgement statements, plus the use of actual candidate papers to establish exemplar answers that reached the standard required for both a Scholarship pass and a pass with Outstanding Performance. It was found that holistic marking of answers worked best. Guidelines were used to check that particular requirements were being met in the answers but, overall, a set of check boxes was found to be less useful than 'impression holistic marking'. There were many different ways candidates could show themselves to be worthy Scholarship candidates and many very different style answers reached the standard required.

To reach Scholarship standard, candidates needed to be able to :

- write an answer about electricity issues that focused on the questions asked. There were a variety of approaches that could be taken and be successful
- write confidently using good essay structure (the elegant answers stood out very clearly)
- incorporate and integrate resource materials provided into the answers
- incorporate relevant geographic ideas, refer to perspectives and integrate maps/diagrams into the answers
- show understanding of the nature of geography, of geographical approaches and of ways in which geographers 'view the world'.

Both answers (Questions One and Two) were required to reach the standard for the award of Scholarship overall for the paper. Both answers needed to be deemed as being of 'outstanding performance' for an overall Outstanding award being given.

By the amount of highlighting of parts of the questions and use of the planning pages, it was clear that candidates were practiced in analysing questions carefully and planning their answers before beginning to answer. This was good to see.

Although there were a few candidates who wrote very little (less than one page on each question) or who answered only one of the two questions, the majority of candidates provided answers that gave themselves a chance of reaching the standard required by writing at some length about the electricity issues and options theme on both questions.

Many candidates wrote answers that fell just below the Scholarship standard, despite being lengthy answers. These were often answers that were written around the questions asked – they were about hydro-electric power (HEP) and electricity but failed to fully discuss reasons for the different views

(Question One) and / or lacked critical evaluation (Question Two). These were candidates who typically would be solid Level 3 candidates and candidates who in the old University Bursaries examination would be scoring in the 65–low 70s: that is 'A' pass candidates but falling below an 80+ mark. Reaching Scholarship standard requires intellect and good literacy skills as well as a sound understanding of geography – it is a step up from Level 3 in terms of answer requirements.

Better candidates advanced their discussions with the use of words and terms like "stakeholders, scale, polarise, systems, irrefutable, justified, indirect/direct, long/short term, local/national/global, cost benefit analysis, patterns, systems, substantiated, invalid, lobby, viable, ethical, dilemma, proponents/ opponents, debate, bias, proximity, contrast, location, accessibility, perception, values".

These candidates incorporated reference to and use of geographic ideas within answers and kept the focus of the answer on the questions set. Similarly, the incorporation of, and reference to, relevant adapted or original diagrams and maps into answers was a feature of the better answers. They also included brief but focused introductions and conclusions with their essays.

Perspectives are a problem – for the examiner as much as for the teacher and student! The Scholarship Geography standard explicitly refers to 'evaluating geographic perspectives'. There is a list of perspectives referred to in Explanatory Note 9 of the standard. Explanation and some elaboration of these perspectives is given in the linked TKI website. This elaboration does not make easy reading. These perspectives are difficult to teach and learn about. Few school geography texts refer to and incorporate such perspectives. The book *Explorations in Human Geography: Encountering Place* (Oxford University Press 1999) is written by New Zealand geographers and provides a readable introduction to perspectives. It is aimed at undergraduate students studying geography but would be a good teacher read for some of the more modern approaches to geography (especially chapter 1 for perspectives, but the whole book is a good geography professional development read).

Where we stand, who we are and what we value all influence the way we see and view things. The perspective we have and the perspective we come from can influence the way we perceive things. Perspective, values, outlook, perception, opinions and judgements are intertwined.

In terms of the HEP and electricity issues raised in the two scholarship questions these perspectives were included and used with success by candidates:

- a local perspective: (not just how Waitaki Valley residents and Cree see/perceive HEP projects but **why** they hold the views they do – discussing what lies behind their views brings in the idea of perspectives)
- perspective of the indigenous people (the Cree)
- perspective of younger people seeking work / perspective of older people
- perspective of conservationists and environmentalists
- capitalist perspective (power generation companies – Meridian and Quebec Hydro)
- government perspective.

