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About us

Serving the New Zealand metal-based industry.

HERA creates value by being the stimulus for research, innovation and development – delivering a trusted national centre for design, manufacturing technology, inspection and quality assurance.

Our commitment to help our members stay one step ahead is strengthened by our vision to be the leading catalyst for metals innovation internationally.

Our specialists in heavy engineering research, industry development, training, advocacy and marketing allow us to partner with our members and clients across the globe – to create opportunity and lead bigger picture thinking.

Industry owned. Member driven. Future focused.

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**A multi-billion
dollar industry**

1. Executive summary

An overview of HERA and its memberships position to government and wider public sector issues.

In the heavy gauge metals engineering industry, HERA represents a strong and growing multi-billion dollar industry sector also engaged in exports. This industry is strategically important to New Zealand's economy as a high value and high paying sector competing effectively against imports.

With the right focus and incentives it has good niche market export potential as part of New Zealand's business growth agenda. We strongly support policies aimed at developing this further, particularly if our metal-based engineering sector is playing a major role through strategic investment, based on a strong innovation culture grounded in R&D.

In summary the following recommendations are made to the specific heading:

Industry innovation policy

Increasing business R&D expenditure

- More Government R&D money is channelled through industry rather than research provider to industry. This will result in industry deciding what research provider they wish to spend R&D funds with that best meet their needs - determining who expands and thrives.
- In academic programmes Government R&D policy puts more emphasis on industry involvement to determine research needs and its funding, the performance of the research, and the governance process.
- That balance is maintained between supporting high and low tech R&D based on the fact most growth and employment emanates from low to medium tech industries.

R&D incentive schemes

- To introduce with priority the proposed R&D tax credit scheme as a broad-based mechanism for industry transformation.
- Consider extending current eligible Business Expenses for R&D (BERD) beyond the current Frascati definition and include business and R&D strategy development expenses.
- Investigate shift of MBIE R&D growth grant funds into the R&D tax credit scheme to lift tax credit rates and uptake, and extend eligible expenses. All with the added benefits of freeing up CI R&D grant administration costs.
- Undertake a thorough analysis of innovation needs in the typical NZ SME based manufacturing business, and come with an effective taxation and innovation incentive scheme for them.

R&D grants administered by Callaghan Innovation

- Continuous availability of company-specific grants over several years to help embed R&D functions within the business rather than a more transformational longer term commitment around R&D capability development within the industry client.
- Widening the range of approved research providers for the R&D grants schemes to include non-public sector or independent research providers such as HERA.

- Allowing the combined funding of research projects by companies that have common interests e.g. in renewable energy or resilient building systems.

Support for self-funded industry R&D via industry levies

- The Government increases support for manufacturing sector groups to create stable industry levy funded R&D streams, provided industry groups are unified behind funding R&D via compulsory and legislated levies.
- That independent research organisations funded via research levies from industry and that provide a unique national capability are eligible for government R&D co-funding.
- That collective levy-based R&D funding from industry is considered equal to individual business expenses on R&D.

Regional and sector specific research focus

- MBIE increases, or at least maintains its commitment to regional research institute and research partnership programs.

Contestable research – Endeavour Fund

- That the contestable MBIE Endeavour fund has specific national priorities re-established and low emission technologies such as geothermal energy and waste heat are included.
- That more emphasis is put on impact when rating applied industry driven research programs with generally lower science scores.

Recognition of R&D and expensing

- Making the early stage R&D commercialisation costs 100% tax deductible in the form of depreciation over the first year.
- Introducing faster depreciation rates on productive manufacturing equipment.

Economic development strategies

- Inclusion of local industry development objectives in national economic development strategies.
- Creation of “Projects of National Significance” for industry development - to focus national efforts.

The role of Government in developing sustainable and profitable local industries

Government Procurement Policy

That the following pre-election Labour policies are implemented:

- Government Procurement Rules will be amended to make job creation and the overall benefit to New Zealand, key criteria for decision making.
- To improve transparency, government organisations must report in a standard template to Treasury on the number of jobs and the wider economic benefits they have achieved from their contracting.
- The Rules apply to tenderers and their subcontractors

And also:

- MBE's procurement group performs an extensive education program for government procurement agencies to support the mandated application of the rules
- That mandatory application of the rules is extended into the wider public sector and SOE's

Procurement excellence proposal

- Develop the New Zealand-specific business case for procurement excellence via supportive research and case studies.
- Develop practical whole-life costing guidelines and implement in public sector procurement.
- Further the active adoption of procurement excellence by working with industry to assist in associated training - especially whole-life costing, cost management and development of industry participation plans.
- The overall implementation plan for the Government's Procurement Project has clearly articulated goal & objectives based KPI's which are reported on and verified by audit.

SOE procurement

- Consideration is given for SOEs to follow the above "procurement excellence" principles where SOEs support national priorities in industry development as lead user innovators.
- The SOE Act, and any legislation that considers the proposed mixed ownership model be reviewed in relation to best practice procurement.
- Major project procurement should promote establishment and publication of Industry Participation Plans (IIP).

Free trade agreements

- Free trade agreement terms are set based on the principle of equity between New Zealand manufacturers and those from overseas.
- The right to apply balanced decision making criteria considering social economic and environment impact of procurement decisions are explicitly considered in the agreements.
- Government play a major enforcement role so equal and fair trade conditions are maintained - including anti-dumping tariffs and other safeguard measures.

NZ transitions to a low emission economy

Role of local manufacturing industry

- Improving understanding of New Zealand's manufacturing potential to contribute to meeting our climate change targets, and explore and support development of a high value manufacturing base in niche markets where NZ has potential, such as biogas, biofuels, hydrogen technology, wind energy, geothermal and waste heat technologies.
- When developing strategies and programs including incentives, consider the macro-economic effects of any development and not just the narrow aspect influence on energy pricing.
- Promoting durable carbon pricing mechanisms that level the playing field for zero-net emitters, not inherent subsidies provided to hydro, fossil and geothermal power sources to date.

- Working towards a competitive wholesale electricity market where there is proper competition to build the next increment of power generation. At the very least this requires a transparent price on the long-term value of hydro-storage.
- Support local metals manufacturers NZ Steel and NZ Aluminium Smelter to remain sustainable manufacturers to the world market, on the premise that with their leading low emission profiles building them market share will drive others emissions down too.
- Renewable and low emission technologies are maintained as a priority in our contestable R&D grant schemes.

Building and construction

- The development of building and product environmental performance rating schemes is based on scientific Life Cycle Analyses (LCA) principles.
- Increased promotion of environmental rating systems including their application for NZ manufactured product providing Environmental Product Declarations (EPD's).

Building and construction industry policy

Public-sector funded research prioritisation

- Government funding of construction materials-specific research is focused on lifting housing affordability through innovation amongst all building system providers.
- BRANZ is supported in its effort to be the centre of excellence for construction research in New Zealand, with clear policies in place to provide building industry innovation in line with its Act "to provide research into improved techniques and materials for us in the building industry"
- Policy on R&D funded from the building research levy includes statements on construction material neutrality and levy allocation reflects construction material contributions to the building research levy.

Conformance of critical building products

- That MBIE consequently introduces the concept of third-party product conformity verification for all critical building products across all materials used in building and construction and mandates accordingly.
- That Government enforces the level playing field on product conformity of critical building products especially

Government officials statements on construction materials

- Government officials /agents stand neutral in terms of advocating one building system/material over another.
- Government, in its procurement guidelines, specifies only performance requirements that are free from prescriptive material or building system specific requirements.

Construction industry standards development

- That the performance of SNZ and SA is reviewed in the context of developing joint standards with Australia, with the view of better service, more accountability, improved industry consultation and cost effectiveness.

- That the planning of standard updates including associated funding requirements is improved, including better co-ordination with industry.

Today, the New Zealand's metals-based heavy engineering industry is a high value add, diverse and significant contributor to our economy.

2. About the metals-based heavy engineering industry

New Zealand’s metals-based heavy engineering industry goes back to the 1800’s, when the first foundries were established. Today, this high-value-added industry is a diverse and significant contributor to the New Zealand economy and spans base-metal producers, original equipment manufacturers, fitters and fabricators, and all of the essential supply chain in between.

Figure 1 below shows the development of heavy steel used in New Zealand and demonstrates a growing industry exceeding the pre GFC-height. At an assumed cost of \$ 5,000 per tonne of fabricated steelwork this makes the carbon steel based activity alone a \$1 billion industry. Add to this the more costly stainless steel and aluminium based fabrication and our over 600 member companies represent a multi-billion industry.

