

# SUBMISSION: IMMIGRATION – FIT FOR THE FUTURE

Te Ao Rangahau Engineering New Zealand (formerly IPENZ) is Aotearoa New Zealand's professional home for engineers. We are the strongest and most influential voice on engineering issues in the country, with more than 21,000 members who want to help shape the public policy agenda and engineer better lives for New Zealanders.

## INTRODUCTION

This submission responds to the New Zealand Productivity Commission's report *Immigration – Fit for the Future: preliminary findings and recommendations* (the consultation document). Thank you for the opportunity to respond to the Commission's preliminary findings and recommendations on immigration settings in Aotearoa. The consultation document is well drafted and reasoned, providing us with an excellent basis for conversation. Overall, the Commission is to be congratulated on its work to address the current immigration settings and gaps, as well as identifying opportunities that exist to strengthen the immigration system.

## RELEVANCE OF IMMIGRATION POLICY TO ENGINEERING

Aotearoa's immigration settings are of great importance to the industries engineers work within. The capability and capacity of the profession to deliver on our national ambitions both now (i.e., stimulus infrastructure development) and in the future (i.e., transitioning to our climate change goals) requires significant engineering talent. Some of the talent we need is developed domestically. However, our workforce development is not keeping up with demand and we are increasingly dependent on overseas recruitment and retention, particularly in highly specialised engineering disciplines. This submission focuses on the demand for engineering talent, and our views on the findings and recommendations.

## **Engineers' contribution to Gross Domestic Product (GDP)**

Engineers contribute significantly to Aotearoa's economy. Work undertaken by PwC in 2020 indicates that engineers contribute approximately five percent of GPD or about \$213,000 per employee for engineering.<sup>1</sup>

## **Contribution of migrant engineers**

Aotearoa New Zealand has a chronic engineer shortage, as evidenced by long-term skill shortage lists.

Migrant engineers contribute significantly to our economy, supporting industry and Government to achieve ongoing demand for services.

## **Future demand for engineers**

According to PwC, we need approximately 1,500 new engineers a year to support economic growth. We also need engineers to fill gaps created by existing engineers who retire, take up other occupations or leave the profession for other reasons.

PwC's estimates took place before the Covid-19 pandemic. As the Commission is aware, stimulus spending on infrastructure has increased the need for further engineering talent. More engineers than ever are needed to support our ambitions. We do not expect this to change in the medium- to long-term future, as engineers are needed to deliver major infrastructure projects, transition to carbon neutrality, adapt to our changing environment, and support Aotearoa's ongoing economic activity across all industries, from agriculture to electricity distribution and even education and health.

In 2020 Aotearoa graduated 1,647 tertiary qualified engineers (level 5-7). This is roughly three percent of total level 5-7 graduates.<sup>2</sup> Recognising many engineering graduates will never practice in engineering or will migrate overseas, we are simply not producing enough talent to meet increasing demand or to fill vacancies created by engineers leaving the profession or the country.

Furthermore, we are concerned about the long-term pipeline of engineers. Our students are not performing well in basic science and mathematics compared to their peers overseas.<sup>3</sup> There has also been a decline in the uptake of National Certificate of Education Achievement level 1 and 2 algebra and calculus.<sup>4</sup> Basic science and mathematics education paves the way for future 'home-grown' engineering talent.

## **Pipeline of work**

We are supportive of the Commission's recommendation to introduce a Government Policy Statement (GPS) on Immigration that outlines the direction and priorities for the decade which takes into account and links into other relevant GPSs.

The Commission has highlighted that the immigration system is disconnected from other government settings and policy, in particular infrastructure. Immigration, through its impact on population growth,

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<sup>1</sup> PwC. *Economic contribution of engineering*. February 2020.

[https://www.engineeringnz.org/documents/587/Economic\\_contribution\\_of\\_engineering\\_PwC\\_February\\_2020.pdf](https://www.engineeringnz.org/documents/587/Economic_contribution_of_engineering_PwC_February_2020.pdf)

<sup>2</sup> Education Counts. Fields of specialization for students gaining qualifications from tertiary education providers 2011-2020.

[https://www.educationcounts.govt.nz/\\_data/assets/excel\\_doc/0019/41716/Field-of-specialisation-for-students-gaining-qualifications-from-tertiary-education-providers-2011-2020.xlsx](https://www.educationcounts.govt.nz/_data/assets/excel_doc/0019/41716/Field-of-specialisation-for-students-gaining-qualifications-from-tertiary-education-providers-2011-2020.xlsx)

<sup>3</sup> 2019 Trends in International Mathematics and Science Study <https://timssandpirls.bc.edu/timss2019/>

<sup>4</sup> Te Herenga Waka—Victoria University of Wellington <https://www.wgtn.ac.nz/news/2021/12/decline-in-students-taking-key-ncea-maths-standards-research-finds>

necessitates infrastructure development. As the Commission notes, the development or supply of infrastructure, including adequate housing, needs to catch up with demand. Greater transparency, clarity and forward-planning in the immigration system in the form of a GPS, that is linked to associated statements and strategies (e.g. infrastructure and education), will enable industry to plan and act accordingly.

