HERA

HERA Report R5-42

2012

INDUSTRY RESEARCH REPORT

Industry position on public policy issues

New Zealand Metals Engineering Industry Position on Public Policy Issues 2012

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1 Executive Summary

This paper provides an overview of the Heavy Engineering Research Association (HERA) position to government issues and policies with the intent to inform policy makers of key issues facing our industries and seek support on political alterations to improve the ease of doing business and to help the government achieve their economic growth goals.

It reflects the view of the HERA Executive and is based on consultation with the HERA membership and members of Metals New Zealand. Our industry represents an estimated total contribution to New Zealand's GDP of over 7% and more than 5% of New Zealand's exports. It should be noted this paper doesn't necessarily imply that each individual member agrees with all of the statements made.

Recommendations presented in the document include:

On Industry R&D

- Industry members in general, believe that an R&D tax credit scheme is an ideal broad based mechanism for transformation. However, in the absence of such a scheme a suitable replacement mechanism might be the widening of access to existing R&D grant schemes.
- Ensuring the continuous availability of company specific grants over several years in order to support the embedding of the R&D functions within the business, as opposed to the current emphasis on R&D services providers owning the initiative.
- Widening the range of approved research providers for the R&D grant schemes to also include industry sector specific research providers such as HERA.
- Allowing the combined funding of projects under the research grants scheme by companies which have common interests in areas such as renewable energy or resilient building systems.
- That government increases support for non-agriculture manufacturing sector groups to create stable industry levy funded R&D streams, provided the groups are unified behind funding R&D via compulsory levies enshrined in legislation. The legislation should include the industry's right to subsequent abandonment of the scheme should industry support be lost.
- In particular, HERA members request support from all MP's in the matter of increasing HERA's industry R&D funding via an adjustment in the maximum prescribed levy rate in the HERL Act via the Statues Amendment Bill tabled in Parliament in October 2011.
- That Capability of Independent Research Organisation Funding is implemented without delay to ensure important research capability is not lost in the transition from old funding mechanism to the new.
- That HERA research funding is considered in the exclusion exception of levy base-funded research organisation with R&D capacity of national importance in the Capability of Independent Research Organisation Funding proposal.
- To make the early stage R&D commercialisation costs 100% tax deductible in the form of depreciation in the first year
- To introduce faster depreciation rates on productive manufacturing equipment

On Public funded research and its impact on industry

- That more government R&D money is channelled through industry rather than directly through the research provider to industry. This will result in industry deciding which research provider they wish to spend R&D funds with. Demand will then dictate which research providers and what research services best meet the needs of industry and determine which will expand and thrive.
- That in largely academic programs government R&D policy puts more emphasis on industry involvement in the determination of research needs and its funding, the performance of the research and in the governance process.

On Economic Development Strategies

- The inclusion of local industry development objectives in national economic development strategies
- The creation of "Projects of National Significance" for industry development in order to focus national efforts

On Lead User Innovation

- That the government develops and adopts a lead user innovation policy which is then integrated into the appropriate government procurement guidelines and the SOE Act.
- That mechanisms and incentives are developed to encourage larger non- government entities to engage with industry as lead users in innovation.

On Government Procurement Policy

- That the ICN Draft Document "Developing and Implementing Local Industry Participation Plans" be made a mandatory requirement for all major public sector procurement
- That consideration is given as to how the document can also be made mandatory for SOE's, including under the proposed mixed ownership model.
- That no import tariff exemption be given unless a detailed and satisfactory Industry Participation Plan has been provided

On Whole - Life Costing

- That a whole - life costing approach to public sector procurement is made a mandatory requirement for all government and public sector procurement under the overall theme of achieving excellence in procurement.
- That adequate measures are undertaken to ensure the uptake of whole–life costing as the overriding procurement decision making tool.
- That the government considers making whole-life costing a significant component of the establishment of Local Industry Participation Plans.

On SOE Procurement

- That the SOE Act be reviewed in relation to best practice procurement.
- That major project procurements have to include the establishment and publication of a local industry participation plan
- That whole-life costing principles or the higher level, procurement excellence principles are followed.
- That a requirement be placed on SOE's that in relation to major projects, they operate as good NZ corporate citizens including support for national priorities in industry development.

On Free Trade Agreements

- That free trade agreements are weighted in relation to the level of equity between New Zealand manufacturers and those overseas

On Skills Availability Issues

- HERA supports the policy position of its key ITO Competenz and particularly the point of gaining efficiencies through the merger of ITOs.
- That government recognises that industry training is essential and needs to be cost effective; however the cost to employers is too high and therefore limits uptake especially in difficult economic times.
- There needs to be more emphasis on providing career paths from school to work, but also further on to leading positions i.e. progression beyond Level 4 qualifications.
- That funding caps limiting student numbers in priority professions supporting high value growth industries such as mechanical engineering are reviewed and relaxed.

On Emission Trading Scheme (ETS)

- That government ensures equitable treatment of the NZ metals manufacturing on national and international level when formulating policies relating to the ETS or in the negotiation of any Free Trade Agreement.
- That government encourages the built environment to reduce its carbon emissions.

On Measuring Sustainability

- That the government supports the development of a New Zealand Life Cycle Inventory (LCI) database and encourages the use of Life Cycle Assessment (LCA).
- In the interest of improving New Zealand exports, the government encourages companies to develop Environmental Product Declarations (EPDs) for their products.

On Seismic Building Resilience

- That government explores and supports the introduction of a Building Resilience Rating System
- That more research on seismic and tsunami damage avoidance technology is stipulated in national research strategies and incentivized accordingly through appropriated funding.

On Construction Material Research Prioritisation and Promotion

- That government funding of construction materials specific research is balanced commensurate to a material sector's economic contribution or in strictly contestable fashion based on performance expectation.
- That policy on R&D funded from the building research levy includes statements on construction material neutrality and the setting of R&D priorities reflects construction material contributions to the building research levy.
- That government officials /agents stand neutral in terms of advocating one building system/material over another one, rather favouring a best for purpose approach.
- That government in its procurement guidelines specify only performance requirements which are free from prescriptive material/or building system specific requirements

METALS NEW ZEALAND

A United Industry Voice

CASTING TECHNOLOGY NEW ZEALAND INC.