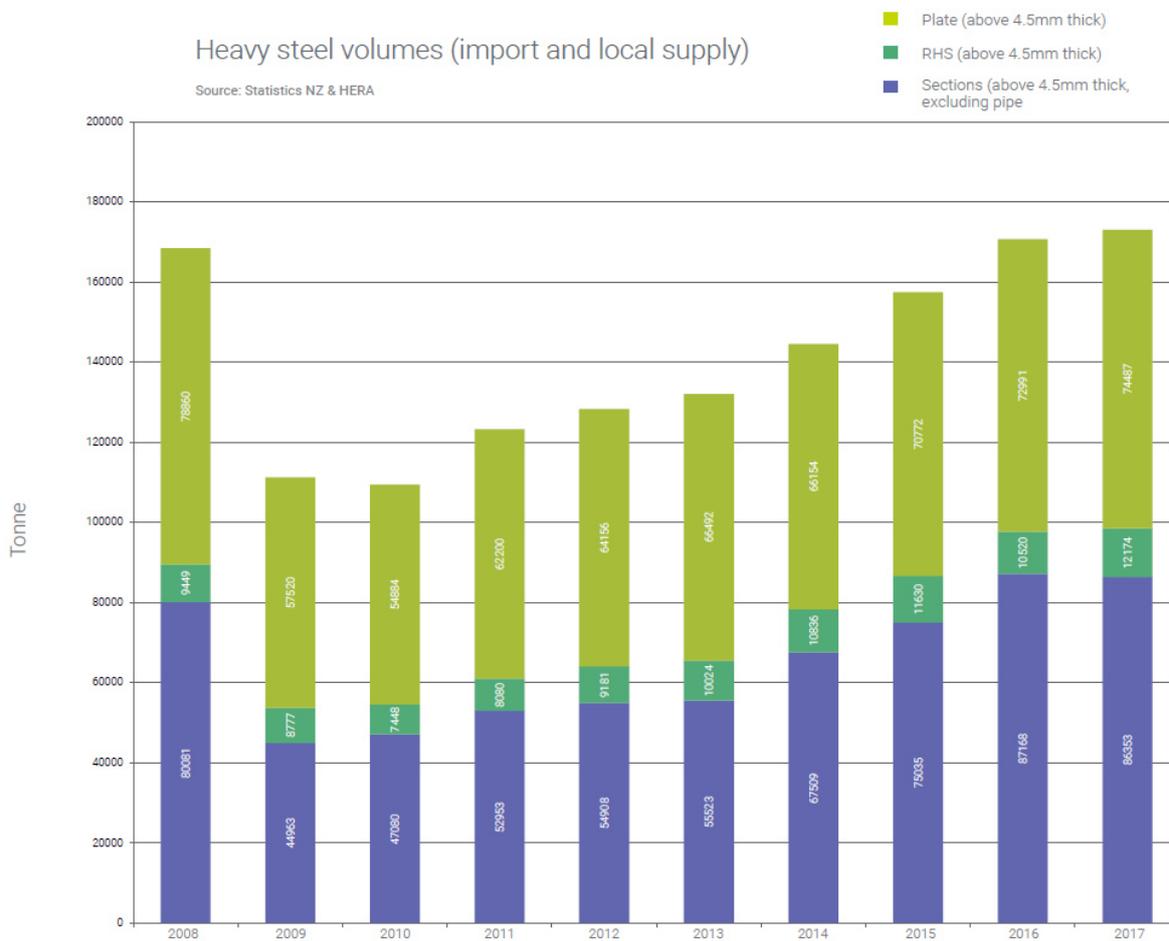


Figure 1 Heavy steel volumes in New Zealand fabrication

The metals-based heavy gauge fabrication and manufacturing industry is actively involved with and supports many other industries, such as food processing, energy generation, agriculture, transport and

construction. And as such, industry specific statistics figures are difficult to pinpoint. Due to this, we limit our comment to our area of expertise in the supply of products and services in the heavier gauge metals based products generally serviced by our membership, and where we've received industry feedback in areas including innovation, local industry development and the drive for increased exports.

Our industry sector is also a significant contributor to exports as shown in Figure 2. It shows the development of imports and exports values of a tariff item collective representing heavy engineering fabrication (but excluding manufactured metals products from NZ Steel and NZ Aluminium Smelter) and that our exports have stagnated over the last years, while imports flourished.

New Zealand Heavy Engineering Imports/Exports Collective (year ending June)

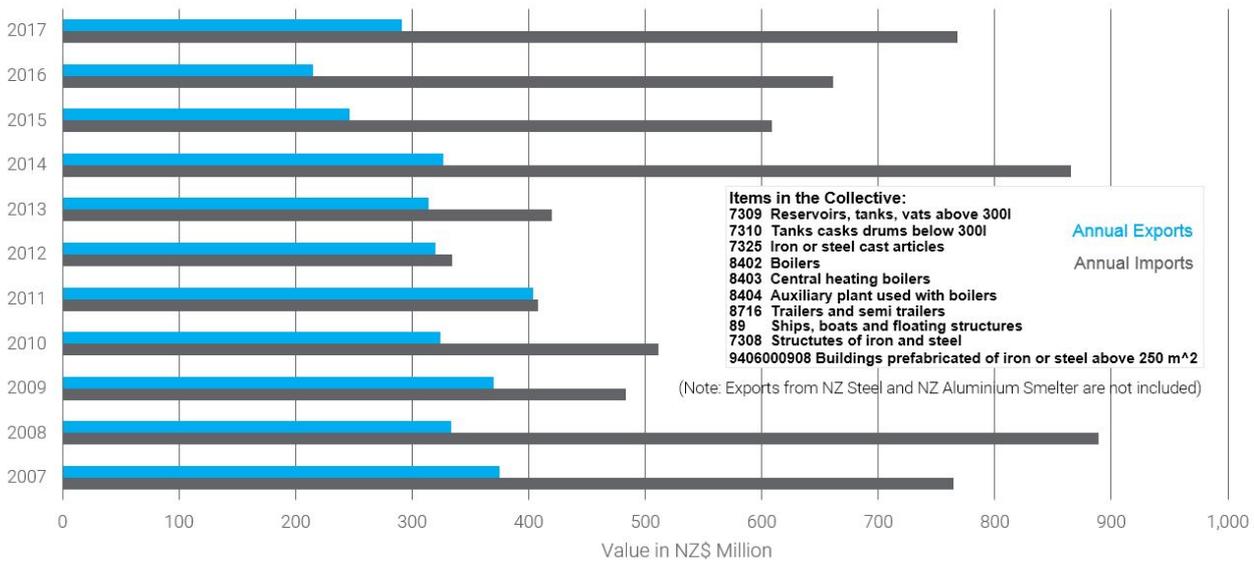


Figure 2 Heavy metals based engineering products imports and exports collective

This development is especially true for imported fabricated steel as shown in Figure 3, where steel construction imports for the Christchurch rebuild, larger projects in Auckland and public sector procurement were a major contributor.

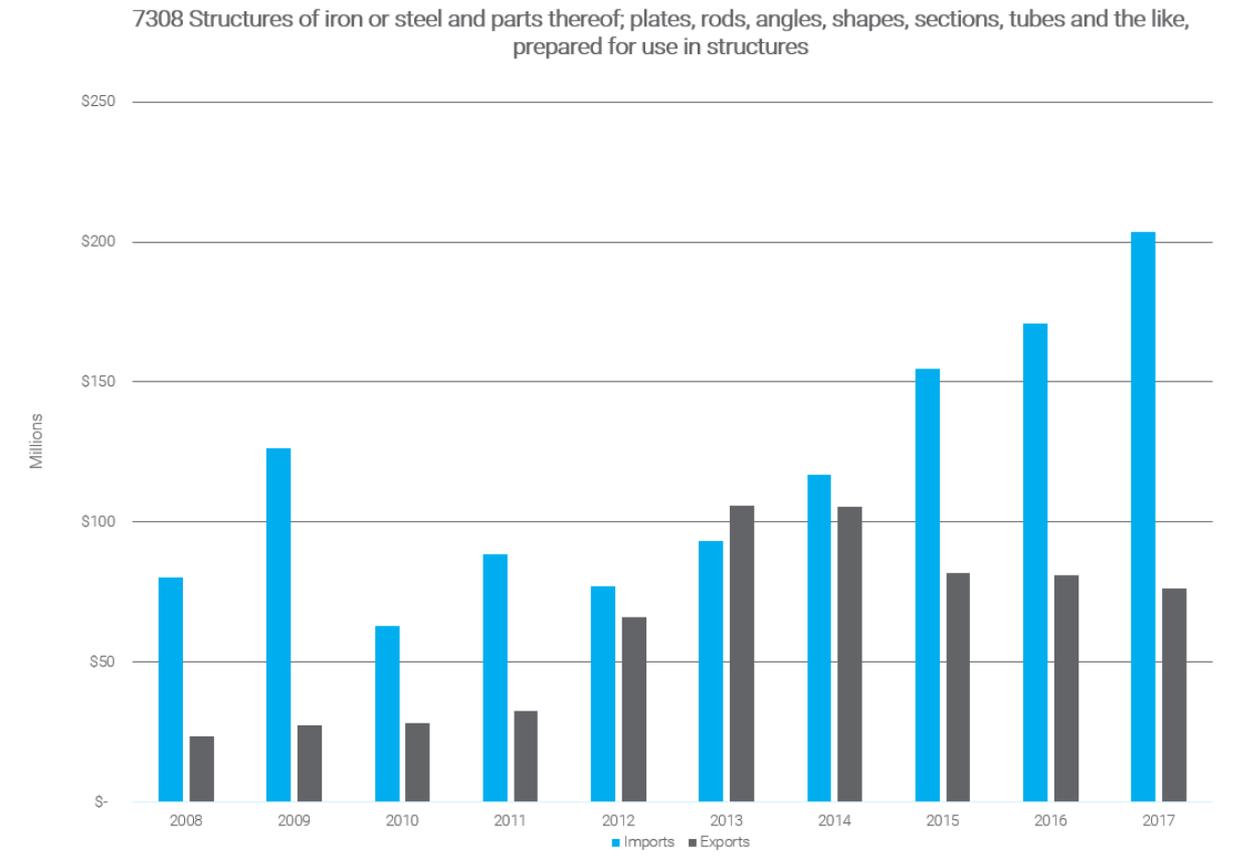


Figure 3 Tariff item 7308 including fabricated structural steel work

In conclusion, we represent a strong and growing multi-billion dollar industry sector also engaged in exports. This industry is strategically important to New Zealand's economy as a high value and high paying sector competing effectively against imports.