## SUMMARY OF FEEDBACK

Overall, we support the Commission's findings and recommendations as outlined in the consultation document. We agree with the Commission that immigration settings are not isolated policy considerations, and that further analysis and transparency is required in the future. We support recommendations that the Minister of Immigration should be required to develop and consult on an immigration Government Policy Statement which sets out immigration objectives, priorities, and processes.

The Commission's analysis focuses on the net impacts of immigration. We understand the reasons for this approach but are concerned that it does not quantify the considerable contribution of highly skilled migrants, notably engineers, to both productivity and wellbeing. In this submission we will highlight the significant contribution of individual engineers to both productivity and Aotearoa's wellbeing ambitions. We ask that further policy work on immigration settings recognise the significant contribution of skilled migrants, particularly engineers, and consult with industry on forecasting and demand for these migrants.

### General comment on the consultation document

In Part 1 of the consultation document, the Commission sets out the purpose of the inquiry as framing "what sort of working-age immigration policies would best promote New Zealand's long-term economic growth and the wellbeing of New Zealanders." Wellbeing is then defined as including "the effects on social, natural, physical and human capitals; as well as impacts on income distribution, resilience and the Treaty of Waitangi." While the analysis on income is well-reasoned and supported by evidence, the other capitals, in particular natural capital, are given little attention throughout the consultation document. We are highly supportive of the inclusion of the Treaty of Waitangi and considerations of long-term resilience of the immigration system, however, would encourage future work by the Commission to increase its consideration and analysis of all four capitals as fundamental to the wellbeing and productivity of Aotearoa New Zealand.

# FINDINGS, RECOMMENDATIONS AND RESPONSES TO QUESTIONS

In this submission we respond to several of the Commission's findings and recommendations as they relate to immigration of engineers into Aotearoa. We also answer several, but not all, of the Commission's questions.

## IMMIGRATION POLICY IN NEW ZEALAND

### Finding 1: Immigration's main contributions to productivity and wellbeing

We agree with the Commission's findings on immigration's main contributions to productivity (as outlined in the consultation document). We note that the professional skills of migrant engineers support human capabilities in Aotearoa, particularly in niche sub-disciplines such as tunnel engineering. Migrant engineers

also support Aotearoa to achieve its social, environmental, and economic policy objectives through expanding the capacity and capability of the sector, as well as strengthening its innovation ecosystems.

## EFFECTIVENESS OF THE CURRENT SYSTEM

### **Finding 3: Immigration has had a small and mostly positive effect on wages and employment.**

Regarding finding 3, the Commission's analysis looked at the total impact of immigration on wages and employment. While we understand this approach, it fails to acknowledge the various levels of impact across the different classes of immigrants (skilled migrants versus other classes). Notwithstanding wellbeing impacts, different immigrant classes contribute differently to productivity. As outlined above, engineers contribute considerably to both Aotearoa New Zealand's productivity, and support the country to achieve its social and economic policy objectives.

We agree with the Commission's point that "Overall, evidence on labour market effects does not, of itself, point to major problems with the level and composition of immigration into New Zealand".

### **Finding 4: There is no consistent feedback mechanism linking skill shortages evident in the immigration system to potential responses in the education and training system**

We strongly support this finding. As highlighted above, we have significant concerns that the education and training system is not filling long-term engineering skill shortages. This is evidenced by the long period of time engineers have been on skill shortage lists.

Given Aotearoa's relatively small scale internationally, there will always be situations where specialist engineers need to be recruited from overseas. In an ideal world this would be the exception and not the rule.

### **Question 1: To what extent does access to migrant labour reduce training and upskilling?**

We hold strongly to the view that Aotearoa must be better at developing its engineering workforce. As the Commission points out, it may be that our ability to bring engineers into the country is limiting the focus we are giving to our own skill shortages.

We must begin building the workforce now. As outlined above, Aotearoa's primary students are not performing well in science and maths. This limits later learning in both subjects, as well as technology and engineering.

We support the development of homegrown talent. Since 2018, Te Ao Rangahau Engineering New Zealand has developed a programme to inspire more young New Zealanders (Year 1 – Year 13) to pursue careers in engineering and other science, technology, engineering, and maths (STEM fields). The [Wonder Project](#) is primarily funded by Callaghan Innovation and takes young Kiwis on a creative, dynamic, and fun STEM journey via hands-on, student-led programmes designed to fit seamlessly into the Aotearoa school curriculum.

In the past two years, almost 30,000 Kiwi school kids have taken part in our Rocket Challenge and STEM Careers programme – and we've doubled the number of Kiwi kids wanting to be engineers.

While we are doing what we can to develop talent, it is ultimately the Government's responsibility to train and upskill local engineering talent. We ask Government through the Ministry of Education, the Tertiary Education Commission, and other relevant organisations (including Workforce Development Councils and

Regional Skills Leadership Groups) to prioritise performance in science and maths and to highlight the need for engineers to build Aotearoa's future.