GALVANIZING ASSOCIATION

HERA Innovation in Metals

MRM NZ METAL ROOFING MANUFACTURERS INC.

NASH NATIONAL ASSOCIATION OF STEEL-FRAMED HOUSING INC.

LIGHT ALLOY MANUFACTURING NEW ZEALAND

SCNZ STEEL CONSTRUCTION NEW ZEALAND

Stainless NZ New Zealand Stainless Steel Development Association

TiDA Titanium Industry Development Association Inc

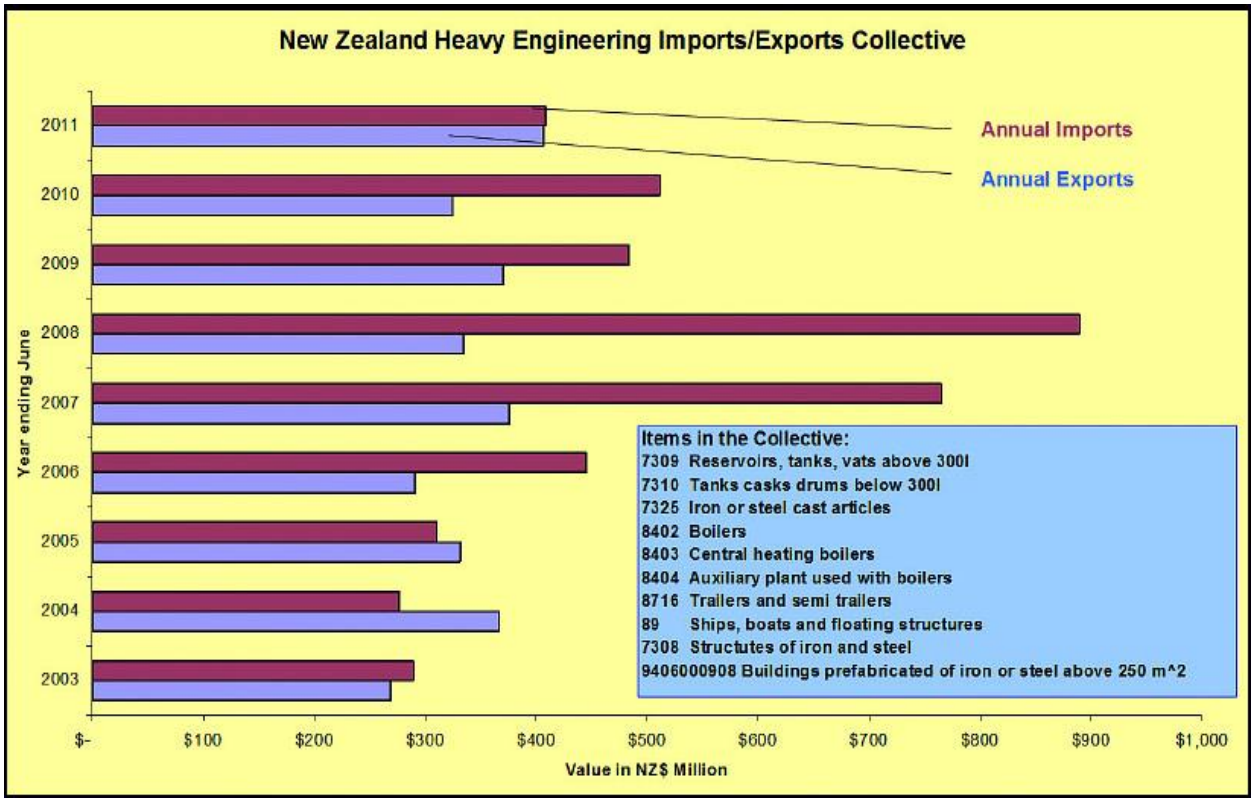
2 About the New Zealand Metals Engineering Industry and HERA

2.1 The New Zealand Metals Engineering Industry

From its early beginnings in the 1800s with the establishment of the country's first foundries, the New Zealand Metals Engineering industry is now a diverse and significant contributor to the New Zealand economy. Today, this high value-added industry spans base metal producers, original equipment manufacturers, fitters and fabricators and all of the essential supply chain in between.

The metals-based industry is actively involved with and supports many other industries such as food processing, energy generation, agriculture and construction. As such, industry-specific figures are difficult to pinpoint, but 2010 estimates are:

- Contributes over 7% to Annual NZ GDP
- Direct metals-based product manufacturing employs more than 26,000 people
- Over $7.3 billion worth of metals-based product manufactured annually
- More than $2.6 billion of product exported, representing 5.6% of total NZ exports



New Zealand fabricated heavy engineering imports/exports collective shows significant export growth in the 2010-2011 year

2.2 The New Zealand Heavy Engineering Research Association (HERA)

2.2.1 HERA Introduction

The New Zealand Heavy Engineering Research Association (HERA) was established in 1979 as a non-profit research organisation dedicated to serving the needs of the metals-based industries in New Zealand. Its membership consists of approximately 600 companies representing metals based fabrication and manufacturing companies, the associated design and consulting industry, related education providers and the supporting material supply and services industry.

HERA's main sector group is the heavy engineering industry. However, as many of its members often also operate in the general metals engineering sector, the HERA focus has been extended to the wider metals engineering industry sector.