With the right focus and incentives it has good niche market export potential making it worthwhile to be focused on as part of New Zealand's business growth agenda.

3. Industry transformation policies

There seems to be overwhelming cross sector party and business commentator support for the notion of New Zealand becoming more prosperous and sustainable. Its economy must not only become more globally competitive and profitable, but also more export focused and environmentally aware.

Also, strong agreement exists that manufacturing, high-value-added and export-focused industry sectors will lead the way to improved economic performance and in the long term secure high paying jobs.

In the wider context we advocate for Sir Paul Callaghan policies to “Get off the Grass” (Callaghan & Hendy, 2013) and invest in targeted high-value and higher wage paying industries with good export potential.

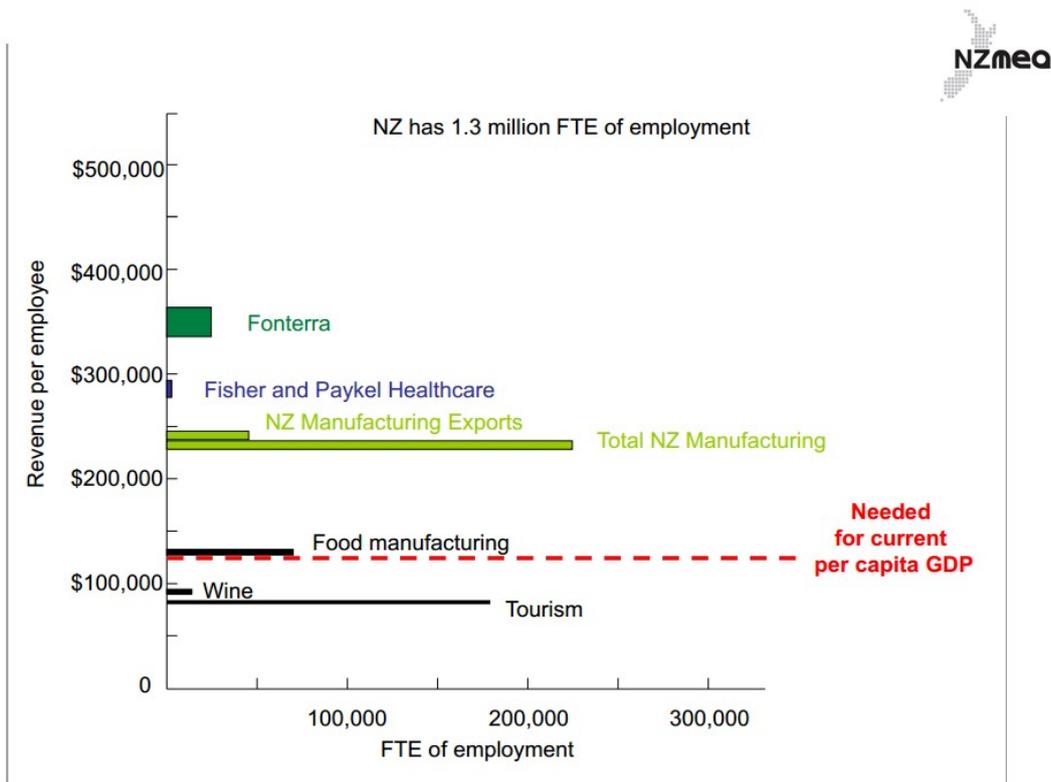


Figure 4 Every job created below the average income will in effect pull New Zealand’s average revenue per employee down (Source: NZMEA)

Looking at our current growth industries such as tourism or wine, you’ll note that they pull our average revenue per employee (and wages) down - driven by low-cost jobs, probably largely from immigration and seasonally based part-time jobs.

To achieve industry transformation, our industry needs policies that enable:

- Business to thrive and innovate.
- A focus on developing productive, high-value-added, export-oriented business sectors.

We recognise the current constrained economic climate and accept that there's limited additional funding available to support industry transformation.

However, industry believes that existing resources must be prioritised and strategically aligned for maximum effect to achieve industry development. This is because the profitable operation of the productive sectors provides the tax revenue required to support Government expenditure in non-productive areas such as social, health or educational activities.

For businesses to thrive and innovate, the business environment must be right. Many policies, such as tax and spending, influence this.

3.1 Industry innovation policies

The ability of any economy to thrive in a competitive global marketplace is enhanced through continued innovation. And as our industry and public sector R&D investments are the main drivers of innovation - our focus, is on policies that influence this.

3.1.1 Increasing business R&D expenditure

The reality is that compared with the average OECD nation, New Zealand's industry research spending (as expressed in the *BERD (Business Expenditure on R&D)*) is extremely poor.

We're last on the OECD R&D spending list, and the only country where industry R&D spending is well below the percentage for Government-funded R&D.

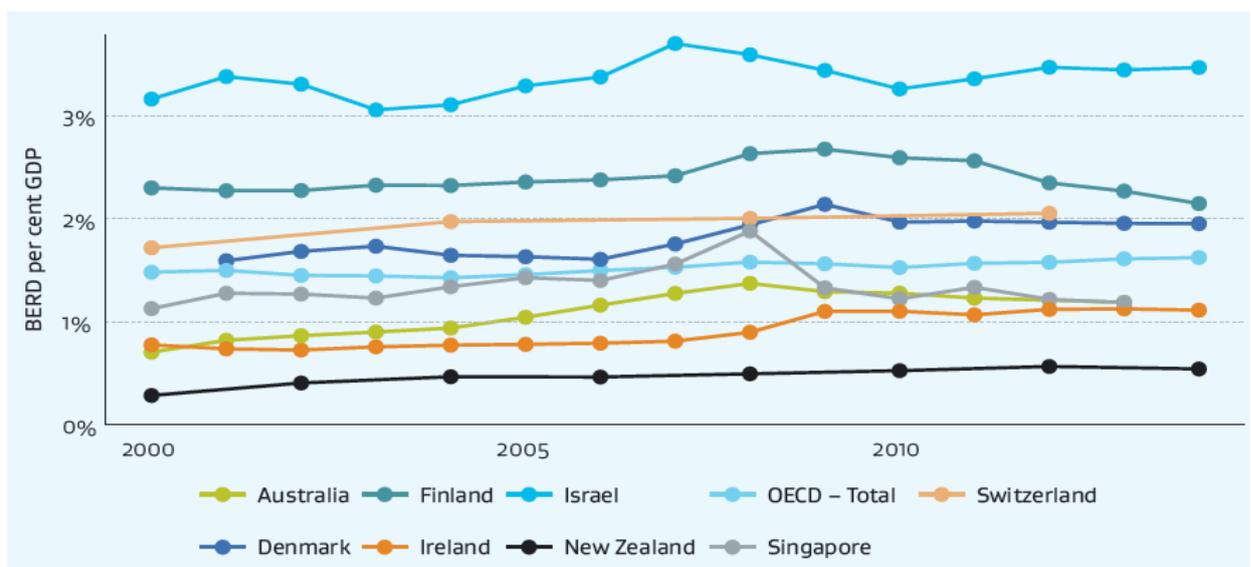


Figure 5 Business expenditure on R&D as a proportion of GDP (Source: MBIE 2016 Science and Innovation System Performance Report)

However, looking in more detail at R&D spending of business and government, it's important to look at the different sectors. In Figure 6, it shows the relative contribution of business and government to overall R&D investment is hugely variable across sectors.

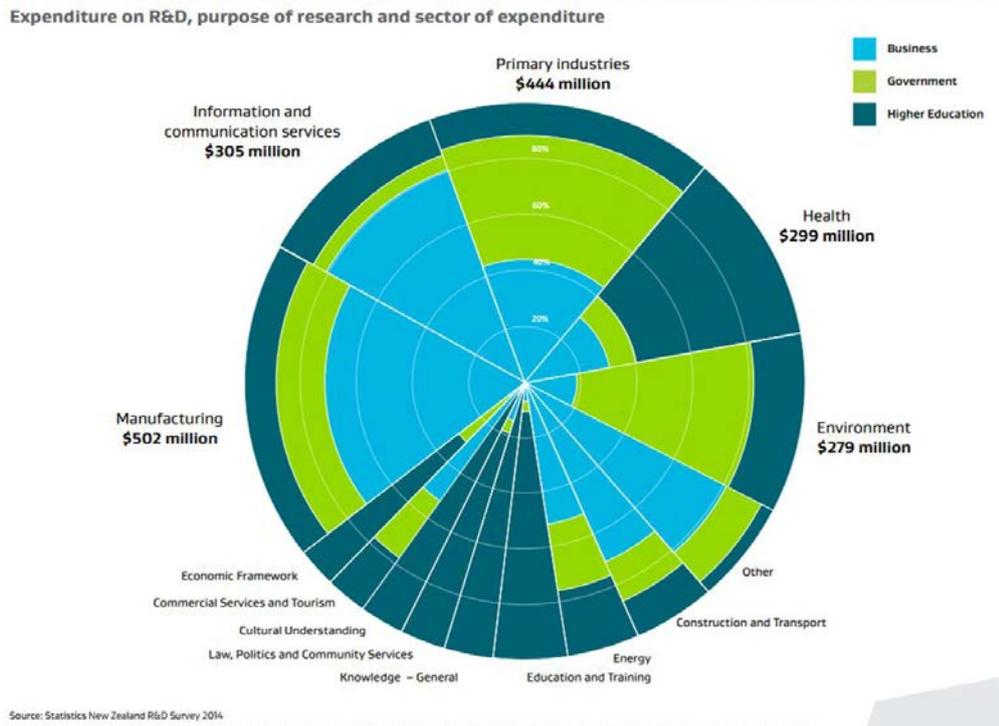


Figure 6 Expenditure on R&D, purpose of research and sector of expenditure (Source: Statistics New Zealand R&D Survey 2014)

Important to note on the positive side is that the sectors which our industry represents have a much higher relative share of BERD than primary industries. And likely this contribution is much higher as it is widely acknowledged that under current tax rules, there is no incentive for manufacturers to account separately for R&D activities therefore current data on BERD is likely to be an underestimate of unknown dimensions.

