

SEQ 2050: Next Generation Skills and Industries



Discussion
Paper

Introduction

The Committee for Brisbane is committed to supporting the development of Greater Brisbane as the world's most liveable place.

In this context, we acknowledge that South-East Queensland (SEQ) is on a rapid growth trajectory in terms of population, employment, housing and infrastructure. Recent growth has been significant and there are no signs of it abating. Combined with the infrastructure investment required to support the Brisbane 2032 Games, the next 10 years should be a 'Golden Decade' for SEQ. However, this rapid growth trajectory also comes with challenges which must be met and addressed through proactive action and innovation.

The Committee for Brisbane seeks to advocate through the priorities of connectivity, creativity, equity and enterprise.

In relation to 'enterprise', the Queensland Government's 2023 release of its 'new-industry development strategy', combined with the innovation and future-focused goals within the SEQ City Deal, provide an environment to explore the immense opportunity in the next generation of industries and jobs.

Accordingly, the **Committee for Brisbane has commissioned Arup** to further explore the background and policy context of the next generation of industries and jobs. This research has been undertaken through a literature review and interviews with key industry experts and leaders to investigate SEQ's industries and jobs of the future.

This paper is the first step to provide context for further discussion on this important topic. The paper provides an overview of the policy context, SEQ's regional advantages and summarises the outcomes of the stakeholder interviews.

Combined the paper reveals an exciting range of enablers to be harnessed and challenges to be addressed to leverage growth in our emerging and future industries and position the SEQ region to positively exploit the 'Golden Decade'.

The State Government Policy Context

In May 2023, the Queensland Government released its ‘new-industry development strategy’ that focuses on developing the enterprise sectors that will be increasingly in demand in a decarbonising world. The strategy outlines six development priorities, including:



Renewable energy



Green hydrogen



Critical minerals



Circular economy



Battery industry



Bioeconomy

Based on these priorities, roadmaps have been developed for the six key industry sectors that have been identified by the Advance Queensland vision as having global growth potential:

Advanced Manufacturing	Aerospace	Biofutures
<p>Manufacturing is Queensland’s third largest employer of full-time workers and contributes \$19.2 billion to the economy.</p>	<p>By 2028, Queensland will be a leading centre in Australasia and South East Asia for aerospace innovation, attracting significant international investment and providing high-skill jobs for Queenslanders.</p>	<p>Queensland has world-class expertise in research and development, including three commercial biorefineries. It is estimated these plants generate up to \$100 million in revenue for Queensland.</p>
Biomedical	Defence	METS
<p>Biomedical employs more than 9,000 people and contributes \$1.4 billion in value to the state economy, with the potential to grow by almost 40% and employ up to 3,000 more people by 2027.</p>	<p>Queensland has a growing reputation as the ‘go-to’ state for defence and security solutions. Our defence industry directly employs more than 6,500 people across all sectors.</p>	<p>The Queensland mining equipment, technology and services (METS) sector is a major exporter contributing more than \$7 billion gross revenue to the state; with 26,700 jobs in technical, scientific and professional services.</p>

Source: <https://www.statedevelopment.qld.gov.au/industry/critical-industry-support/industry-roadmaps>

Further, the SEQ City Deal, which brings together the three levels of Government to support one of Australia's fastest growing regions, includes the following priorities over the next 20 years:

- Shifting to an innovative and knowledge intensive region;
- Advanced manufacturing, agribusiness, transport logistics and innovation services;
- Enhancing SEQ as an export focused region.

Given its plethora of advantages, SEQ is well positioned to further amplify achievement in the fastest growing industries as well as support new and emerging priority industries.

The SEQ Context and Opportunities

SEQ's enviable lifestyle, great education system and strong, diverse economy are just a few of the many reasons why the region's population is growing and is expected to continue growing over the next 30 years.

Key demographic projections fueled by sizeable positive net migration indicate there will continue to be reliable and increasing sources of population growth, and therefore workforces, to support the Queensland's regional and State economies. SEQ's population is anticipated to grow to approximately 6 million by 2050, with almost 8 out of 10 Queenslanders living in the south-east corner.

SEQ's geographical proximity to Asia and positioning as the eastern gateway to Australia, along with an increasing interconnectivity and shifting global economic focus towards Asia are presenting numerous opportunities in the region. SEQ has well-connected major economic areas and gateway ports, including four international airports, and is home to several key export-oriented industry hubs. Resources, world-class education, research institutions, defence assets, and natural environments deliver advantages for SEQ including strong employment opportunities and an enviable tourism and recreational economy.