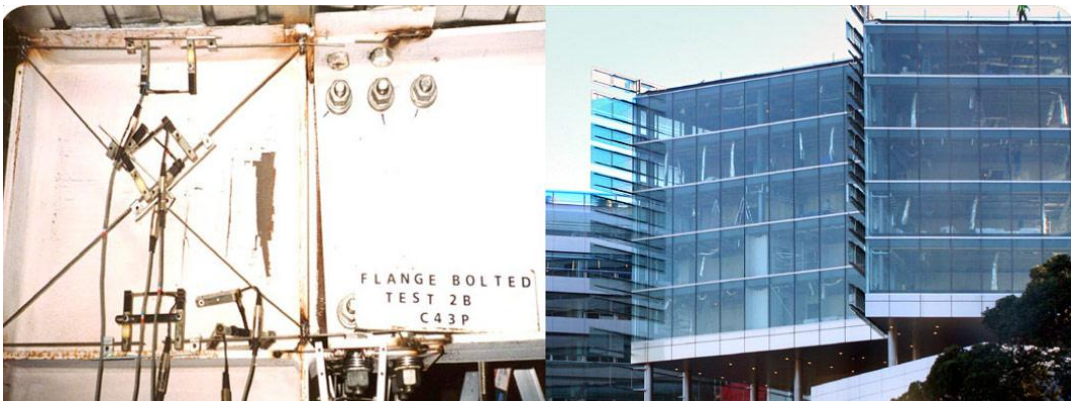
HERA is base funded through an industry generated R&D contribution in the form of a levy on heavy steel and welding consumables under the Heavy Engineering Research Levy (HERL) Act. The HERL Act requires that the levy funds collected through the Act are used for research and development related purposes only.

However HERA is also performing several key industry development functions as successful research deployment can only be achieved if research is combined with the relevant industry development. Supporting activities such as technology transfer, skill development and advocacy with government agencies and associated stakeholder groups is also part of HERA's mandate. These non-R&D functions are funded largely from member contributions and self-funded activities.

2.2.2 Current HERA R&D Focus

HERA's current main research interests are in the areas of steel construction, general heavy engineering industry development and welding fabrication innovation. It is important to note that HERA is not a traditional research provider with its own laboratories rather a research management provider, who works with other research providers such as universities, independent research organisations and CRI's to deliver its programs.

- **Steel Construction Research**
  HERA's steel construction research supports sector overarching technology developments and is communicated through standards and guidelines for the NZ industry. Its research into the performance of steel structures under natural hazards, has resulted in NZ structural steel design standards being world leading in respect to design



HERA structural engineering research is implemented in every modern New Zealand steel structure

against seismic and fire hazards. This has led to structural steel increasing market share in multi-level construction from virtually 0% in the 80's to close to 50% today in the NZ market.

Current research focuses on the continued improvement of the steel structures design standards with special attention to composite construction, fire engineering and seismic damage avoidance technology. A major effort is also underway in steel bridge design guidance development and sustainable steel issues.

- **Heavy Engineering Industry Development**
  Heavy engineering industry development is driven by the strategic intent to transform the industry from a largely tender-based contract industry to higher value product and services provider industry holding its own IP. Priority has been given to the development of renewable energy technology in market segments where New Zealand has good domestic, but more importantly, excellent export market opportunities.

  The first opportunity with an active research program is in the low enthalpy heat-to-electrical energy conversion area. This is market-driven, aimed at providing solutions to exploit extensive global lower temperature geothermal resources and the presence of significant energy in the form of waste heat. This is particularly significant in traditional legacy industries such as oil refining, steelworks and cement production. A further opportunity is seen in marine energy where HERA is progressing industry development in co-operation with the Aotearoa Wave and Tidal Energy Association (AWATEA).

- **Welding Fabrication Innovation**
  Welding is a key enabling technology for the metals based engineering sector. On-going research supports the competitive position of this industry with the current research focus being on: productivity improvement deriving from fit for purpose and cost effective design, corrosion related research around lower cost stainless steels and the practical application of quality assurance in welding processes.

Fatigue design details of welded joints heavily influence fabrication cost: HERA productivity research indicates savings in welding cost in bridge girders of up to 70% are possible

3 Industry Transformation Policies

HERA members believe that for New Zealand to become more prosperous and sustainable requires its economy to not only become globally competitive and profitable, but also more export focused and environmentally aware. They also support the view that the productive, high value-added and export focused industry sectors will lead the way to improved economic performance. The profitable operation of these sectors will provide the tax revenue required to support government expenditure.

Therefore HERA concludes that our industry needs;

- Policies which enable business to thrive and innovate
- Policies which enable a focus on developing productive, high value-added, export oriented business sectors

HERA members recognise the current constrained economic climate and do accept that there is limited additional funding available to support industry transformation. Industry believes that existing resources need to be prioritised and strategically aligned for maximum effect in order to achieve industry development which:

- Incentivises and rewards the development of co-operation enhancing 'NZ Incorporated' type business models and behaviour
- Leverages from the resources New Zealand owns and controls through encouraging 'lead user' innovation

For businesses to thrive and innovate, the business environment must be right. Many policies influence the business environment such as tax and spending policies. In this document comment is limited to areas where HERA feels it has competence to comment and has received industry feedback. These areas are in particular innovation, local industry development and the drive for increased exports.

3.1 Industry Innovation Policies

The ability of any economy to thrive in a competitive global market place is through continued innovation. The main drivers of innovation are industry and public sector R&D investments and therefore our focus is on policies which influence this.

3.1.1 Industry R&D

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

HERA believes the following policies will lead to effective change:

R&D Incentive Schemes
For R&D based industry transformation to happen, operating conditions and incentives must be offered to industry which are broad based and readily accessible to all companies. This must include the many "average" performers and not just the few hundred high performance companies who already have an R&D culture and who invest in R&D with or without specific incentives. With the right incentives, companies will be led to thinking strategically about the function of R&D and its importance in securing future business and will be motivated to embed a formal R&D strategy within their company

HERA recommends:

- HERA members in general believe that an R&D tax credit scheme is an ideal broad based mechanism for transformation. However in the absence of such a scheme a suitable replacement mechanism might be a widening of access to the existing R&D grant schemes.
- The continuous availability of company specific grants over several years in order to support the embedding of the R&D functions within the business, as opposed to the current emphasis on R&D services providers providing the initiative.
- Widening the range of approved research providers for the R&D grant schemes to also include industry sector specific research providers such as HERA.
- Allowing the combined funding of research projects by companies which have common interests as e.g. in the renewable energy area or resilient building systems.

