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Science System Advisory Group

By email: info@ssag.org.nz

Submission on the Science System Advisory Group Consultation – Phase I

Introduction

1. Energy Resources Aotearoa is New Zealand's peak energy sector advocacy organisation. Our purpose is to enable constructive collaboration across the energy sector through and beyond New Zealand's transition to net zero carbon emissions in 2050.
2. This document constitutes our submission for the Science System Advisory Group (SSAG) Phase I consultation, addressing high-level sectoral questions concerning the role of science and innovation in New Zealand, aimed at informing an interim report.
3. It is important to note that this submission is targeted at a high-level based on our key areas of interest. Our intention is to expand on this and provide more specific operational advice during Phase II of the consultation process.

Submission

4. The energy sector holds a strong interest in shaping the strategic and operational future of New Zealand's science, innovation, and technology system.
5. We fundamentally agree that the challenges listed under item 4. of the SSAG terms of reference¹, particularly those regarding systematic issues are constraining the overall performance of the system. Specifically, the coordination across industry, government and higher education requires strategic redevelopment to align and adapt to emerging markets.
6. The energy mix is rapidly evolving, marked by notable trends: a gradual decline in the role of hydrocarbons, rapid growth in renewable energy, an increasing electrification of the world, supported by low-carbon hydrogen in processes and activities that are challenging to electrify.

1 SSAG Terms of Reference Document, February 2024 [SSAG-ToR-2024.pdf](#)

7. It is imperative for our nation to establish the right systems to foster capability and promote science, technology, and research to support the energy sector. This can be achieved through initiatives such as:
 - a. developing and enhancing evidence based, critical thinking mindset of our future entrepreneurs, with public policy support to foster innovation and entrepreneurship across all levels of education in New Zealand;
 - b. facilitating regional, national and international collaboration across communities, educational institutions, industry and governments;
 - c. implementing diversity initiatives, including promoting STEM gender equity and supporting Māori and Pacifica in flexible learning pathways through science education and funding; and
 - d. promoting and engaging with science and technology on a national scale.
8. The future energy workforce depends on emerging talent in science, innovation, and technology. We strongly advocate for a targeted approach to broaden public and community knowledge of the energy sector and how the energy system operates, as this would cultivate a stronger interest in energy-related fields and enhance connectivity with science, innovation, and technology.
9. The evolving nature of New Zealand's energy system presents opportunities for creative and innovative energy solutions. Thus, we recommend utilising the energy trilemma (affordability, security, and sustainability) as an analytical tool to capture the nuances and trade-offs inherent in the energy landscape.²
10. We are optimistic that the SSAG will leverage its influence to effectively redesign the science system, facilitating a more efficient research and development model. Equally we anticipate a revitalised innovation system to nurture a future pipeline of talent among students who possess a strong and positive interest in science, innovation, and technologies.
11. As a small country, New Zealand could benefit significantly from a collaborative approach, drawing on knowledge from scientists, industry, community, policy makers and educators.
12. Energy Resources Aotearoa is actively engaged in collaborative initiatives aimed at developing the energy sector workforce, including STEM programmes and activities for primary schools, internship, graduate and curriculum development support and promoting gender diversity. We eagerly await the opportunity to provide further details on our programmes throughout the SSAG Phase II consultation process.

2 For more information about the energy trilemma see: <https://www.worldenergy.org/transition-toolkit/world-energy-trilemma-framework>.

Concluding remarks

13. We appreciate the opportunity to offer insight into our high-level areas of interest through this submission for Phase I of the SSAG consultation process.
14. We are committed to supporting the SSAG as it addresses challenges and strategic priority areas and look forward to participating further once the SSAG releases its interim report and moves into a more operational discussion in Phase II of the consultation process.