Summary
The greatest risks to this nation, our economy, the society and environment are attributable to climate change. The defence forces are best prepared to meet demands necessary to address and implement appropriate mitigation strategies and preparations. The myriad risks should be identified, assessed and progressively prepared for.
The defence force has most of the skills, resources and logistic structure to provide an appropriate response framework.
Dramatic and disruptive change is required to cater for new threats of climate, diaspora and technologies.
Cost efficiencies through principals of circular economy and stewardship will increase capability and reduce non-recoverable costs.

Introduction
If a serious and pervasive threat exists to the wellbeing of every facet of this nation, it must be at the forefront of this nations defence planning and action. It must be a key consideration in every major decision, influence procurement and, most critically, be in a review to establish policy settings and strategic issues over the next decade.

The impacts of climate change will be serious and pervasive, effecting almost every facet of Australia's economy, society and environment. Since decisions taken today will have long-lived consequences, there is need for action to start now. Australian Government Website.

A wide, diverse and well-informed and growing body of experts are forecasting major disruption to systems of economy, society and environment.

The impacts of climate change will be serious and pervasive, effecting almost every facet of Australia's economy, society and environment. Since decisions taken today will have long-lived consequences, there is need for action to start now. Federal Government Website

It is generally accepted within the scientific community, and the leadership of most developed nations that we have entered the critical decade for climate change response. (apo.org)

Moving to a low carbon economy generally and developing defence capability that is not dependent of the remaining and depleted fossil fuels, is one of the greatest challenges, and opportunities, that this nation faces today. The urgency of this imperative, the strategic benefits and whole of economy outcomes cannot be understated.

Unfortunately the prevailing emphasis from government and industry is to focus on short term challenges rather than long term benefits to national security, economy and society.
If the designed life of defence platforms is 20+ years it is folly to ignore the scientific body of knowledge that is in concert regarding timing, cause and effect of climate change.

Climate Change, exceeding planetary limits and the false premise of economic growth, poses risks to food security, raw material supply, and critical infrastructure, industry and resource ownership and perhaps more directly through foreign supply of the materials, products and services that support our defence force. In the absence of leadership and specific defence related research, these systemic threats may appear benign. They are nothing of the sort.
Climate Change, civil disruption, system collapse and population diaspora pose real and immediate risks to this nation internally and from foreign nations through cyber, physical and economic
incursions. Energy mix, supply and delivery must be considered in this context beside rare material deposit ownership and procurement. Platform design and manufacture and materiel sourcing represent opportunities for foreign intervention of supply chains creating weaknesses and dependencies not in this nations best interests nor representing whole value for money.

**Threats and Opportunities**

*One of the greatest challenges for the world today is to combat and adapt to climate change.*

Department of Defence Website.

The Defence forces of this nation represent a platform on which we may build prosperity, innovation and industry for this century. Defence Materiel Organisation represents a framework to establish standards and set benchmarks against which all this nations major industries may be measured and our goods and services delivered against. Just one piece of legislation, The Product Stewardship Act 2011, provides a cross partisan agreed framework that allows for the examination and demonstration of origin, impact and provenance of products and services. If this act was used as a benchmark for the delivery of product and service to the defence forces it would significantly address both the threats and create immense opportunities in the nations best interests. It would provide industrial security, product provenance and service transparency.

If the DMO was to embrace the principals of product stewardship and the theories of a circular economy, significant risks may be mitigated and social and environmental impacts addressed. It is incumbent on the Australian Government to achieve ‘value for money’ and to ‘maximise opportunities for Australian industry.’ Value for money must be considered in whole of lifecycle considerations. From a stewardship perspective in a circular economy this will involve; raw material sourcing, design for end of product life, material retention and reuse, in-service use (not necessarily ownership) of platform and product, through life support and end-of-life management. The future is one of material retention and design for sustainability. Supply, sovereignty and security may be addressed which will result in significant cost savings over the product/platform lifecycle which may allow increased capability for the same or less financial outlay.

**Accuracy of current settings**

Policy settings of direct attack and addressing indirect threats to trade, cyberspace, local terrorism, crime, resource supply and evolving global circumstances will influence border protection and national security. Underlying influences identified collectively as global trends must influence decision making over the longer term.