The SEQ climate and topography sustain robust and growing agricultural industries, and emerging industry specialisms and expertise in health, education, aerospace and energy, as well as world-class facilities in biomedical, drone and robotics technology. Along with these advantages, SEQ also has substantial physical (geographical) space to accommodate satellite precinct expansion.

Matters of concern

Although the significant increase in population is predicted to provide a substantial ongoing supply of labour - a positive factor for the region - it will also continue to exacerbate an ongoing housing supply challenge for Government, industry and the community. There are an estimated 1.5 million dwellings in SEQ currently, it is anticipated the region will need an average of 34,500 new dwellings each and every year until at least 2046, to cater for demand.

Another key challenge will be ensuring the security of the SEQ workforce, not only in terms of growth in numbers of employable workers, but also in terms of skills alignment with future industry and development.

Additionally, it will be imperative that services and infrastructure continue to grow to accommodate the increasing population. Transport, utilities, energy supply (and diversity) and education services will all need to 'scale up' significantly.

Although the region's future is promising, there are a number of macro environmental trends that will each need monitoring and addressing, including:

- Governments to shift towards more equitable land-use to ensure the right mix of residential, industrial, and agricultural land near urban centres.
- Social inequity based on proximity to urban centres;
- Managing finite resources sustainably and transitioning from a resource industry dependency;
- Pressure on biodiversity, impacts from climate change and natural disaster resilience;
- Aging population, changing workforce structure and housing demand;
- Capital shifting from emissions intensive energy sources to renewables; and
- Vulnerability to technology disruption and to emerging and existing giants.



Industry Viewpoints

Interviews with stakeholders representing key industries of the future, indicated a range of enablers and challenges to achieving growth in emerging and new future industries.

Firming up investment

“Uncertainty creates a fear...potentially losing the momentum as we are identifying gaps and issues.” (Industry leader, Biofutures)

Industry experts universally identified a need for consistent funding and long-term investment in Queensland’s next generation industries. Although we don’t yet need to be alarmed, experts advised that we need to be alert to the issue of potential private investors in Queensland being attracted to other states where overall industry direction and planning has more clarity and certainty. Improved clarity in direction from Government and industry in Queensland would enhance progress in not only securing investment but also achieving momentum on other progressive outcomes.

Policy-making to drive community behaviour change

Industry leaders are calling for greater coordinated Government effort to drive behavioural change from the community to support the required industry transitions. The industry perspective is that proof of community behaviour change would demonstrate progress needed to attract and retain investors.

Additionally, in some sectors policy amendment is perceived to be required with a shift in balance from tax offsets to greater availability of grants.

All experts interviewed expressed a need for more certainty, for investors particularly around the tax regime in Queensland, as well as new funding mechanisms to attract private sector investment.



Evolving our skills

*“Almost 100% of people currently working on heavy trucks will need to upskill.”
(Industry leader, Heavy Trucks)*

Experts interviewed for this project unanimously agreed that a crucial enabler of growth in new and future industries is an evolving skills base in SEQ. This was deemed achievable through attracting, retaining and upskilling the workforce in high-tech, STEM, and digital skills, as well as developing platforms for skills-sharing and accessibility.

Although it was acknowledged there will always be a need and a place for revolutionary thinkers and creative problem-solvers, it was suggested the current highest priority is to fortify the workforce with the skills to implement and activate smart and creative design-thinking. For the immediate future, the top priorities are ‘doing skills’ such as trade and manufacturing skills, rather than creative or conceptual skills. As industries implement more technology to streamline processes and systems, improving the digital literacy of labour-based workplaces will be important to maintain employment levels to meet organisational requirements.