Fact is that New Zealand's primary industry via government and higher education receives about 55% of government R&D co-funding while manufacturing only receives 30%. A fact which does explain why NZ is leading the world when it comes to the primary sector innovation, but also why we are behind the world when it comes to manufacturing. Therefore we have to ask ourselves - where would New Zealand manufacturing be at if it would have been incentivised in the same way as the primary industry?

New Zealand aspires to emulate nations that have industry R&D spending significantly higher than Government R&D spending - where industry leads research, not the Government. However, in these nations industry R&D leadership likely happens through existing R&D business cultures and/or appropriate business conditions facilitated by their Government.

There is widespread agreement that spending on industry R&D needs to increase for New Zealand to become more innovative, competitive and export focused. And company-specific and led R&D strategies embedded in long-term product and services development strategies are the key for any successful industry transformation.

In our view, the only way to get there is via targeted innovation policies applicable to wide industry cross sectors. Where having easy to access and manage incentives for those willing to invest in innovation effectively creates larger scale industry transformation. So rather than tax reductions for individuals or business – we suggest the freed up funds instead are channeled into R&D based innovation to markedly boost the economy.

Parallel to this, we believe that public sector research performance needs to have a greater emphasis on leveraging industry driven R&D.

To assist evaluation in the effectiveness of our government R&D spent, we need to ask:

- Following participation in publicly funded research projects – how many companies put a lasting product innovation and R&D strategy in place?
- Did this lead to increased long-term company R&D spending? How many continued with self-funded R&D?
- Did the partnering companies set up an R&D function? How many researchers transferred from the research providers to staff the industry R&D function?
- How much company owned IP was generated?
- How many patents per year were generated, which have ended up as actual products?
- What is the annual product added-value generated as a result of publicly funded R&D involvement?
- What industry co-funding has been achieved? Who is driving the research project – research provider or industry? Is there a shift towards industry drive?

Additionally we argue, with increased pressure to provide quick improvements under the current economic conditions - a greater share of Government-funded research should satisfy immediate-to medium-term needs that have a high probability of implementation and earlier return on investment.

We also observe that current intent is to support R&D within high-tech sectors (usually considered to be IT and biotech). Recent European research by Hatmut Hirsch-Kreinsen, David Jacobson and Paul Robertson documented in: *“Low Tech” Industries: Innovativeness and Development Perspectives. A Summary of a European Research Project* shows that most growth and employment in OECD countries still emanates from low to medium tech industries (LMT).

Some relevant quotes are:

- “These research findings show that growth is primarily based not on the creation of new sectors but on the internal transformation of sectors that already exist”.
- “Over-emphasising the role of high-tech activities ignores this major dimensional change in advanced economies”.
- “...in order to ensure contributed future growth prospects of advanced economies, policy-makers need to focus on the processes of innovation and creativity in firms in all sectors, not just high-tech firms”.
- “Policies should encourage both the generation of knowledge and diffusion between low-tech and high-tech sectors, and promote the interrelationship between the sectors”.

It’s also noted, specifically in Government-funded academic R&D programs, there is often little industry involvement in the definition of R&D needs. This leads to a lack of industry pull with little to no industry involvement in the research, its governance or funding. The missing link is more industry involvement.

HERA recommends:

- More Government R&D money is channelled through industry rather than research provider to industry. This will result in industry deciding what research provider they wish to spend R&D funds with that best meet their needs - determining who expands and thrives.
- In academic programmes Government R&D policy puts more emphasis on industry involvement to determine research needs and its funding, the performance of the research, and the governance process.
- That balance is maintained between supporting high and low tech R&D based on the fact most growth and employment emanates from low to medium tech industries.

3.1.2 Policies leading to effective change

We believe the following policies will lead to effective change for our industry.

- [R&D incentive schemes](#)

For R&D-based industry transformation, operating conditions and incentives must be offered.

They must be broad-based and readily accessible to all companies wishing to innovate and, more importantly, have the potential to be transformed into innovators. Access must be facilitated for the many “average” performers, not just for high-performance companies already with an R&D culture. The right incentives will encourage companies to think strategically about the function of R&D and its role in securing future business, and motivate them to embed a formal R&D strategy.

In our view the proposed R&D tax credit scheme on eligible R&D expenses meets these requirements, and is supported by our industry. However, based on past experience of this scheme under the last Labour led government, there is debate around what should be eligible R&D expense.

The Frascati definition of eligible R&D in our view is a suitable, yet conservative approach. Own experience shows it’s relatively straight forward to manage (including by the IRD enforcement team) and dispels the raised view that there will be misuse in claiming ‘eligible’ research expenses on which the tax credit is based. Even if there is misuse during start-up, over time the business R&D function will be clearly associated with R&D only - and become an integral part of practice and culture.

For industry to fully understand the required transformation, a significant educational and business system development effort is required. We need people to appreciate the conventional understanding of R&D has little power in explaining the role of innovation in the ‘typical’ New Zealand manufacturing business (a small to medium enterprise (SME) with less than 100 employees - that makes money from short-run, bespoke-product manufacturing with high levels of customer input in design).

This effort should include focus on business R&D strategy development and entrepreneurship, and it should be considered if educational and business development costs are eligible BERD expenses.

The proposed tax credit rate of 12.5% on a business’s R&D expense is a good start. But needs debating in the context of other incentives to drive BERD, such as MBIE’s Callaghan Innovation (CI) R&D grants scheme. This scheme currently offers 40% government R&D support which is substantially higher than proposed R&D tax credits. Yet its significant assessment hurdles make it hard for our SME’s to obtain.

Like most innovative nations, having both schemes is considered an effective mix. So while New Zealand’s financial constraints deem shifting funds into simple to manage R&D grants has merits - imagine if a full transfer of the CI R&D grant funds into the R&D tax credit scheme occurred? It would free

up extensive grant administration cost and make the highly skilled R&D grants application team available to industry for innovation management.

Ideally New Zealand should consider a thorough analysis of actual innovation activities in our typical manufacturing businesses, along the work done by Hartmut Hirsch-Kreinsen in Germany, for example. And from here, then come up with a R&D scheme via tax or R&D grants that could effectively and efficiently support business innovation.

HERA recommends:

- To introduce with priority the proposed R&D tax credit scheme as a broad-based mechanism for industry transformation.
- Consider extending current eligible Business Expenses for R&D (BERD) beyond the current Frascati definition and include business and R&D strategy development expenses.
- Investigate shift of MBIE R&D growth grant funds into the R&D tax credit scheme to lift tax credit rates and uptake, and extend eligible expenses. All with the added benefits of freeing up CI R&D grant administration costs.
- Undertake a thorough analysis of innovation needs in the typical NZ SME based manufacturing business, and come with an effective taxation and innovation incentive scheme for them.

- **R&D grants administered by Callaghan Innovation**

Feed-back from our largely SME based membership is they find it difficult to access CI R&D grants.

Citing inability to meet investment conditions due to lack of profits in our largely 'lowest cost' tender based environment and increased competition from abroad. Larger businesses such as NZ Steel are also finding it difficult. As the proportion of revenue expected to be spent on R&D is prohibitive.

We have also found our HERA led group based approaches to maximise industry co-funding in steel construction and renewable energy weren't supported by CI. As their policy only deals with the businesses directly via regional structures of application management and it's frequently changing personnel.

Based on the understanding that this scheme is continued, we believe it would benefit from more flexibility in terms of groups of companies coming together for joined projects under one single CI administrator. Specific encouragement should also be given to industry sectors which create high value added products and services. Especially if also using high value labour inputs or providing into broader manufacturing chain inputs. For examples industries that use locally produced metals from NZ Steel to elaborately transform into high value manufactured products.

HERA recommends:

- Continuous availability of company-specific grants over several years to help embed R&D functions within the business, to shift away from R&D service providers being in charge of the grant funds.
- Support mainly time-limited initiatives.
- Widening the range of approved research providers for the R&D grants schemes to include non-public sector or independent research providers such as HERA.
- Allowing the combined funding of research projects by companies that have common interests e.g. in renewable energy or resilient building systems.