Global trends identified and largely agreed by the big four consulting firms, CSIRO and most larger global corporates include

- Asian growth in consumption as 2/3 of the globes middle class emerges in our region.
- Age & Population ratios create demands on new skills and services.
- Sustainability, Resources, Circular Economy, Productivity, as above.
- Product ownership trends towards the institution and personal ownership falls.
- Demand for increased Government transparency and civil participation grows through technology
- Relationships & networks allow for instant communication creating the need for ‘supervision.’
- Urbanisation loss of diversity, concentrations of populations.

Some of these trends may appear of little concern but the results and outcomes will pose new threats that raise policy setting and direction. Of particular importance will be the role of diplomacy as an active component to the strategy of prevention, avoidance and diversion. Again the apparent light or absent emphasis on climate change may be an obvious omission in our defence setting.
Current needs and preparedness
Diplomacy perhaps represents the best value for money. Prevention and the raising of soft skills within our defence forces, will provide this relatively small nation an increased participation as a global voice in turbulent times. The above trends and associated risks will place demands on negotiation, involvement and engagement of foreign governments and even global corporations as trade agreements increasingly involve rights of access, license and markets. The role of diplomacy in these arenas will provide a first point of reference and with governance a preventative measure.

Industry/Defence relations
To consider outsourcing the largest items of taxpayer funded procurement to a foreign nation, will inevitably weaken Australia’s industrial integrity, sovereignty of intelligence and security of sea borders. The submarine project represents perhaps the greatest single opportunity for Australian industry to demonstrate world class capability and certainly the most opportune project to save Australian manufacturing base from terminal decline. National interests and capability are at the core of such high technology and diverse skill projects of global standing. There would be few silos of the nations economy not in some way involved in a project of this magnitude. To engage foreign technologies, workforces and governments to undertake a project so fundamental to the civilian and military national interest would demonstrate a significant lack of foresight, loyalty and courage. In some instances the benefits and nation building attributes may not be measured in coin. Divesting this once in a half century opportunity for fiscal expediency would be narrow, short sighted and damaging decision.
To use procurement price as justification for the outsourcing of whole sections of defence materiel, divorces cost and isolates value from the equation.

Australia’s national interest throughout systems must be considered first in defence materiel and product provenance is critical to ensure security of procurement, self-reliance, sovereignty and local industry capability.

Value for money of local spend includes benefits to skills development, intellectual property, entrepreneurship and capital opportunity.

A robust local defence industry across all forces provides documented benefits and as previously noted establishes baselines and benchmarks that drive productivity and sustainability outcomes in neighbor industries. The benefits flow through the economy and produce indirect prosperity and growth leading to investment opportunities and a cycle of investment, innovation and entrepreneurship.

If the nations soldiers are equipped with the tools of their trade by non indigenous suppliers, products of demonstrably dubious design, material and manufacture, and decisions are based on purchase price alone, what message does this send our local industries? What opportunity is offered to Australia’s industry to compete on international stage?

There is an imperative today to consider value integrity, whole of cost and the principals of stewardship and product provenance, cradle-to-cradle lifecycle and the circular economy. These are not pretty words, they are fundamental principals of a planet that is burdened with increasing scarcity of raw materials, over-burdened planetary systems, and a new economy that is poised to collapse many traditional systems of the old order. These global trends pose real, immediate and fundamental risks to the national interest that are not generally recognized and certainly have never before been faced.

Human investment and Culture
Opportunities exist to align education, unemployment, home ownership and national service. As has been noted, defence frameworks provide a structure from which whole of economy solutions may be enjoyed.
A national service scheme may be established that provides the skills for civil and military service. There are few logistical barriers to developing a scheme where service to community or state is rewarded with supported loans for education, homes ownership of other meaningful return. Meaningful contribution for meaningful reward.

Every citizen on leaving secondary education may be offered the choice of incentivized service to further human investment, culture and national identity. Not detailed here but there exist immeasurable opportunities for nation building and strengthening communities through a scheme calling for engagement in return for what has to date been expected as a right from government. Involvement in the armed forces at every discipline would quickly grow capability, skills and national identity along with a reserve force of significant measure.

General comment
National interest of Australia in the 21st century goes well beyond what has previously been experienced or understood. Recognised and well documented global trends including climate change, resource scarcity, skills shortages, regional growth in middle class consumption and rapid growth in digital mediums all require home advantage responses.