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

Sector specific R&D has been funded effectively and with industry support via levy schemes such as the Commodities Levies Act, which comes under MAF, or by individual Acts of Parliament such as the Building Research Association NZ (BRANZ) Levy Act or the Heavy Engineering Research Levy (HERL) Act.

HERA believes these funding schemes are very effective, particularly in New Zealand where due to our small market we lack the support of substantial key industries such as automotive manufacturing, which normally would lead and support downstream industries in their R&D efforts.

HERA recommends:

- That government increases support for non-agriculture manufacturing sector groups to create stable industry levy funded R&D streams provided the groups are unified behind funding R&D via compulsory levies enshrined in legislation. The legislation should include the industry's right to subsequent abandonment of the scheme should industry consensus be lost.
- In particular HERA members request support from all MP's in the matter of increasing HERA's industry R&D funding via an adjustment in the maximum prescribed levy rate in the HERL Act via the Statues Amendment Bill tabled in Parliament in October 2011.

HERA industry levy funded research contributed to seismic design solutions which are now in every multi-storey building in New Zealand. Aurecon's International Structural Engineers UK award-winning Te Puni student accommodation building is shown here. It incorporates damage avoidance systems such as rocking frames shown inset) and sliding hinges

Capability in Independent Research Organisation Funding

HERA noted with interest the pre-election announcement of the Ministry of Science to introduce Capability of Independent Research Organisation Funding. This is an important step to maintain research capability of national significance outside the publicly funded system of universities and CRIs.

However it is noted that associations funded by a commodity or industry levy are excluded from applying with the exception that the Science Board may nevertheless determine that an organisation is eligible if it has a unique R&D capability of national importance, but is unable to be supported adequately by the income generated by the levy. HERA believes it is in exactly this situation.

HERA recommends:

- That Capability of Independent Research Organisation Funding is implemented without delay to ensure important research capability is not lost in the transition from old funding mechanism to the new.
- That HERA research funding is considered in the exclusion exception of levy base-funded research organisation with R&D capacity of national importance in the Capability of Independent Research Organisation Funding proposal.

Recognition of R&D and Expensing

While R&D is the basis element of the innovation process, downstream commercialisation of the research results make the actual process happen and will lead to the anticipated returns. This commercialisation in general is a costly process which requires investment in new plant and equipment, testing of pilot products, training of people and IP protection. Often it is finding the money for these costs which stifle the commercial uptake of R&D results.

A positive measure to financially assist companies is to permit the complete write down of R&D cost in the first year. This reduces tax payment in year ONE and therefore frees up working capital for further investment. The measure will be largely cost neutral to government as it is a matter of timing when tax is paid, not a reduction. 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 a reduced first year tax take.

The steel* fabrication *industry has invested heavily in more productive plant over recent years. This photo is from the new Welded Beam Line installed at HERA member Dixon and Haddon. The product fabricated here are the Kopu bridge girders.

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

HERA recommends:

- To make the early stage R&D commercialisation costs 100% tax deductible in the form of depreciation in the first year
- To introduce faster depreciation rates on productive manufacturing equipment

3.1.2 Public Funded Research and its Impact on Industry

It is recognised that publicly funded research via the Crown Research Institutes (CRI) and the universities has a key role to play, especially in the longer term fundamental and blue sky research area. It is also acknowledged that New Zealand's share in government funded R&D is relatively close to the OECD average while the industry funded R&D is well below average. In HERA's view it is the increase in industry R&D spending which will create the greatest return to investors and generate growth in the New Zealand economy. The effort has to be put on how public sector R&D can promote and support increased industry R&D.

HERA very much supports the thrust of recommendations in the MSI commissioned "Powering Innovation" report, which is based on the findings of an independent panel - comprised of Business NZ CEO Phil O'Reilly, AUT University's Professor John Raine and Professor Mina Teicher, an Israeli academic - who looked at the high value manufacturing and services sector in order to find ways public research organisations could better support firms.

HERA contributed via submission and presentation to the MSI report and is pleased to note that many of its recommendations concur with industry thinking. The recommendations made are excellent and provide clear and detailed guidance to government and research providers to move forward and transform to become more effective in assisting the commercial sector in performing its R&D role.

HERA particular*ly* supports the report's following recommendations:

- Restructuring CRI - IRL as a "platform for industry" to be known as Advanced Technology New Zealand (ATNZ), with premises developed in Christchurch and Auckland in addition to IRL's existing Lower Hutt campus.
- Focus ATNZ on engineering and applied science, expanding industrial development projects and downsizing basic research projects which may be transferred to universities or other CRIs.
- Introduce more flexible arrangements for employment, intellectual property rights and benefits to encourage collaboration between research organisations, tertiary organisations and industry.
- Provide incentives to research staff to move after a period of employment with the research provider into industry
- Develop a national innovation strategy

However HERA has concerns that the reports translation into action as presented by the Prime Minister John Key puts too much emphasis on the development of the publicly funded research provider's capability and not enough on how to empower and support industry to increase its innovation activities through R&D. This latter emphasis would help industry to value research, become effective research managers and in the process create a demand driven research cycle for research providers to interface with.

Transferring the current IRL into a three site Auckland, Christchurch, Wellington, organisation to be known as Advanced Technology New Zealand (ATNZ) with the corresponding staffing and equipment will cost (as indicated by the Prime Minister) an additional $150 million over 5 years. These are significant tax payer resources and if not accompanied with a culture change which

entrenches industry as providing the lead, may not achieve the significant increase in outcomes from R&D which New Zealand needs.