- **Support for self-funded industry R&D via industry levies**

Sector-specific R&D in New Zealand has been funded effectively with industry support.

Via levy schemes such as the MAF Commodities Levies Act, or individual Acts of Parliament such as the BRANZ or Heavy Engineering Research Levy Act – and is responsible for contributions to New Zealand such as growing new commercial crops, building standards development or seismic design solutions now in every multi-storey building throughout our country.

These schemes are needed due to our small market lacking substantial key industries such as automotive manufacturing that normally lead and support downstream industries. That's why government support for the creation of stable industry levy funded R&D streams is worthwhile, provided industry groups are unified behind funding via compulsory and legislated levies. The legislation should include the industry's right to subsequent abandonment of the scheme should consensus be lost.

It is however noted that in some cases like the CI research grant scheme and Capability of Independent Research Organisation Funding, that associations funded by a commodity or industry levy are excluded from applying. Unless the Science Board determines they're eligible via a unique R&D capability of national importance, and is unable to be supported adequately by the income generated by the levy. HERA believes it is in this situation.

Additionally, industry research funding from collective levies isn't always treated like research funding from individual companies such as in CI R&D grant schemes. In our view there is no difference between collective levy based and individual industry R&D funding and this limitation should be removed.

We also don't know if industry research levies that are paid directly by the industry as part of running costs and is regulated to have its spending limited to R&D, is accrued under BERD spending – which it should be.

HERA recommends:

- The Government increases support for manufacturing sector groups to create stable industry levy funded R&D streams, provided industry groups are unified behind funding R&D via compulsory and legislated levies.
- That independent research organisations funded via research levies from industry and that provide a unique national capability are eligible for government R&D co-funding.
- That collective levy-based R&D funding from industry is considered equal to individual business expenses on R&D.



Figure 7 Aurecon’s International Structural Engineers UK award winning Te Puni student accommodation project which incorporates damage-avoidance rocking frames (inset) and sliding hinges – both developed via Heavy engineering industry levy funded research and government funding.

- **Regional and sector specific research focus**

HERA followed with interest MBIE’s regional research institute and research partnerships schemes. Applying to both recent funding rounds without success, due to heavy competition. In both cases it was noted that the heavy engineering research levy was accepted as industry co-funding, which in our view is the correct approach to the rating of industry research co-funding via a unified industry sector group.

We believe these are unique and effective tools to create regional and subsector specific research focus, and should be maintained.

HERA recommends:

- MBIE increases, or at least maintains its commitment to regional research institute and research partnership programs.

- **Contestable research – Endeavour Fund**

It's recognised that publicly funded research via CRIs, universities and independent research organisations like HERA, have a key role to play.

Especially in long-term fundamental and blue sky research and horizon 3 industry transformation.

HERA is a regular participant in the contestable process, but a significant change in emphasis and process in funding allocation has affected the success rate of more applied industry driven research projects like ours.

In the past, we led a program to develop a New Zealand technology to produce low emission energy from waste and geothermal energy under the Above Ground Geothermal and Allied Technology (AGGAT) umbrella. Receiving government R&D co-funding at a time when there was a specific renewable energy topic earmarked in the governments RFP. The project advanced the development of niche market application for ORC technology and identified several large scale energy users in the steel, methanol, and energy sectors to warrant its work.

Although the program was planned and notified to be longer term, it didn't achieve project extension due to the specific renewable energy research preference being dropped, high competition and science excellence being prioritised ahead of high impact projects like AGGAT.

Allied research programs are very aligned to manufacturing industry programs performed like by the German Fraunhofer Society. And their projects have been proven to be extremely successful in achieving industry transformation – we would like reach the same, but need more emphasis on impact rather than science excellence when allocating funding.

HERA recommends:

- That the contestable MBIE Endeavour fund has specific national priorities re-established and low emission technologies such as geothermal energy and waste heat are included.
- That more emphasis is put on impact when rating applied industry driven research programs with generally lower science scores.

- **Recognition of R&D and expensing**

While R&D forms the basis of innovation - downstream commercialisation with anticipated returns is the driver.

Commercialisation is a costly process requiring investment in plant and equipment, testing, training and IP protection. Sourcing money to cover these costs often stifling commercial uptake in the long term.

A positive measure to financially assist companies, is to permit the complete write down of R&D capital for further investment. This would be largely cost neutral to Government as it is a matter of timing when tax is paid - not reducing. It has little long-term effect on total company tax paid as increased profits in the following years are likely to more than compensate for the first-years tax reduction.

Consideration should also be given to stimulating investment in more productive manufacturing equipment by allowing faster depreciation.

HERA recommends:

- Making the early stage R&D commercialisation costs 100% tax deductible in the form of depreciation over the first year.
- Introducing faster depreciation rates on productive manufacturing equipment.



Figure 8 The NZ Steel fabrication industry has recently invested heavily in more productive plants to become more competitive against imports under fair and equal trade conditions.

3.2 Economic development strategies

HERA supports the Government's economic development policies in principle.

And, agrees with the need to set priorities and aid development of selected industries, including regionally. We feel development opportunities for our industry sector are very much in the high-value manufacturing category.

Our industry sector is also of national strategic importance, as it supports a wide range of key industry sectors such as agriculture and food, energy, building, construction and critical infrastructure. The strong link between our industry and these sectors provide an opportunity for parallel development - providing solutions for local industry that can subsequently be sold into offshore niche markets.

Local industry development objectives do not feature strongly enough in many of the Government and sector strategies. Where for example, the objective of the Energy Strategy is to have "90% renewable energy by 2025", yet the development of a local industry which could benefit and support this target doesn't feature as a development aim.

In the context of setting priorities and galvanising interests, the elevation of selected industry development projects to “Projects of National Significance” would be an effective way to fix this. New Zealand would benefit from well-researched and argued projects, as was the case in Denmark when it created a world-leading wind energy industry. And, could easily be applied to the case of our geothermal energy generation technology for export markets. Effectively allowing relevant Government departments like MBIE, MFAT, MED and MFE to pull together under MBIE leadership to significantly develop a solid export-focused industry.

HERA recommends:

- Inclusion of local industry development objectives in national economic development strategies.
- Creation of “Projects of National Significance” for industry development - to focus national efforts.



Figure 9 The 100MW Kwarau Geothermal Power Station highlight the potential for geothermal energy in New Zealand.

3.3 The role of Government in developing sustainable and profitable local industries

Developing sustainable, profitable industries is accepted Government policy in order to increase employment and the general wealth of New Zealand. And, the local metals engineering industry is a significant, viable and strategically important sector for this.

Our industry understands that it is required to be competitive both nationally and in a global environment. To maintain our competitiveness, we need policies that recognise our importance and provide an effective framework to support our development.

In this context, it’s recognised that central and local Government play a major role through their own public sector procurement. But Government is also able to influence State Owned Enterprise (SOE) procurement policy amendments of the SOE Act.

3.3.1 Government Procurement Policy

The New Zealand Government's procurement spend is approximately \$40 billion per year alone. And, if the associated annual operating cost of procured items were added - under whole-life considerations the estimated total cost is many times that of the original.

Due to the extent of this spending, public sector procurers have a major influence on the procurement supply chain, the follow-up operational cost and the total life-cycle cost to the taxpayer. What's more, the procurers also have a major influence on local industry development through their investment decisions, with the power to determine local versus imported content or driving innovation by being lead users.

The Government's new Procurement Policy was implemented in October 2013, and the third 2015 edition is currently in force. The Rules are mandated for government's public and state service agencies, and are also recommended for application in other public agencies like local councils.

These Rules are read in conjunction with the cabinet approved 'Five Principles of Government procurement.' We are particularly motivated and in full support of [Principle #4- Get the best deal for everyone](#), as we believe local industry will be more competitive in local and export markets under this to:

- Get best value for money – account for all costs and benefits over the lifetime of the goods or services.
- Make balanced decisions – consider the social, environmental and economic effects of the deal.
- Encourage and be receptive to new ideas and ways of doing things – don't be too prescriptive.
- Take calculated risks and reward new ideas.
- Have clear performance measures – monitor and manage to make sure you get great results.
- Work together with suppliers to make ongoing savings and improvements.
- It's more than just agreeing the deal – be accountable for the results.

These principles are a signal issued by the cabinet to base procurement decisions on a comprehensive evaluation including 'consideration of the social, environmental and economic effects of the deal'.

However we note that implementation of them are lacking in practice.

Unfortunately the MBIE Procurement Group sees itself only in the function of providing the Rules, with implementation left to the different agencies. A position we believe is delaying implementation, and an extensive educational program is recommended.

We were extensively involved in research around government procurement. Publishing in collaboration with BERL two very relevant documents - the *Procurement Tender Evaluation Tool* (Nana, Dixon, & Stokes, 2013) for the evaluation of alternatively sourced fabricated steelwork with the aim to specifically consider balanced decision making in an accountable and transparent way. And, the *International Literature Review of Government Procurement Rules* (Hurren, Hugh, & Stokes, 2016). We've also been a member of the Business Reference Group on Government Procurement and extensively advocated on this - informed by our research outcomes. We now support Metals NZ to further this role in an extended industry context.

We're pleased to see Labours' procurement policy takes note of the wider economic benefits generated by local manufacturing in place of imports, and the requirement for government agencies to demonstrate the effectiveness of their procurement decisions. And, as overall our policy requests agree with their policy position published before the election as there's great overlap by the coalition parties.