## National Statistics

| Number of Results | Percentage | | |
|---|---|---|---|
| | Not Achieved | Scholarship | Outstanding |
| 302 | 62.2% | 36.8% | 1.0% |

## Assessment Report

### Specific Comments

### Question One

The question invited identification and discussion about why people have varied views of hydro-electric power projects. Many answers failed to reach Scholarship standard because they focused totally on

describing the 'traditional and accepted views' of the pros and cons of hydro as a means of electricity production. Candidates who answered this way failed to recognise that the question required discussion of **why people have such varied views** about HEP projects and this required abstraction and integration of ideas.

The question invited candidates to include reference to geographic ideas and perspectives within the answer. Better candidates often linked ideas and perspectives, eg when discussing how the location of people / where they live can shape their view. Local people in the Waitaki Valley often feel a personal attachment to the river (they see it as 'their river' and part of their heritage) and consequently they viewed the Aqua scheme in a negative way because it would disrupt and spoil 'their river'. This view was then contrasted with a positive view about Aqua from people whose views were shaped by a concern for ensuring a supply of power to their homes and factories in the North Island.

The indigenous / local perspective (of the Cree) about James Bay hydro schemes provided a lot of scope for discussion of the conflict that can arise from concerns for the natural environment and heritage of their home area, against the economic benefits to the people of the schemes. Better answers recognised that, in a recent referendum, the Cree have supported expansion of hydro schemes in their area. Several candidates related the feelings of some letter writers wanting to preserve the Waitaki River, and Cree upset at the destruction of their rivers, to the concept of kaitiakitanga: *"They feel the Rupert (River) is the most important thing they have to pass on to their own children. This sentiment is, in a way, an echo of the Māori concept of kaitiakitanga – the caring for the environment for the mutual good."*

It was also interesting to have a few candidates tackling Question One, but not confining their discussion to HEP projects per se. Instead, they discussed how people form different views about HEP projects by weighing them up against alternative ways of generating electricity – a case of candidates seeing the question differently from the examiner but still writing acceptable and, in some cases, very successful answers.

**Quotes from the introductions and conclusions of high quality answers:**

*"Such a contentious issue as power generation certainly does have a range of different perceptions and viewpoints …"*

*"There is a vast array of argument for both the development and abandonment of HEP schemes …."*

*"Electricity generation is surrounded by much impassioned debate …."*

*"Vast differences of opinion remain over the suitability of hydro electric power as a means of electricity generation …."*

*"Throughout the world there are those who adamantly support hydro electricity schemes and those who irrefutably oppose them. The reasons for these stances are obviously varied but some patterns and connections can be made between their stances and their cultures, places of residence and economic importance …"*

**Question Two**

This question required a synthesis of a lot of information and ideas. A number of candidates successfully integrated into their answers information and ideas from beyond the resource material provided. The key instruction to *critically evaluate* was recognised and attempted by most candidates. As in Question One, the best answers stood out clearly: they were well-constructed answers that showed a high level of literacy, good understanding of geography, and included reference to a wide range of the resource materials provided. There were some interesting and perceptive comments about the reliability and objectivity of the resource materials. One candidate made the lovely comment when referring to the Chris de Freitas article – *"…as a geographer his view will be quite balanced"* – a highlight of a long day of marking!

Opinion varied (as expected) about whether or not the use of renewable energy resources was the best way of meeting our future electricity needs. There were some very good discussions arguing about renewable / non-renewable / conservation approaches from angles of reliability and security of supply, and also discussing short and long term scenarios. Generally renewable sources were favoured, and nuclear power was offered as a possibility despite more candidates than expected recognising its lack of

public and political support. Fewer candidates picked up on a conservation / reduce demand / small scale self-reliance approach.