Additionally HERA argues that under the current economic conditions with the pressure to have quick improvements, the majority of the government funded research should be satisfying immediate to medium term needs with a high probability of implementation and return on investment

It is noted that specifically in the government funded, academic R&D programs, there is often little industry involvement in the definition of R&D needs and therefore lack of industry pull with little to no industry involvement in the research, its governance and its funding. With the argument that research is not exploited unless it is applied in industry the missing link is really more industry involvement.

HERA recommends:

- That more government R&D money is channelled through industry rather than directly through the research provider to industry. This will result in industry deciding what research provider they wish to spend R&D funds with. Demand will then dictate which research providers and what research services best meet the needs of industry and determine which will expand and thrive.
- That in largely academic programs government R&D policy puts more emphasis on industry involvement in the determination of research needs and its funding, the performance of the research and in the governance process.

WET-NZ's - a research collaboration between IRL and Power Projects Ltd – half-scale wave energy device being fabricated at Stark Brothers in Lyttleton and being deployed for first sea trials

3.1.3 Economic Development Strategies

HERA in principle supports the government's Economic Development policies and agrees with the need to set priorities and support development of selected industries. We feel development opportunities for our industry sector are very much in the high value manufacturing category.

Apart from being valuable as high value manufacturing , our industry sector is also of national strategic importance as it supports a wide range of key industries such as the agricultural and food sectors, the energy sector, the building and construction sectors and a range of critical infrastructure. The strong link between our industry and industries such as food processing,

minerals, petroleum and renewable energy, provide an opportunity for parallel development, providing solutions for local industry which can then be sold into offshore markets

HERA believes local industry development objectives do not feature strongly enough in many of the government and sector strategies as the strategic objectives focus on desired outcomes. e.g. in the Energy Strategy the strategic objective is to have "90% renewable energy by 2025" while the development of a local industry which could benefit from striving to support this target does not feature as a development aim.

In the context of setting priorities and galvanising interests HERA believes that the elevation of selected industry development projects to "Projects of National Significance" would be an effective tool to be applied by government. As has been done in Denmark which benefitted by such a move to create a world leading wind energy industry, New Zealand will benefit from well researched and argued "Projects of National Significance". An example of this could be the elevation of the research and development priority around geothermal energy generation technology for export markets to a project of national significance. This would enable the pulling together of all relevant government departments (e.g. MSI/MFAT/MED/MFE) under MED/NZTE leadership, which along with an associated industry development roadmap, would contribute significantly to developing a solid export focussed industry.

HERA recommends:

- The inclusion of local industry development objectives in national economic development strategies
- The creation of "Projects of National Significance" for industry development in order to focus national efforts

The new 100MW Kawerau Geothermal Power Station has highlighted again the potential for New Zealand in geothermal energy. Through the collaborative effort of Geothermal New Zealand, export opportunities for NZ geothermal opportunities are explored.

3.1.4 Lead User Innovation

As nations struggle to drag themselves out of the economic malaise caused by the global economic crisis, they all seem to agree that the solution is through 'innovation'. There are many different aspects to innovation, but one that HERA believes has great potential for a small economy is lead user innovation. Lead user innovation refers to a situation where a company will work with one or more of their customers to provide innovative solutions to better meet their customers' needs. This means that the lead customers get the early advantage of the innovation and the companies gain a customer ready solution easier to take to market.

The UK's national innovation agency, The Technology Strategy Board, in their recent strategy document, "Driving Innovation: Concept to Commercialisation" particularly highlight the role of lead user innovation in relation to public procurement which they say, "…. offers great opportunities for Government to act as an 'intelligent lead customer', encouraging and purchasing innovative products and services which can then go on to further commercial success." They go on to say that they will be" ….working across Government to make public sector procurement a force for innovation."

HERA believes lead user innovation is an especially suitable tool to apply where government funding is constrained as it is often not the government which invests directly but the lead organisations under the government's direction. In the New Zealand context, the State Owned Enterprises and Government departments like Defence, or at a local level the city councils are amongst the largest procuring entities in the country and offer huge opportunities for New Zealand industry to work with them to develop and supply superior solutions to those they sometimes end up with.

There are many examples where lead user innovation could apply in New Zealand such as SOE's that use geothermal energy engaging with NZ companies to improve their plants and in the process, the companies develop geothermal plants that industry can then take to the world.

HERA recommends:

- That the government develops and adopts a lead user innovation policy which is then integrated into the appropriate government procurement guidelines and the SOE Act.
- That mechanisms and incentives are developed to encourage larger non- government entities to engage with industry as lead users in innovation.

3.2 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. The NZ metals engineering industry as outlined in the introduction, is a significant, viable and strategically important industry. Our industry understands that it is required to be not only locally but also internationally competitive as it operates in a global environment. To maintain our competitiveness we need policies which recognise the importance of the industry sector and provide an effective framework to support the development of the industry.

3.2.1 Government Procurement Policy

The government's procurement spend is approximately $30 billion per year. This is significant and HERA supports the government's efforts to improve government procurement performance through improved efficiency and finding more innovative and cost effective ways to deliver public services.

As a result of this spending potential public sector procurers have a major influence on the procurement chain and the ratio of local content versus imported content.

The impact of using local content versus imported content goes beyond the direct jobs gained. In a Business & Economic Research Ltd (BERL) report produced for NZTE's Industry Capability Network it was established that for every $1 million spent in manufacturing activity in New Zealand, an extra 11 jobs are generated. This also results in $117,000 tax revenue and $195,000 of added purchasing power, and if we assume associated job generation, $119,000 saving of government welfare payments.

The benefits of local supply are numerous:

- Reduced risk for tax payer funded Projects
- Sustainability for local industry
- Contribution to the wealth and social well-being of New Zealand
- Improvement to the balance of payments
- Support of strategically important industry and infrastructure capability
- Maintaining and developing industry skills base
- Strong demand drives innovation, competition and growth for NZ

The need to develop local content has been recognised by most countries including those which are part of joint free trade agreements with New Zealand and they actively support the development of local industry input into projects funded by public money or receiving contributions via grants or other means from the public purse. As an example, the Australian Government announced on the 6th October 2011 to make federal grants of $20 million or more contingent on maximising opportunities for Australian business.