HERA recommends

That the following pre-election Labour policies are implemented:

- Government Procurement Rules will be amended to make job creation and the overall benefit to New Zealand, key criteria for decision making.
- To improve transparency, government organisations must report in a standard template to Treasury on the number of jobs and the wider economic benefits they have achieved from their contracting.
- The Rules apply to tenderers and their subcontractors

And also:

- MBIE's procurement group performs an extensive education program for government procurement agencies to support the mandated application of the rules
- That mandatory application of the rules is extended into the wider public sector and SOE's

3.3.2 Whole-life costing

Government procurement guidelines already stipulate that whole-life costing principles are to be adopted for all purchases. However, industry notes that the guidelines lack clarity on how to do this and make little reference to their adoption.

Especially in context of combining the procurement costing method with operational cost considerations to achieve optimum whole-life cost. It also lacks guidance on how to maximise return on investment via driving local content and industry development.

The UK is a leader in this field and applies a cost minimisation philosophy through its adoption in their *Achieving Procurement Excellence* guidelines. By following these, not only are lower whole-life project costs achieved, but project procurement and operational risks are also reduced. An added benefit is the support a process like this provides by undertaking triple-bottom-line reporting of economic, social and environmental outcomes.

Based on the fact that whole-life costing places emphasis not only on the start-up project procurement cost but operational cost over its life, there are generally improved tender opportunities for local suppliers. This is because they have significant competitive advantages if operating, servicing and end-of-life disposal or recycling are considered during project planning and part of the tender process.

3.3.3 Lead user innovation

Lead-user innovation is an especially suitable tool where Government funding is constrained.

In the New Zealand context, State Owned Enterprises, Government departments like Defence or, at a local level, City Councils, are among our largest procuring entities. They offer huge opportunities for industry to work with them to develop and supply superior solutions - compared to those they sometimes end up with.

One well known example of Government-led lead user innovation is the ANZAC Ship Project. Here, the Ministry of Defence promoted local industry participation. One such local company was electrical control specialist Electropar, who formed new local partnerships to effectively design and manufacture a new set of military-quality castings to house the fragile electronic componentry. Electropar's successful delivery for the project ensured ongoing Defence opportunities.

Developing sustainable, profitable industries to increase employment and the general wealth of New Zealand like this is accepted Government policy. There's no reason we can't perfect this art of lead user innovation - all it takes is for leadership to say that's what we're doing.

3.3.4 Procurement excellence proposal

Linking the above principles of balanced decision making in Government Procurement, whole-life costing, and lead user innovation under the heading "Achieving Procurement Excellence" has major potential benefits.

Where higher economic goals accrued from local content become the focus, and attention shifts from the 'lowest contract price' mentality.

HERA accepts that the drivers for local development must be based on maximising the overall returns to the New Zealand economy from taxpayer-funded investments. And, accept that New Zealand has subscribed to the principles of free trade and the guidance developed must remain within these rules - but we also believe that fair and equal principles of free trade must be followed when considering public sector investment.

We acknowledge that the proposed procurement process requires considerable planning and its application may consume sizeable resources and its full application may only be economic for projects of a certain minimum project value.

The benefits are considered to be in the interest of the project proponents, including:

- Lower whole-life project cost to project owner.
- Reduced project procurement and operational risk including project objectives are met (on time, on budget, and to specification).

Associated benefits of testing the local market and buying competitive local products and services can include:

- Lower quality conformance cost.
- Lower repair risk.
- Options for cost savings through responsiveness to innovation and design changes.
- Savings through shorter lead times.
- Reduced exchange rate risks.
- Fulfilling Triple-Bottom-Line (TBL) reporting requirements.
- Meeting any special contract conditions.
- Demonstrating that New Zealand industry has been afforded full, fair and reasonable opportunity to participate in the project.
- Providing good public relations as a corporate citizen.
- Contributing to development of the local economy.

But as the thrust is on driving excellence in public sector procurement, it will also provide guidance for the astute private investor through the basic accounting frame work for social, environmental and financial aspects of TBL reporting.

While whole-life cost reductions on its own justifies the use of this guideline to any project owner, meeting TBL reporting requirements is finding increased global recognition. The OECD-endorsed Global Reporting Initiative (GRI) is a widely used and internationally acknowledged sustainability reporting scheme. GRI's core goals include mainstreaming disclosure of environmental, social and governance performance. Landcare Research and Business New Zealand have joined the GRI consortium to support New Zealand

businesses to manage their sustainability performance effectively and get world-class recognition for their work.

HERA recommends:

- Develop the New Zealand-specific business case for procurement excellence via supportive research and case studies.
- Develop practical whole-life costing guidelines and implement in public sector procurement.
- Further the active adoption of procurement excellence by working with industry to assist in associated training - especially whole-life costing, cost management and development of industry participation plans.
- The overall implementation plan for the Government's Procurement Project has clearly articulated goal & objectives based KPI's which are reported on and verified by audit.

3.3.5 SOE procurement

SOEs are a major procurer of assets and services from the metals engineering industry.

And, as Government has a major influence on their operation through performance expectations, we believe they're able to influence their procurement behaviour - particularly through objectives set in its Act.

In its current version the State Owned Enterprises Act (1986) places no obligation on SOEs to consider enhancing industry participation or industry capability development. In other words, they can operate without a sense of social responsibility or regard to strategic Government initiatives. The new Government Rules of Sourcing "encourage" them to follow the rules, but not mandate it.

In the context of a potential SOE Act review to accommodate the requirements of the mixed ownership model, it's an opportune time to include them supporting overriding national interests in the Act.

HERA recommends:

- Consideration is given for SOEs to follow the above "procurement excellence" principles where SOEs support national priorities in industry development as lead user innovators.
- The SOE Act, and any legislation that considers the proposed mixed ownership model be reviewed in relation to best practice procurement.
- Major project procurement should promote establishment and publication of Industry Participation Plans (IIP).

3.4 Free trade agreements

HERA members are generally supportive of free trade agreements, although some who are solely engaged in manufacture for the local market have expressed reservations with this.

Our position fundamentally is:

- Negotiated trade conditions must be fair and equal (no other non-tariff trade barriers or unequal compliance cost burdens).
- If tariffs are removed it must go both ways – where the tariff applicable to New Zealand is the same for the treaty partner.
- All elements of influencing fair and equal trade need to be considered, including:

- Health and safety requirements have a comparable standard to meet.
- Code compliance for design, material and quality for safety critical products is comparable and enforced.
- Carbon cost is considered on a comparative basis, where if New Zealand manufactures have a certain cost to carry, so too would competing imported products.
- Practices on imported labour where an advantage is gained from importing and exploiting guest labourers, (as the case of low paid shipyard workers imported into Singapore from Bangladesh) is noted as an unfair advantage.
- Safeguards to prevent dumping are implemented.
- The Public Interest Test is an instrument that is not well adopted internationally and should not be considered as an option when determining the applicability of any safeguard determinations in respect to dumping actions.

HERA recommends:

- Free trade agreement terms are set based on the principle of equity between New Zealand manufacturers and those from overseas.
- The right to apply balanced decision making criteria considering social economic and environment impact of procurement decisions are explicitly considered in the agreements.
- Government play a major enforcement role so equal and fair trade conditions are maintained - including anti-dumping tariffs and other safeguard measures.

4. NZ transitions to a low emission economy

This section is adopted from the *HERA submission* to the Productivity's Commission Low-emission Economy – August 2017 Issues Paper (Scholz, October 2017).

4.1 Role of local manufacturing industry

Fundamental to our position towards a low-emission economy is that our industry can be a main contributor to New Zealand meeting its emission targets.

We believe in targeted investment in the transformation to a higher value, higher income and export oriented manufacturing industry in niche markets where we can be cost competitive and/or successfully compete against imports.

With this position we broadly support New Zealand's role in achieving our Paris agreement obligations, with our industry to lead with its own contributions. For example, all three policy scenarios as expressed in *Netzero in New Zealand* (Vivid Economics, March 2017) include low cost emission reduction opportunities our industry could contribute to and we support this role.

However, we do encourage the agricultural sector to play its part as well – and, our industry may potentially be able to assist by delivering products and services in novel niche market technologies for them. We also see us playing a role when it comes to carbon sequestration technology, as this likely will require extensive involvement of our heavy fabrication industry in larger scale industrial applications.

In particular we support the strategies outlined in the ECCA *"Unlocking our energy productivity and renewable energy potential"* document (Energy Efficiency and Conservation Authority (ECCA), June 2017) developed as part of the NZ Energy Efficiency and Conservation Strategy 2017 – 2022. In this strategy our industry especially responds to the priority area "renewable and efficient use of process heat" - but could also be a part of "efficient and low -emission transport" and "innovative and efficient use of electricity".

In respect to reducing the world's emissions in New Zealand's only relevant metals-based industrial steel and aluminium production, we note the energy intensive nature of these industries. However, for these businesses in New Zealand, they already have a very high percentage of electricity generated from renewable sources.

The main barriers identified towards future growth of NZ metals making are not so much in technology constraints but the NZ free trade environment not being fair to local producers. This includes the fact New Zealand privately owned manufacturers are operating in a totally incentive-free environment and hence having to compete on non-equal terms against suppliers which are largely government owned and supported by multiple incentive schemes.