Furthermore, we encourage individual engineers to upskill and develop. Both Chartered Professional Engineers and members of Te Ao Rangahau Engineering New Zealand annually commit to ongoing professional development. We also provide continuing professional development for engineers.

## **WIDER IMPACTS ON WELLBEING AND PRODUCTIVITY**

### **Finding 7: Impacts on labour productivity**

Finding 7 outlines the view that overall, immigration has small positive impact on labour productivity and minor or conditional effects on innovation and exporting as channels for productivity growth.

As with finding 1, finding 7 looks at total immigration. This does not appropriately identify the significant contribution of classes of skilled immigrants, such as engineers. Regarding productivity, PwC's research indicated that engineers contribute significantly to productivity. Per employee, engineers are nearly three times as productive compared with those employed for tourism (\$213,0000 of GDP per employee for engineering, verses \$73,400 per employee for tourism).

Furthermore, some of the industries engineers work in, notably research and development, manufacturing, and primary industries, are key contributors to innovation and exporting.

### **Finding 9: Regardless of immigration levels, planning, land use regulation, and infrastructure policy reforms are needed**

We agree with finding 9 and have been advocating to Government for planning, land use regulation and infrastructure policy reforms. These must be continued regardless of immigration levels.

### **Finding 10: Capacity and capability resiliency risks**

Finding 10 outlines Aotearoa's labour resiliency risks, with the country's overdependence on the migrant workforce. We agree with this finding, noting that engineering labour shortages have been significantly exacerbated by the Covid-19 pandemic and the closing of our borders. To us, this has clearly highlighted our labour risks. We note that most Government consultation documents now highlight capability and capacity concerns. The most recent examples include Ministry for the Environment's *Te hau mārohi ki anamata Transitioning to a low-emissions and climate-resilient future* and the New Zealand Infrastructure Commission's consultation document *He Tūāpapa ki te Ora - Infrastructure for a Better Future*. Aotearoa is at significant risk of relying on immigration to fill the demand for a skilled workforce.

### **Recommendation 2: The Minister should regularly develop and publish an immigration Government Policy Statement**

We strongly support this recommendation, which would require the Minister to set out short-term and long-term objectives, performance measures, response to Treaty of Waitangi requirements, a description of how the demand for temporary and resident visas will be managed over the period of the GPS, and specification of planning ranges for new residents over the period. Should this recommendation be accepted by Government, we ask the Government consult with industry in the development of each GPS.

### **Recommendation 3: Government to quantify New Zealand's absorptive capacity and how it intends to manage capacity**

In principle we support this recommendation, but query how this will be measured and monitored and how varying immigration objectives will be managed in a transparent way through this process. As with recommendation 3 above, we ask that Government consult with industry on absorptive capability.

### **Question 2: What objectives should be included in an immigration Government Policy Statement?**

An immigration GPS should set out:

- Strategic priorities for Immigration New Zealand
- Aotearoa's short-term and long-term skills shortages
- Industry forecasting and demand
- Wider Government policy settings impacting immigration, including workforce training and development plans
- Aotearoa's absorptive capacity
- Anticipated migrant levels across categories
- Roles and responsibilities for delivery of GPS (including transparent targets and timelines for Immigration New Zealand)

We strongly support an immigration GPS because we see it as a mechanism to provide transparency and clarity on the work of Immigration New Zealand.

### **Question 4: Annual number of resident visas**

We do not have a view on the numbers of resident visas that should be provided each year. However, we ask Government for transparency on the numbers set. We also ask Government for an ongoing discussion with industry on the setting of numbers, as well as the setting of resident visa options, as this significantly impacts our ability to attract overseas talent. The ability of migrants to obtain resident status impacts on our international competitive edge. The international market for specialist engineers is competitive. While we cannot always offer the most competitive salaries, Aotearoa is a desirable country for many migrants because of wider lifestyle considerations. Resident visa settings therefore impact our desirability.

Finally, consideration must be given to the pathway for international students who have studied engineering in Aotearoa. Currently, international engineers graduating in Aotearoa can work for three years on a study to work visa. At the end of three years, we lose considerable talent because these migrants do not reach Immigration New Zealand requirements for residency.

## **CONCLUSION**

Thank you for the opportunity to comment on the consultation document. While we have not answered every question, we have sought to raise key points on the Commission's findings and recommendations as they relate to the engineering profession.

We strongly encourage Government to progress work on Aotearoa's immigration settings. The Commission has done an excellent job outlining opportunities for improvement and we are supportive of these. We

need to be involved in the ongoing work and ask Government to consult with industry as this work progresses.

Engineers are at the heart of work needed for Aotearoa to reach its productivity and wellbeing ambitions. However, we are not producing enough engineers to meet current demand. Furthermore, we have significant concerns that our students are not being appropriately trained in mathematics and science and that this will leave further gaps in the engineering talent needed. Aotearoa relies on migrant engineers and our future immigration settings must acknowledge this. We must also support long-term consideration of how Aotearoa will address its skill and capability gaps.

To this end we would value further conversation with either the Productivity Commission or Immigration New Zealand on the work ahead.

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