Additionally, if project developers wish to receive the 5% tariff exemption on imports for major projects they are required to publish more extensive details on opportunities available to Australian Business. There is now also the requirement for industry participation plans to be made public, providing greater transparency. Some Australian states are going further than that, such as the Victorian Government who introduced a local content quota of 90% for the building of a A$1 billion Comprehensive Cancer Centre. They also expressed a strong commitment to the development of a Local Industry Development Plan.

While we accept that the New Zealand government may not feel in the position to make such strong commitments such as specifying minimum local content requirements, we request the Government to consider the implementation of Industry Participation Plans, so that local manufacturers are identified early in project proposals and given a fair opportunity to compete.

HERA fully supports the NZTE-ICN Draft Guide for Project Owners entitled “Developing and Implementing Local Industry Participation Plans” which is adapted from their Australian counterpart document.

HERA recommends:

- That the ICN Draft Document “*Developing and Implementing Local Industry Participation Plans*” be made a mandatory requirement for all major public sector procurement
- That no import tariff exemption be given unless a detailed and satisfactory Industry Participation Plan has been provided
- That consideration is given as to how the document can also be made mandatory for SOE’s, including under the proposed mixed ownership model.

3.2.2 Whole-Life Costing

HERA understands that government procurement guidelines stipulate that whole life costing principles are adopted for all procurements. However, we note that the guidelines lack clarity on how to do this and make little reference to their adoption, especially in the context of combining the costing method with consideration towards maximising local content usage.

HERA notes that the UK is a leader in this field where they apply this cost minimisation philosophy through its adoption in their “Achieving Procurement Excellence” guidelines. Through following these guidelines, not only are lower whole-of life project cost achieved, project procurement and operational risks are also reduced. An added benefit is the support

such a process provides to being able to undertake triple bottom line reporting in relation to economic, social and environmental outcomes.

In connection with the NZ Industry Participation Plan policies recommended above, it is noted that linking the two themes under the heading of "Achieving Procurement Excellence" has major potential benefits. Higher level economic goals that accrue from local content become the focus resulting in a shift in focus away from the 'lowest contract price' mentality driven by blind adherence on Free Trade Agreements. An excellent example of this can be seen in the UK with their Office of the Government Commerce document, "Whole-life Costing and Cost Management, Achieving Excellence In Construction Procurement Guide".

Based on the fact that whole-life costing places emphasis not only on the start-up project procurement cost but also the operational cost over its life time, there are generally improved tender opportunities for local suppliers. This is because local suppliers have significant competitive advantages if operating, servicing and also end of life disposal or recycling are considered at the time of the project planning and in the tender process. This will result in lower whole of life costs and improved business opportunities for our local industry.

HERA recommends:

- That a whole - life costing approach to public sector procurement is made a mandatory requirement for all government and public sector procurement under the overall theme of achieving excellence in procurement
- That adequate measures are undertaken to ensure uptake of whole –life costing as the overriding procurement decision making tool
- That the government considers making whole-life costing a significant component of the establishment of Local Industry Participation Plans

3.2.3 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 the provision of performance expectations, we believe government is able to influence their procurement behaviour in particular through the objectives as set in their 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 and without regard to the intent of strategic Government initiatives.

In the context of a potential SOE Act review to accommodate the requirements of mixed ownership model it may be an opportune time to place requirements for them to support overriding national interests into the Act.

HERA recommends:

- That the SOE Act be reviewed in relation to best practice procurement.
- That major project procurement must include the establishment and publication of local industry participation plans
- That whole- life costing principles or the higher level procurement excellence principles are followed.
- That a requirement be placed on SOE's that in relation to major projects that they operate as good NZ corporate citizens including support for national priorities in industry development.

3.2.4 Free Trade Agreements

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

The HERA position fundamentally is:

- Trade conditions negotiated have to be fair and equal (no other non-tariff trade barriers or unequal compliance cost burdens)
- If tariffs are removed it has to go both ways i.e. if the tariff applicable in NZ is zero %, the tariff with the treaty partner has to be zero %.
- All elements of influencing fair and equal trade need to be considered including:
    - Health and Safety requirements – a comparable standard should be met
    - Code compliance – design, material and quality requirement should be comparable
    - Practices on imported labour - where an advantage is gained from importing and exploiting guest labourers as in the case of shipyard workers imported into Singapore from Bangladesh and paid significantly below local wage rates that this is noted as an unfair advantage
    - Safe guards to prevent against dumping need to be implemented.

HERA recommends:

- That free trade agreements are weighted in relation to the level of equity between New Zealand manufacturers and those overseas

4 Labour Market Policies

4.1 Skills Availability Issues

While the recession and subsequent slow recovery has damped some of our industry's demand for skilled people, we continue to note on-going shortages particularly in the higher skilled professional groups. Our sector continues to lose skilled people particularly to Australia and with our intent of growing the higher value engineering products based export market, we need to address skills availability issues. This must be done through a suitable mix of measures from attracting people into those higher value industries, education/training, skills importation, skills retention and appropriate payment scales which will accrue from participating in higher value markets.

4.2 Education/Training

Skills Training

HERA supports the submission of its key ITO Competenz to the Ministry of Education. The COMPETNZ submission raises the following issues:

- There are too many ITOs. Companies have to deal with too many different approaches to training, back office costs are duplicated and economies of scale are not achieved
- The duplication through Modern Apprenticeship Coordinators adds confusion and cost and ITOs have no control over the performance of MACs, and yet ITOs are measured on a MACs performance
- Funding rates add friction. On-the-job training attracts one Government funding rate, being the STM. The STM rate is not enough for ITOs to deliver on their statutory obligations, and buy block courses, support numeracy and literacy skills building, support under-represented groups, and support under 21's. Funding could be graduated to reflect Government objectives and be fair to employers.
- The cost to employers is too high, particularly for vocational education in areas requiring high investment from employers like mechanical engineering. Graduated funding to reflect the true cost of training would ease the burden and encourage building a skilled workforce.
- Improving productivity through transferable skills. New Zealand needs to upskill and to do this, training needs to be delivered to national standards with training delivered when companies want it, how they want it and how much they want.
- Quality, quality, quality. Industry needs to determine the standard of qualifications to reflect the capacity and standards they require. This needs to be backed up with robust moderation by ITOs to protect industry's and Government's investment.