The greatest of these risks and challenges is Climate change because it recognises no borders. Political, social, economic and national boundaries are largely irrelevant.

The implications of climate change will result in diaspora, civil unrest and infrastructure loss.

Out sovereignty and national interests may be impeded upon through many varied avenues. We represent a key target to the new and evolving threats of this century and our preparedness for imminent and unparalleled disruption is lacking. These threats are not the conventional arms or nations we may be accustomed to or conventionally prepared for. They are threats to and of; intellectual advantage, resource security, diaspora, health and our ability to sustain our sovereignty of land, food, energy and identity. These are 21st century threats in a context of unparalleled change.

Our nations defence forces represent the only platform that contains elements throughout our society, economy and government that may be brought to bear, in a coordinated and timely manner to address the real and immediate risks posed by this confluence of well-documented global trends.

Australia's national defence is more than uniforms, medals and arms. It is also thinking, systems and services. It is values based on loyalty, courage and commitment. It is intellectual property, integrity and provenance. It represents a body of knowledge, skills and resources that every citizen should be proud of, does depend on and should contribute to. It is perhaps the best spend of taxpayer dollars and must be in a position to transparently demonstrate this feature. It must be tasked with the setting of standards, baselines and benchmarks. These criteria must be evident to the public if genuine engagement and civil support is to be assured.

Most of the points contained in this submission may be supported by academic and peer reviewed research however in this instance a decision was made to maintain plane language. The Defence forces of a democracy must be wholly used in the best interest of the nation. Defence and security of a nation in the 21st nation is immensely more complicated, integrated and interdependent on the systems of the home country than ever and even more so given the dynamic and evolving, home and foreign threats of extremism, bio-security and regional unrest. The real and evolving threats to human health, bio security and incursion require robust whole system thinking. Defence and security relies on the unique specifications, character and sovereignty of the host nation. This element is what defines us, must be defended & what makes us worthy of defence. Knowledge, intelligence, education, intellectual property and support service systems are both critical and integral to the security of the nation.

Sourcing, design, procurement & manufacture, supply, use & maintenance, end of product life
management, raw material recovery, refurbishment, recycling & reuse must be demonstrated as national best practice. Engagement of the whole population, all citizens, for their security and long-term wellbeing is a feature of democracy and fundamental to the efficient and integrated defence of nationhood, national identity and our security. Whole system thinking, whole of product life management and whole of life value must be understood and must be applied to the procurement of a nations defence. Compromise, outsourcing or delegation of any link in the procurement of national defence, weakens the integrity of the system as a whole & allows foreign interest to gain advantage. If not the Defence force, where? The Australian citizen pledges loyalty to, is compelled to vote for and pays tax in the trust and pursuit of good governance. Our national armed forces defend that loyalty, democracy and trust. Loyalty, democracy and trust within our borders and beyond. Loyalty to fellow citizens, equitable, transparent and democratic governance and trust in the systems of nation building. The white paper review is fundamental to providing direction, vision and security for this century and as such must not be constrained by short term political, economic or partisan interests.

These real and immediate risks find parallel only in a lead up to war and the required national mobilization, allocation of resources, direction of skills and intellect, diversion of industry through command and control will resemble those seen only once before in the lead up to the second world war. This perspective is not fear mongering, political opportunism, vested interest or of any motivation beyond the best interests of this nation, our citizens and our security. Our nations leaders, those individuals entrusted with the political, economic and industrial welfare and security of the citizens, must better understand the risks represented and evidenced in the happening and concurrent events of;

- Global essential-resource depletion,
- Socio-economic and physical diaspora,
- Anthropogenic climate change,
- Exceeding of planetary limits,
- Loss of bio, social, economic diversity,
- Civil disruption through inequity and exploitation,

A focused, public and integrated approach must be adopted to prepare for and to mitigate the threats posed by these global trends. The appropriate response may only be delivered through the structures and integrated systems of this nations defence forces. Today the structure and integrity of our defence force is the only available platform from which to mobilize the necessary skills, resources and logistics to respond to these threats. Our defence force has the attributes to best implement an appropriate course of action. We should look to national preparations leading into the second world war that allowed the appropriate response to threats of similar magnitude. From the civilian perspective the short term vision and action of industry and politic is in conflict with the long term demands, supply chains and procurement practice of defence of nation.

I look forward to an opportunity to expand on the themes raised here.

Regards,
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