**These are some quotes from outstanding scripts that shows their ranges of introductions and conclusions:**

*"New Zealand is at a turning point in its development. Unless action is taken now we face power cuts and their associated implications in the future …"*

*"The view that 'the use of renewable energy resources is the best way to meet the electricity needs of New Zealand in the future' is a view that lends itself to fierce debate …"*

*"We need a diversified approach – sole reliance on renewable sources of electricity production is not a good idea …"*

*"Renewable resources are the best way of meeting future demand for electricity. We need a diversification of renewable methods plus reduce electricity wastage …'*

*'Diversification of generation methods is needed and nuclear generation should not be discounted …"*

*"We need to focus on ways of reducing electricity usage and also concentrate on small scale self sufficiency …"*

**Outstanding Performance**

Only three candidates were deemed to have reached Outstanding Performance. Most of the quotes in the previous section of this report were taken from the answers of these candidates. These candidates wrote high quality answers to both questions. Their answers were elegant, detailed, focused on the two question topics and were easy to read and to mark. They integrated facts, ideas and diagrams into well-planned and well-constructed answers. These candidates were confident writing about and discussing issues, ideas and perspectives, and showed a good understanding of and feel for geography.

**Supplementary Information**

For teachers of Scholarship Geography in 2005 who wish to use this subject in their classes, reproduced below is a copy of a discussion between two energy experts about electricity generation options. They were discussing almost the exact Question Two examination topic.

*Keith Turner and Stephen Barrett:* Wind, water ... and a word for the gas

30.12.04 New Zealand Herald

*Meridian Energy chief executive Keith Turner is a vocal champion for renewable energy sources. But he has been accused of being too optimistic. Here he debates "that renewable energy sources are the best option for meeting electricity demand for the next 15 years" with one of his chief critics, Contact Energy CEO Stephen Barrett.*

Dear Steve

New Zealand, of all the countries in the world, is uniquely placed to have it all in regard to electricity – secure supply, at a fair price, with minimal environmental impact.

Being a long, thin country in the middle of an ocean means we get lots of wind and water.

The synergies between wind and hydro generation make a renewable future possible. Broadly speaking, when the wind blows we can preserve our hydro storage. When it stops, we can quickly start our hydro plants.

The fuel is clean, plentiful and free.

The alternative is to burn carbon, to invest a billion dollars in a terminal to import liquefied natural gas (LNG) and sign the country up to decades of exposure to international fossil fuel markets.

We saw the consequences of that in the oil shocks of the 1970s.

Renewable electricity meets the preferences of the vast majority of New Zealanders. A recent Energy Efficiency and Conservation Authority survey showed:

* 82 per cent and 79 per cent of people approve of wind and hydro generation respectively.
* Wind is the preferred generation method for 40.9 per cent, and hydro is preferred by 40.7 per cent.
* Coal is least preferred, followed by gas.

Keith
* * *
Dear Keith

Firstly, to say that there are only two choices – wind and hydro or burn carbon and commit to LNG – is misleading.

New Zealand has a range of choices that can meet our future electricity needs, including hydro, wind, geothermal, gas, coal, solar and energy efficiency.

The second big problem is appearing to suggest that wind and new hydro developments can replace Maui gas and meet growing electricity demand.

About a quarter of New Zealand's electricity comes from natural gas, mainly from Maui. Wind produces about 1 per cent of power needs.

So, not only is it misleading to suggest that new renewables can easily fill the energy gap, but it is heroic to presume that sufficient satisfactory sites are available for the implied large-scale construction of renewable generation capacity.

While polls show people prefer renewable energy sources, they also show that the highest value is placed on security of energy supplies – keeping the lights on.

New Zealand needs to look at all its options, including backstops such as LNG, so that if local gas supplies come up short, we will be able to deliver security of supply.

Steve

Dear Steve

The question is whether renewables offer the "best option" for meeting electricity demand in the next 15 years. Not the "only" option.

Meridian agrees that we will be best able to meet electricity demand by harnessing a range of fuels. But our view is that renewables are the best option of the fuels available.

New Zealand is a rare example of a developed country whose electricity demand is met mainly from renewable resources. Our electricity supply has been as reliable as – and cheaper than – that of almost any other country. Why change this successful approach?

We have sufficient opportunity to develop further hydro and wind capacity to see us through the next 15 years and beyond.

There will always be a back-up role for non-renewable hydrocarbon fuels, and we need to step up our efforts to find a domestic resource to replace Maui gas, to fill the 25 per cent gap in our electricity supply it occupies.