The main barriers of future growth of NZ metals making is not so much in technology constraints, but our free trade environment not being fair to local producers.

HERA recommends:

- Improving understanding of New Zealand's manufacturing potential to contribute to meeting our climate change targets, and explore and support development of a high value manufacturing base in niche markets where NZ has potential, such as biogas, biofuels, hydrogen technology, wind energy, geothermal and waste heat technologies.

- When developing strategies and programs including incentives, consider the macro-economic effects of any development and not just the narrow aspect influence on energy pricing.
- Promoting durable carbon pricing mechanisms that level the playing field for zero-net emitters, not inherent subsidies provided to hydro, fossil and geothermal power sources to date.
- Working towards a competitive wholesale electricity market where there is proper competition to build the next increment of power generation. At the very least this requires a transparent price on the long-term value of hydro-storage.
- Support local metals manufacturers NZ Steel and NZ Aluminium Smelter to remain
- Renewable and low emission technologies are maintained as a priority in our contestable R&D grant schemes.

4.2 Building and construction

As an industry we support the design and build of energy efficient buildings in terms of energy used during operation – however embodied energy also makes a contribution and this can be influenced via science-based performance assessment.

When it comes to the embodied carbon footprint of buildings and constructions, the overall emission reduction opportunity is much lower than a building's energy use over its lifetime. This needs to be well understood as market driven and non-scientific approaches can blur the focus on what can be achieved.

In general we agree with the Royal Society proposal that education on low emission is key to achieving improvements. However, focus on the development of appropriate rating tools to accurately measure performance and contribution to lower emissions is needed.

When it comes to this, any policies and initiatives need to be based on scientific fact. The application of Life Cycle Assessments (LCA) principles over the whole life of a product including its reuse, recycling or landfill option is in our view the appropriate pathway to describe environmental product performance. Encouraging companies to improve their performance by issuing Environment Product Declarations (EPD) to internationally acceptable standards is one great opportunity for ongoing improvement.

HERA recommends:

- The development of building and product environmental performance rating schemes is based on scientific Life Cycle Analyses (LCA) principles.
- Increased promotion of environmental rating systems including their application for NZ manufactured product providing Environmental Product Declarations (EPD's).

5. Building and construction industry policy

5.1 Innovation funding

The steel based industry added competition and new jobs with its own innovation funding demonstrating success largely against the strongly government R&D co-funded traditional timber industry sector.

Government initiatives aimed at lifting housing affordability such as the 2012 Productivity Commission Housing affordability enquiry (New Zealand Productivity Commission, March 2012) suggest there are significant barriers for increased productivity in this sector. Including its small market, fragmented nature and largely small companies – and, could be improved by reducing or removing these barriers and more innovation.

Our NZ metals engineering industry is a significant player in the building and construction sector - particularly with heavy and light steel framing, metals based roofing and transport infrastructure like bridges.

It's important to note that apart from metal roofing, metals-based solutions in this market are relatively new to New Zealand. The multi-storey steel construction heavy structural steel market share in the 1980's was basically zero percent, and today is around 50%. This growth largely due to industry funded efforts via HERA, Steel Construction New Zealand (SCNZ) and an industry willing to invest in innovation.

Light steel framing is even newer. Gaining around a 10% market of the residential housing against well-established timber and concrete based solutions. This was exclusively industry funded and backed by the development of accepted alternative solutions via its industry association NASH, its sector and the use of an entire product chain from a local steel manufacturer over internationally acclaimed roll forming technology manufacturers to integrated design and built solution providers.

In both cases, it was overseas experience that demonstrated the competitive nature of the "new" steel based systems over the traditional timber and concrete systems and leading to successful local implementation. This created significant jobs, many using New Zealand manufactured steel, and in our view this is extremely valuable to our economy as any other industry.

In the case of heavy steel construction, Government support has to be acknowledged in the form of assisting the industry in collecting its own research funds via the heavy engineering research levy (2016/17 \$2 million). And, provide the ability to apply, and from time to time win co-funding via the contestable Government research funding pools - a self-driven pathway which is of course open to any industry sector.

This is in strong contrast to the timber construction industry. Which enjoys the support of ongoing government funded research, and the (BRANZ) building research levy - which traditionally has been the main driver for timber construction innovations including support for the timber design standard NZS 3604.

5.2 Public-sector funded research prioritisation

HERA argues that the mix in spending of building research levy, but also Government funding isn't sufficiently covering the materials performance and building technique space to drive productivity and in turn improve housing affordability.

R&D in building and construction is a key driver for the competitiveness of different building systems. Tax payer funding support for research investments comes via the different MBIE channels – but also, in the case of timber research, through separate MAF funds.

The metals-based industry, in the same way as the concrete, timber or other material-based industries, contributes to the tax-based income of the Government. However it also contributes to the BRANZ-administered building research levy in proportion to their market share and overall economic contribution to the value of buildings constructed.

The building research levy is a significant contributor to the sector's research with annual contributions typically exceeding \$15 million in the current construction climate. The Government legislated Building Research Levy Act 1969 authorises to quote from the act 'the levying of building contractors to provide money for research into improved techniques and materials for use in the building industry'. A levy collected directly from the building developers involved based on the value of the building asset being applied for during the consenting process. Due to the cross sector nature we argued that the building research levy application has to ensure that when assisting product and services based industry innovation, it is applied in a manner representing proportionally all building research-levy paying industry sectors. It's the role of BRANZ's Levy Allocation Guidance Committee (LAGC) to ensure this is happening, and as constituted in an Act of Parliament, the Government's role to ensure compliance.

This is in contrast to the specific material based heavy engineering or other commodities based research levies which are directly collected from the involved industries and are part of their direct business expenses.

BRANZ argues they're using the levy in accordance with the act - assessing research needs across the industry sector as they arise. However, the emergence of steel based structural and light gauge steel sector solutions received next to no support from the building research levy while timber construction did.

Previous and current analyses of the BRANZ research strategy and its actual research contributions outlined in their 2017 Levy in Action Report showed they funded in favour of timber-based construction – e.g. investing \$440k "towards durable timber structures" due to challenges in the area and a very low market share.

It also listed \$120k for the "Pre-work on revision of NZS 3604", which is only the start of support for the upcoming revision of the widely applied standard. Their BRANZ Guideline Newsletter reiterates that their work, advice and promotion is geared towards residential construction and the commercial sector remains underserved if compared to its levy contribution.

Since 2002, we've consistently conveyed this lack of research spending balance to BRANZ. We note positively an increase in transparency and support for some smaller metals based research, more money being allocated towards cross sector social research such as "Embracing medium-density housing", or "Eliminating quality issues." But there's no real change in research money allocation across wider sector coverage.

We note, we're not against BRANZ engaging in the timber research area, and in actual fact support it. Our concern is that its disproportionate use of their levy when it should be funded directly from the timber industry itself much like our metals-based engineering industry has to do.

We particularly believe our new market share scenarios to over 50% in steel construction multi-storey projects should support a change in their research funding allocation when it comes to techniques and new materials. But the reality is, despite collecting a substantial levy from us, we continue to see no real returns to our industry and one-sided funding of competition development.

MAF-administered initiatives such as the past Forest Industry Development Agenda (FIDA) are also one-sided. They benefit one material system that's not contestable by either steel or concrete. Equally, the largely Government funded CRI SCION exclusively benefits the wood-based sector, while competing materials obtain 'next to no' research support from MBIE and Callaghan Innovation. With the new government's focus on developing forestry based products as a key manufacturing sector for the construction industry, our request for sector balance will need to be continually emphasised and advocated for.

HERA has also been involved in the development of the National Science Challenge NSC 11 "Building Better Homes, Towns and Cities" but in the largely academically driven challenge, very little industry representation meant our proposal to drive competition amongst building systems providers through greater productivity found little response. An opportunity to drive innovation as the original ministerial proposal requested was lost.

Overall we argue that the current mix favours research for the fundamental understanding of the building environment, which doesn't effectively address the number one New Zealand housing challenge – affordability.

We also understand that university Earthquake Core funding has strong material imbalance - with a focus on fixings concrete's seismic issues exposed in recent earthquakes. In our view – funding should be advancing the performance of products with inherent advantages in seismic conditions instead.

The Canterbury earthquake experiences provide a unique opportunity to consider whole-life performance of buildings including their resilience. Again, we argue there is a severe imbalance in the natural hazards research spending with bias towards understanding earthquakes, planning for them and predicting them. While predicting an earthquake is desirable - having a resilient building and infrastructure will really save lives and minimise post disaster damage.

There are different options to address the current imbalances in the allocation of Government R&D support for innovation in the construction sector.

In respect to the building research levy, we believe the BRANZ role in the building research landscape must be as the true cross sector peak body. Government's role then is to actively safeguard and ensure this is happening. We also support Government shifting the balance of building research levy spend in areas that positively affect housing affordability - including consideration of the most cost effective model for delivering research with the right mix of internal and external BRANZ research.

Based on the metal industry sector's poor experience, a fair position for BRANZ can be achieved by limiting their activities to general cross sector research that avoids specific material interest. This would either reduce the building research levy or, if maintained, be channeled via a contestable high value manufacturing MBIE research funding pool.