HERA recommends:

- That the above consideration of the COMPETENZ submission are considered and particularly the point of gaining efficiencies through the merger of ITOs.
- That government recognises that Industry training is essential and needs to be cost effective; however the cost to employers is too high and therefore limits uptake especially in difficult economic times.
- There needs to be more emphasis on providing career paths from school to work, but also further on into leading positions i.e. progression beyond Level 4 qualifications.
- Industry must be involved in setting national standards for qualification, and the advisory functions offered via the ITOs deliver this. However, delivery of standards must become more effective and consistent and without the continued duplication of efforts across different ITOs.

Professional Education/Training

HERA understands that universities limit student intake numbers due to funding caps placed on them. HERA supports limiting educational spending at a time of economic constraint and in particular in skills which contribute little to the productive economy, based on the understanding that specifically professional engineering skills are in short supply. We note that there are more applicants for university entrance than there are funded places available in the engineering disciple. It seems to be appropriate that caps on university entry requirements are reviewed and funded on need for productive economy related professions, such as engineering.

HERA recommends:

- That funding caps limiting student numbers in priority professions supporting high value growth industries such as mechanical engineering are reviewed and relaxed

Students taken through the Fletcher Easysteel's facilities as part of a wider industry tour to showcase the engineering industry as a potential career path

5 Sustainability

5.1 Emission Trading Scheme (ETS)

The NZ metals industry is acutely aware of the importance of sustainable development as the materials it uses have a high level of embodied energy and as such is increasingly subscribing to adopting best practice. HERA R&D follows international developments in minimising the environmental impact of metals and promotes consideration of re-use and recycling, usage minimisation through use of higher strength grades or corrosion protection work to enhance its lifespan and associated environmental performance and the environmental performance of our industry

NZ metals producers have signed up to international conventions for emission reduction and are proud to note that New Zealand steel and aluminium are largely produced from renewable energy. This low-carbon production sets New Zealand apart from most international competitors making the over $2 billion annual export contribution even more valuable.

Our industry recognises the need for emission reductions and on first principle supports all measures including emission trading schemes which aim to reduce New Zealand carbon emissions. However, especially under the consideration that the international metals commodities produced in New Zealand are in respect to carbon emissions, arguably international best practice, every effort must be made by Government to ensure that in Free Trade Agreements, our industry is not disadvantaged and that there is a level playing field. Our industry will then do its part to maintain its competitive position and continue providing jobs and export revenue.

Also we believe that the current Government strategy towards climate change is missing a major opportunity to reduce New Zealand's emissions, and the associated cost burden from the ETS, in that no recognition is made of reducing carbon emissions from the construction sector. Approximately 17% of New Zealand carbon emissions are from the construction and operation of buildings. Moreover, the built environment is one of the few sectors where reducing emissions saves money rather than imposing a financial burden on the taxpayer. In a similar way as China's plan to reduce the energy consumption of residential and public buildings by 65% by 2020, it is felt that it would be helpful if the government set an aspirational goal to encourage the New Zealand building sector to develop low carbon technologies.

HERA recommends:

- That government ensures equitable treatment of the NZ metals manufacturing on a national and international level when formulating policies relating to the ETS or in the negotiation of any Free Trade Agreement.

- That the government encourages the built environment to reduce its carbon emissions.

5.2 Sustainability in Building and Construction

HERA contributed to and supports the Construction Industry Councils (CIC) statement on government policy. The following points are made.

Through the creation of the Sustainable Steel Council (SSC) which comprises the key organisations and companies of the metals based industry, it now has a unifying body which brings the industry together to focus on the sustainable development of the industry. The SSC also places emphasis on the contribution its products and services make to a sustainable building and construction environment.

In terms of sustainability of New Zealand's infrastructure, HERA research supported by government funding, has made significant contributions particularly to seismic resisting structural steel based construction and it continues to have a major R&D focus in this area.

5.2.1 Measuring Sustainability

As a sector that represents 17% of New Zealand carbon emissions, HERA supports best practice in sustainable building design, construction and operation. GreenStar is New Zealand's leading environmental assessment method and rating system for buildings. In a similar way as other rating tools around the world, the uptake of GreenStar has been driven by investors and developers because of: enhanced marketability; recognized brand associated with quality buildings and organizations with active corporate social responsibility; represents a low risk investment choice; reduced letting voids; and a good return on investment.

Steel is arguably the most sustainable of the major structural materials. It has numerous sustainability benefits, which are guaranteed to be realised whenever steel is used. They include: low waste; flexibility; offsite manufacture; speed; resource efficiency; adaptability; demountability; long lasting appeal; safety; reusability; and recyclability. Unfortunately, until recently, the steel credit in the GreenStar tool provided technical barriers which were discriminatory towards steel-frame construction. As a consequence of this HERA supports the recent NZGBC Products and Materials Advisory Group (PMAG) and Products and Materials Industry Group (PMIG) initiative, which provides a platform for proving high-level guidance regarding the strategic approach to products and materials within the rating tools.

Life Cycle Assessment (LCA) is an analytical tool for the systematic and quantitative evaluation of the environmental impacts of a product or service system through all stages of its life, which are underpinned by international Standards. LCA studies the environmental aspects and potential impacts throughout a product's life (i.e. cradle-to-grave or cradle-to-cradle) from raw material acquisition through production, use and disposal. Although LCA's are being used by many of New Zealand's major trading partners, it is still in its infancy in the building sector owing to the fact that, to date, work on the New Zealand Life Cycle Inventory (LCI) database still needs to be completed. Nevertheless, recently, many larger product and material suppliers are undertaking their own LCA to improve their environmental performance.