But it is to our ample, clean, renewable fuels – water and wind – that Meridian will continue to turn to as the "best option".

Keith
* * *

Dear Keith

We agree that the way to meet future energy needs is to harness a range of fuels and technologies.

And there is no doubt that hydro and wind will make important contributions. But we can't agree that wind and hydro alone will be sufficient to meet projected demand growth over the next 10 to 15 years.

We just can't see that there are enough sites capable of gaining a resource consent at economic prices to achieve that.

Such an outcome would require construction of hydro and wind generation on an unprecedented scale.

Thermal fuels are also rather more than a backup. Natural gas is a core part of the electricity system.

We would prefer to continue obtaining natural gas from domestic gas fields. But it is prudent to ensure that the LNG option is available as a backstop.

In our view, the "best" option is not to put all our eggs in one or two baskets.

We have numerous options and we will need them all to provide secure electricity supply.

Steve
* * *

Dear Steve

In looking to meet the electricity demand growth of the next 10 to 15 years, some important questions have to be asked.

Gas provides 25 per cent of supply now but when Maui runs out in a few years, will we have found a replacement?

Or will that 25 per cent have to be sustained using imported LNG, with its dire economic, social and strategic risks?

We can cross our fingers and hope we find sufficient indigenous natural gas – and we'd better find it soon – or we can develop generation capacity using the clean, renewable fuels we already have in abundance.

New Zealand must be as self-sufficient as possible in a commodity as fundamental as electricity. Our economy and society depend on it.

Renewables are the key to self-sufficiency – and they will have a lower price, especially if thermal fuels begin to attract a carbon cost.

Security of supply at a reasonable price, with the lowest environmental cost, has to be our aim.

Meridian is not arguing that renewables are the only option for achieving this, but we firmly believe they are the best option.

Keith
* * *

Dear Keith

Every choice about energy supplies involves trade-offs between price, environmental impact and security of supply.

New Zealand cannot avoid making those trade-offs as we face important energy choices in the next few years.

We have enough available options to manage the energy gap created by the rundown of the Maui gas field and the continuing growth in demand for electricity.

But getting the best outcome requires prudent planning. There is nothing worse than trying to manage such risks during periods of crisis.

When limitations on hydro resources led to the country facing electricity black-outs, a stark truth emerged – most people expect secure electricity supplies as a matter of course.

Considerable willingness emerged to sacrifice environmental and price considerations to have secure electricity.

To avoid making our choices in a crisis, we need to be prepared to implement all options, from building wind farms or new hydro dams through to thermal options.

To do otherwise is to needlessly risk New Zealand's economic and social well-being.

Steve

# Assessment Schedule

# Scholarship Geography (93401)

## Evidence statement

### Question One

The question is open-ended and can be addressed in many ways.
The bulk of the answer is expected to be framed around the resource materials (geographic context) provided. Geographic methods, skills and ideas referred to in the Syllabus for Schools : Forms 5 to 7 Geography and perspectives and concepts referred to in NCEA geography achievement standards (http://www.tki.org.nz/ncea) should also be used to support the answer. However, use of ideas, understandings, knowledge and comment from beyond the Resource Booklet material and from beyond the syllabus and NCEA sources is acceptable providing it is integrated within the answer.

