2022 consultation: The Productivity Commission (TPC)

A competitive, dynamic and sustainable future (interim inquiry report #4).

Consultation response from the Institution of Chemical Engineers (IChemE)

1. IChemE supports the need for metrics to be aligned to climate change targets.

Chapter 3 of the Productivity Commission (TPC) report has identified the importance of aligning the metrics in the targets and transition processes – for example, through reformation of the Safeguard Mechanism. The recommendation to align targets, metrics, and approaches is critical for industry decision making, investment and training, across the Commonwealth and State jurisdictions. This alignment would strengthen the work by organisations such as IChemE to upskill professionals and create practical solutions for efforts responding to climate change.

2. TPC report needs greater emphasis on skills. It requires a training and a workforce plan for an economic transition utilising the skilled labour force from declining industries into areas with skills shortages.

Australia's highly skilled workforce is valuable and must be retained. Many IChemE members work in these traditional industries, which include production and processing of coal, oil, natural gas, LNG, minerals and hard to abate sectors. Over recent decades, facilities such as oil refineries have closed in Australia, and skilled workers have transitioned to other fields, or emigrated.

The TPC recommendations would be improved by proposing a training and workforce plan that identifies the skills gap and a roadmap for identifying, attracting, upskilling and reskilling the workforce from declining industries to address these gaps.

Chemical, process, and biochemical engineers, bring valuable skills for critical industries and the energy transition. This expertise can create solutions to transition to a low carbon economy, enhance energy security, develop critical industries, and build the circular economy. This expertise is also required for post pandemic recovery across energy, materials, agriculture and health industries.

Some of the skill sets provided by chemical engineering align to industry priorities for the government:

- Energy, including hydrogen, natural gas, and LNG, clean energy technologies, carbon capture, utilisation and storage (CCUS)
- Mining, critical minerals extraction and processing
- Manufacturing and hard to abate sectors - such as steel, aluminium and concrete
- Industry, materials, waste and the circular economy
- Sustainable food, health, water and agriculture

IChemE engineers enable services such as climate and environmental measurement and disclosures and the use of digital technologies for improved productivity, efficiency and sustainability. Also, they have valuable skills for innovation, scale up and commercialisation of technologies.

3. IChemE agrees with ongoing role for government support of research and development, particularly in frontier technologies

Chapter 3 of the Productivity Commission (TPC) report emphasises that government support of research and development should be explicit, transparent, and subjected to rigorous cost benefit analysis, particularly in frontier technologies where market failures are most relevant. It also highlights the importance of governments having a mechanism to 'move on' when it becomes clear that a frontier technology will not be successful**.** As the report states, it avoids defending 'sunk costs'. As these frontier technologies, and other similar technologies, utilise core chemical engineering expertise, such as in hydrogen and CCS technologies, IChemE through its member base can provide knowledgeable and objective advice into the decision-making process for continuing the future support of these technologies.

4. IChemE supports the need to build trade resilience through developing robust supply chains

Chapter 2 of the Productivity Commission (TPC) report highlights the importance of managing risks to the supply chains with a focus on 'critical' and 'essential' goods. This is an important area where IChemE through its diverse member base can provide inputs and advice especially within the manufacturing sector employing chemical engineering skill set as discussed above.

The Institution of Chemical Engineers (IChemE)

The Institution of Chemical Engineers (IChemE) is a professional association with 30,000 members. IChemE is a not-for-profit, member-led qualifying body and learned society that advances chemical engineering's contribution worldwide for the benefit of society. We support the development of chemical, biochemical and process engineering professionals and provide connections to a powerful network of over 30,000 members in more than 100 countries. The Institution of Chemical Engineers in Australia has a board and staff in Australia.

This response has been produced by IChemE members in Australia and draws on the Institution's position on climate change published in November 2020.[1] In 2020-22, IChemE also produced sectoral plans to support climate change action in multiple industries and jurisdictions, including energy transition, clean energy, water, food and pharmaceuticals. IChemE has submitted a detailed formal submission to the Low Emissions Technology Statement 2022 consultation: Department of Industry, Science, Energy and Resources, Australian Government.

We support our members in applying their expertise and experience to make an influential contribution to solving major global challenges, including achieving the UN Sustainable Development goals.

IChemE would welcome the opportunity to provide more detailed information to TPC if required.

[1] https://bit.ly/3ptN8C9