HERA recommends:

- Government funding of construction materials-specific research is focused on lifting housing affordability through innovation amongst all building system providers.
- BRANZ is supported in its effort to be the centre of excellence for construction research in New Zealand, with clear policies in place to provide building industry innovation in line with its Act "to provide research into improved techniques and materials for us in the building industry"

- Policy on R&D funded from the building research levy includes statements on construction material neutrality and levy allocation reflects construction material contributions to the building research levy.

5.3 Conformance of critical building products

Critical building products such as a seismic frame in steel construction are crucial to the performance of a building and need to conform to specification.

As the experiences of the Canterbury and Kaikoura earthquakes show, steel buildings performed well and generally exceeded expectation. But if we get it wrong, lives are at risk and re-work and replacement costs massive.

5.3.1 Greater improvement in assured steel fabrication quality

Understanding life-safety risks posed by non-conformity, our structural steel industry has put in a concerted effort to improve its quality assurance processes.

We've advanced the frame work of standards and guidelines, educated stakeholders and most importantly improved quality assurance processes within our fabrication and construction members through the establishment of the Steel Fabrication Certification (SFC) scheme.

The SFC scheme is aligned to international best practice standard AS/NZS/ISO 3834 and currently covers the steel fabrication process. Moving forward steel erecting and corrosion protection will also be implemented. In a convincing commitment since its inception three years ago, 28 fabricators have been certified - representing over 80% of the current NZ annual capacity of 120,000 tons of fabricated steelwork.

This steel construction specific quality assurance effort is supported by MBIE and a corresponding fabrication quality assurance standard AS/NZS 5131 "Structural Steelwork – Fabrication and erection." AS/NZS 5131 heavily draws on European best practice standards EN 1090 and introduces the fundamental concept of 'construction category' (CC). It also prescribes pathways for product traceability and resolution of the product conformity requirements.

5.3.2 Product conformity assessment of steel material

Designation of material used in steel construction and its traceability is specified in AS/NZS 5131, however verifying conformance to this is a continued challenge - particularly from countries where a less strict quality culture applies.

Following MBIE and Commerce Commission announcements of significant building product conformance issues which included steel, we consulted in April 2016 extensively with both our and SCNZ membership. The outcome was the wide endorsement of a policy statement requesting that "all critical building products independent of building material should be required to have reliable third party verification enforced by the MBIE-driven regulatory framework".

We have conveyed this industry policy statement to MBIE and are aware that it's under discussion along with a product and fabrication control systems review which includes looking at mandatory third-party verification for critical building products. We also appreciate the efforts of NZTA and building authorities like Auckland Council to ensure product conformity and their specific guidelines released to support this.

As noted above, our steel construction industry has made significant progress evolving sector-driven third party product verification. HERA Certification, is charged with running the SFC scheme for steel fabricators, endorsed the requirement for third-party verification for the critical steel products as used in construction categories CC3 and CC4 as specified by the design engineer.

5.3.3 Door now open for mandating third-party verified constructional steelwork

With AS/NZS 5135 now cited in the NZ building regulation, the regulatory “system” for achieving demonstrated product conformance of critical steel construction is complete.

Assuming industry stakeholders resolve the remaining issues of implementing viable product verification pathways for all products, the door will be open for MBIE to make the steel sectors overarching building product conformance system mandatory - as proposed in our original 2016 policy statement.

5.3.4 Compliance of imported fabricated steelwork and competing building product challenges

The SFC scheme is fully aligned with AS/NZS 5131 and its fabricators have to follow prescribed quality assurance pathways - giving confidence that compliance is achieved. However, buildings fabricated outside of this SFC pathway are questionable and remains an issue.

This is particularly the case for imported fabricated structural steelwork. Our industry believes that within the framework of a fair and equal trade, the government has to ensure regulations fully cover critical product imports. And that there is adequate and strict enforcement to ensure the trade playing field is level - a process involving informing and educating building authorities like MBIE of the requirements and resourcing them accordingly.

However, we also argue that competing industry sectors (in particular timber and concrete) come up with their own versions of reliable third party verified product conformance in order to safeguard reliable performance of our buildings and level playing fields.

HERA recommends:

- That MBIE consequently introduces the concept of third-party product conformity verification for all critical building products across all materials used in building and construction and mandates accordingly.
- That Government enforces the level playing field on product conformity of critical building products especially

5.4 Government officials statements on construction materials

In a free market economy, the market determines which building system or construction material is chosen. The government’s role is to set performance standards and performance expectation but it should be up to the market players to demonstrate how they meet them.

However, this should be based on scientific fact and whole - life performance assessment - not emotionally driven, feel good marketing.

In our view it's the government's job to ensure that sustainability of materials used are fairly rated and best practice is encouraged or mandated via appropriate rating schemes such as the NZ's Green Building Council (NZGB) Green Star rating system or (international) standards based environmental rating schemes. By setting these expectation standards, they'll then become effective agents for change and driving product performance.

In the process - public office bearers representing the general interest (while entitled to a personal opinion), should be neutral in the promotion of one solution over another. In the context of the recent elections, this wasn't the case - when coalition parties expressed support for timber construction as a preferred material to be promoted and particularly to be used in public sector procurement. The Rotorua City Council also promotes a 'Pro-Wood' procurement policy.

The Construction Industry Council (CIC), which represents the competing interests of the industry, is facing similar issues when representing the sector. And has adopted a Policy Statement on Construction Materials which specifically states that neutrality in terms of advocating one material over another - rather it promotes the use of materials on a fit-for-purpose basis.

HERA believes such a policy should also guide public office bearers such as MPs or government officials when public procurement guidelines are developed. Leveraging the Green Star rating requirements or similar to inform public buildings or innovation policies for building and construction instead. As said previously, a job in our metals based industry is just as valuable to the New Zealand economy as a timber industry job.

HERA recommends:

- Government officials /agents stand neutral in terms of advocating one building system/material over another.
- Government, in its procurement guidelines, specifies only performance requirements that are free from prescriptive material or building system specific requirements.

5.5 Construction industry standards development

HERA is strongly involved in the development of New Zealand, joint Australia/New Zealand, European and ISO standards and supports SNZ playing an effective role in advancing their application.

Our contribution includes the development of standards for steel and steel-concrete composite construction - committing \$500K of funding since 2011 alone, to develop harmonized AS/NZS standards such as AS/NZS 5100.6 and AS/NZS 5131.

Having observed the integration of Standards NZ (SNZ) into MBIE, being involved in a number of submissions in this area, and also the process changes between NZS and Standards Australian (SA) in the development of joint standards - we have significant concerns with the effectiveness of developing standards via SNZ.

We understand that some 80% of NZ standards are now joined with Australia and this certainly applies for our steel construction standards. Recent changes mean that SNZ is merely an administration body when it comes to SA driven joint standards development. Not only disjoining existing AS/NZS standards by default until SA invoices are met by our local industry members - but threatening to be discontinued by SA, due to their own funding situation. In this scenario, the cost of requested industry sponsorship is escalated, especially if considering just simple standard amendments.

We feel SNZ services since integration into MBIE has been poor value, given NZ building activity is booming and funds paid via the building industry into standards maintenance should be peaking.

It has long been seen that the benefits of work on AS/NZS standards are:

- Removal of technical barriers on trade.
- Joint standards are easier to maintain in the future and will reduce the financial burden on New Zealand from having to develop standards solely.
- Joint standards are more likely to be supported by international design software providers due to a larger customer base - leading to increased productivity for NZ designers.

It's our understanding that MBIE funds the design specification standards which determine the expected performance of buildings for timber, steel or concrete structures. And the application of the standards refers to product conformity for suppliers to demonstrate their products meet specification, which would be largely industry funded.

We know this principle is currently being disrupted with the new and not consulted-on arrangement with SA. However, given the significant investment in the fundamental design standards by industry, we respectfully request a much stronger commitment from MBIE-Building Systems Performance. Particularly in the development of joint AS/NZS standards, better industry consultation and a stronger representation of NZ interests in the formulation of joint AS/NZS standards.

HERA recommends:

- That the performance of SNZ and SA is reviewed in the context of developing joint standards with Australia, with the view of better service, more accountability, improved industry consultation and cost effectiveness.
- That the planning of standard updates including associated funding requirements is improved, including better co-ordination with industry

6. About HERA

HERA is an industry-owned and industry-governed research association representing the heavier gauge metals industry of New Zealand, encompassing approximately 600 member companies. Roughly one-third of our funding comes from an industry contribution via a levy on heavy steel and welding consumables, one-third from membership fees and self-generated income while the remaining one-third traditionally came from contestable government grants.

Since our establishment in 1978 we have maintained a consistent presence supporting industries' research and development needs, resulting in a substantial contribution to the development of the NZ metals industry. One of our more significant achievements is the development of cost effective earthquake resisting structural steel systems leading to the growth of structural steel in the multi-storey building sector from a minimal market share in the 1980's to over 50% today. These systems have been implemented into the NZ construction regulatory system and demonstrated excellent performance in the recent Canterbury and Kaikoura earthquakes.

HERA represents two sectors of the metals industry, the steel material based construction industry sector which is unified behind a focused sector research strategy driven by HERA and the wider heavy engineering and metals manufacturing industry characterised by very diverse individual company interests which make having a joint industry development strategy rather challenging. It is principally this second group that contains the high value niche manufacturing sector that this submission is concerned with.

For more information on HERA visit: www.hera.org.nz

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