**Discussion could include:**

- Discussion should focus on WHY people hold the views that they do and NOT just what the views are
- Why people view and judge the pros and cons of hydro-electric power (HEP) differently – look for perspectives being included in the discussion
- An overview of HEP should be included along with the use of the two HEP case studies
- HEP today has more opponents today than it had in the past – it is not perceived so favourably today as it was in the past
- HEP used to be seen as an efficient and clean way of producing electricity from a renewable resource. Now HEP schemes have questions about environmental and social disruption hanging over them
- Both Project Aqua and James Bay Hydro schemes have supporters and opponents
- Project Aqua has been abandoned, James Bay is operational and has further developments taking place
- Approx 60% Canadian electricity and 64% NZ electricity comes from HEP
- Some views about HEP projects are based on an evaluation of whether or not more electricity is actually needed at all
- Some views are based on evaluating HEP as a means of electricity generation against other alternative ways and asking the question of which way(s) are the best?
- Water is a renewable natural resource and HEP schemes are a good use of this resource
- Debate about ‘more electricity from HEP places an over-reliance on just one form of electricity generation and that HEP depends on the vagaries of rainfall’ – an unreliable source of electricity generation
- The environmental costs (disruption of nature arguments –to natural river flow, to wildlife and vegetation, land loss where lakes are formed) are argued
- HEP seen to cause environmental disruption to large areas
- Social costs are argued – loss of recreational opportunities on natural waterways
- Social costs are argued – disruption to local lifestyle, introduction of undesirable outside world influences (Cree traditional lifestyle and culture disrupted by southern influx))
- Social and economic benefits to local community argued – more jobs and economic multiplier
- Local views are often different to views from the outside – local/national views
- Views of older and younger people vary
- Big corporations versus local people – views and interests differ
- Environment versus economic arguements
- An emotive issue – nature : rivers, wildlife and landscape hold are special place for many people

**Question Two**

The question is open-ended and can be addressed in many ways. The bulk of the answer is expected to be framed around the resource materials (geographic context) provided. Geographic methods, skills and ideas referred to in the Syllabus for Schools : Forms 5 to 7 Geography and perspectives and concepts referred to in NCEA geography achievement standards (http://www.tki.org.nz/ncea) should also be used to support the answer. However, use of ideas, understandings, knowledge and comment from beyond the Resource Booklet material and from beyond the syllabus and NCEA sources is acceptable providing it is integrated within the answer. There has been a lot of debate in the media during this year (2004) about New Zealand's future electricity needs and supply options, and this could well be included within candidate answers.

**Critical evaluation could include:**

- The advantages/disadvantages of non-renewable (coal, oil, natural gas, nuclear) versus the advantages/disadvantages of renewable (water, wind, geothermal, sun, waves, tides) methods of producing electricity are evaluated – short and long term viability of each type, ability of each type to meet demand, security of supply, environmental cost-benefit analysis of each type, political and public acceptance of each type
- Do we aim to meet whatever the future demand is for electricity (brings the fractious debate about which method(s) is 'the best') or do we approach from the angle that the debate should be about reducing demand and the best way(s) of doing this? – ie that the question itself becomes redundant?
- Self-sufficiency approach – need to have homes that are self-sufficient in energy needs – low energy use homes that use renewable means of generation.
- Renewable – Non-renewable production methods involves weighing up their economic cost (how much will electricity produced this way cost in $ terms), environmental cost, security of supply issues, long term viability, ability to meet demand (what amount of electricity can be produced by this method)
- Debate not just about production method(s) but also where the production should be – Auckland has the biggest demand but most production takes place outside of Auckland – raises issue of transport of electricity and could we best be focussing on how to generate in the Auckland region?
- 'How to conserve and reduce demand for electricity' is the way to ensure a sustainable future and this is a better approach than debating 'what is the best way of meeting ever increasing demands'
- Need for a diversified supply rather than reliance on one or two sources only is more important than whether the supply is from renewable or non-renewable methods
- Diagrams on page 13 of the resource booklet (Resource D2 : Options and Issues) capture many of the arguments and points of debate.
- Perspectives in Resource D3 on page 14 of the Resource Booklet could be discussed : Anthropocentric versus Eco and Biocentric
- Also more general environmental/conservationist perspectives and perspectives of government, perspectives of different scientists
- Wind generation features as a future possibility in some of the resource booklet articles and has been a news item through this year
- Also in the news more than the articles is atmospheric pollution relating to fossil fuel burning, greenhouse gases and the Kyoto agreement.
- De Freitas comes down on the side of coal – we have a lot of it, it can be used to generate large amounts of electricity in the short to medium term, and there are cleaner coal burning technologies now available
- Look for an overview answer that includes reference to, and incorporation of case study material – Aqua and James Bay

## Judgement Statement

**Outstanding scholarship:** Outstanding scholarship in both questions

**Scholarship**: Scholarship in both questions