In the interests of reducing the burden on users of demonstrating the environmental credentials of a particular material or product used in sustainability rating tools, ecolabels have been introduced. However, ecolabels on New Zealand products are unlikely to be accepted in overseas territories. As companies are undertaking their own LCA the natural progression is to develop Environmental Product Declarations (EPDs) for their products. EPDs provide detailed information and environmental data and are often considered analogous to a nutrition label on food packets, in that they are a brief, quantitative summary report of key issues of the product; moreover, they are also regarded as neutral as they provide all relevant product performance information rather than relying on predetermined environmental performance levels. In view of the international uptake of EPDs with its trading partners (e.g. the US Green Building Council has just introduced EPDs in their LEED and, in Europe, EPDs will be required as a means of demonstrating that the requirements of BWR 7 of the Construction Products Regulation are met), HERA supports the recognition and adoption of EPDs within New Zealand.

HERA recommends:

- That the government supports the development of a New Zealand LCI database and encourages the use of LCA.
- In the interest of improving New Zealand exports, the government encourages companies to develop EPDs for their products.

5.2.2 Seismic Building Resilience

The analyses of the damage caused by the Canterbury earthquakes demonstrated that by & large 'modern' building standards are adequate to protect lives in a serious earthquake. But it also highlighted two other significant aspects.

The first aspect is that much of the legacy building stock was so severely damaged that it now has to be demolished and completely rebuilt at huge cost and with the uncertainty of getting appropriate insurance cover for the rebuilt solution.

The second aspect, which has so far found very little coverage in the Royal Commission on the Canterbury Earthquakes and in the media, is the fact that some of the buildings representing specific building systems performed very well and could continue to be occupied without or with only very little repair. One such group is structural steel framed buildings, which were built under current structural steel design guidance and under competitive market conditions, costing the same or only little more than the competing solutions which failed next to the structural steel buildings and could not be reoccupied.

The 13 storey structural steel framed HSBC Tower on Worcester Blvd. was the first multi storey building re-occupied after the February 2011 Christchurch earthquake. The 2006 building designed to current steel construction guidance demonstrates that competitive technology exists to minimise potential earthquake damage

In other words there are building systems now in place which survive higher level earthquake loading at competitive cost. Additionally, further R&D based product development would offer further scope to increase the resilience of the building stock without significant extra cost. Provided the reduced risks associated with higher level resilience is well understood, there should be no reason that insurers should not insure such buildings and the extra confidence given to owners and occupiers should create the confidence that living in such buildings is safe. The key issue in HERA's opinion, is that a more resilient built environment can be achieved without substantial additional cost and certainly should whole – life costing principles be applied, & such systems should easily find economic justification.

New Zealand is not alone in coping with the aftermath of serious earthquakes and tsunamis and following international developments, HERA advocates the development of a Seismic Building Resilience System. This would operate similar to energy efficiency or car safety rating systems, providing an assessment of the building stock. Voluntary introduction followed by adopting of minimum compliance standards for publicly funded buildings would in the long run, lead to the wider adoption of such a system. This wide adoption will then provide incentives for further development of seismic resilient NZ building systems.

In the context of building more seismic resilient infrastructure, we believe that Government-funded research and development programmes are currently focussed disproportionately on seismicity and geotechnical considerations. While this is informative and accepted as necessary, it should be noted particularly research on earthquake prediction cannot stop earthquakes happening and that an increased focus should be on undertaking more future-focussed research to develop damage avoidance technology to protect human life and the value of assets.

HERA recommends:

- That government explores and supports the introduction of a Building Resilience Rating System

- That more research on seismic and tsunami damage avoidance is stipulated in national research strategies and stimulated accordingly through appropriated funding.

6 Construction Materials Research and Promotion

6.1 Construction Materials Research Prioritisation

R&D in construction is a key driver for the competitiveness of different building systems. Funding support for research investments comes from the tax payer via the MSI channel but also in the case of timber research through separate MAF funds. The BRANZ administered building research levy is also a significant contributor to the sector's research with annual contributions typically exceeding $15 million.

The metals based construction industry in the same way as the concrete or timber based industry contributes to the tax based income of the government and the building levy in proportion to their market share and overall economic contribution.

In particular MAF-administered actions such as the Forest Industry Development Agenda (FIDA) are initiatives which one-sided benefit one material system and are not accessible in a contestable manner by neither steel nor concrete.

Also BRANZ activities funded from the building levy appear to favour funding research for timber based construction and best practice advice and do not sufficiently reflect market trend changes which see e.g. steel construction in multi storey construction having grown from virtually 0% in the 80s to close to 50% market share today.

HERA recommends:

- That government funding of construction materials specific research is balanced commensurate to a material sector's economic contribution or in strictly contestable fashion based on performance expectation.
- That policy on R&D funded from the building research levy includes statements on construction material neutrality and the setting of R&D priorities reflects construction material contributions to the building research levy.

6.2 Government Officials Statements on Construction Materials

HERA believes that in a free market economy, it is the market which must determine which building system or construction material to choose. It is for the market players to demonstrate the benefits of any one particular system over a competing one.

HERA also believes that public office bearers representing the general interest, while entitled to a personal opinion should be neutral as to the promotion of one particular solution over another one. For example in the context of the rebuild of Christchurch we note that Ministers have expressed support for timber construction as the preferred material for the rebuild of the city.

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 it stands neutral in terms of advocating one material over another and rather promotes the use of materials on a fit for purpose basis. HERA believes such a policy should also guide public office bearers such as MP's or be followed when public procurement guidelines are developed such as in the Green Star rating requirements for buildings.

HERA recommends:

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

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