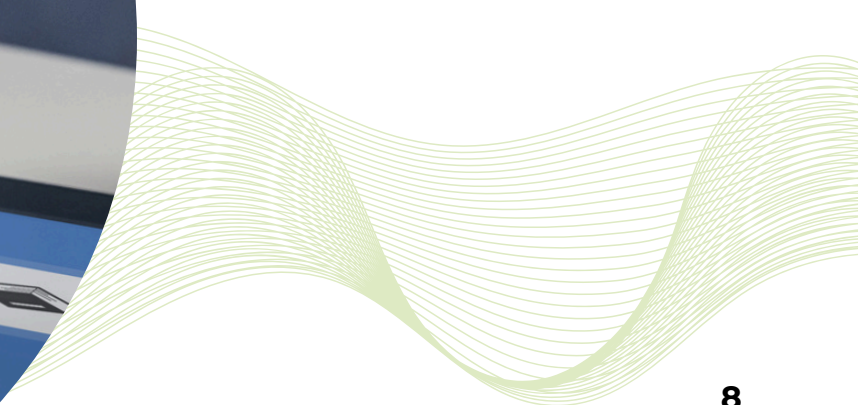
Industry experts believe an immediate challenge to be resolved is the elimination of leakage of these implementation skills to other states, and cited the issue of talented workers pursuing advanced career opportunities they assume to be more plentiful and accessible in other states.



Beyond retaining and attracting the right skills, continuous upskilling of Queensland's workforce will be necessary, requiring greater access to higher skills education locally to avoid losing talent interstate or overseas with people leaving for study purposes and failing to return.

Upskilling will be dependent on accessibility not only to university education locally, but also increasingly to vocational training which will become more vital. It was suggested there should be more industry and Government-funded PhDs as well as trade and vocational apprenticeships now to encourage upskilling education to be undertaken in SEQ and to improve retention of local graduates and talent.

Enhanced connection between industry, trade, and education institutions, fostered by collaboration mechanisms such as virtual knowledge ecosystems combined with urban built precincts, are seen as necessary to leverage the education platform in SEQ. There is a shared perception that SEQ is producing smart and high-quality academic research that is not sufficiently integrating and deploying into industry activation.



Rebalancing the attraction of trade versus university pathways

*“[Trade] industry is currently perceived as dirty, dangerous and demeaning.”
(Industry leader, Advanced Manufacturing)*

Amplifying the skills shortage problem is the image perception of “blue collar” or trade-based occupations. Whilst SEQ has provided attractive career opportunities for white collar professions, industry experts believe blue collar trades have not been encouraged to the same extent and have had less opportunity to have a voice in planning our cities. In fact, it’s perceived that industry activities have traditionally been pushed to the periphery of the city as they are seen to be “dirty”. Experts believe there is not just an opportunity to change this perception, but it is becoming increasingly critical to rebalance the attraction of the different pathways to better integrate trade and industry into more central positioning physically and through a change in mindset.

It was suggested the perception problems relating to trades-based industry continue to be perpetuated within our schools and among education providers who adhere to and support the philosophy that a university pathway is more desirable for high-achieving students and provides better life quality outcomes. Trade careers can provide excellent long-term career outcomes with opportunities to upskill in advanced digital technologies in manufacturing, energy, infrastructure and transport. Farming and agriculture suffer from a perception that farmers are not innovative technology adopters, when in fact agriculture is a highly technologised and innovative industry.

Overall, the quality of our skills base in SEQ will depend on greater connection and partnerships between industry and educators along with a concerted commitment from Government to address and reform image perception problems that are undermining our ability to retain and build the right talent pool for our successful future.



Connectivity on steroids

*“Better connect industries with people.”
(Industry leader, Advanced Manufacturing)*

The concept of an ecosystem, hub or platform to support knowledge flow and skills sharing across industries was commonly referenced by industry leaders who were interviewed for this report. Clustering collaborating adjacent industries together with education providers in both physical precinct and non-physical virtual forms was repeatedly raised to build industry ecosystems.

Skills linked to complex and advanced digital technology disciplines, such as digital twinning, AI and robotics, were ubiquitously seen as essential for emerging and future industries, and the ability to seamlessly match these skills with industry problems and requirements is an equally important challenge.



Infrastructure investment and transformation

“Long duration [energy] storage won’t be in the city – but requires good infrastructure to distribute to where its needed and to ensure energy is not lost when distributed” (Industry leader, Hydrogen)

SEQ’s energy transmission infrastructure and network stability were raised by the experts interviewed as areas of concern, with neither perceived to be of sufficient scale to support either current nor future usage. A number of factors are seen to be contributing to this issue: one is the lack of evidenced community change in energy usage behaviour which is continuing to place strain on the distribution network; another is inadequate progress being made in battery technology.

While green energy production was also mentioned by interviewees as an issue, the lack of energy storage is seen to be a greater impediment than production of energy, and it was suggested that Government needs to invest more heavily into fast-tracking battery technology.

In terms of community electricity use, it was suggested that generation and distribution need to be set up differently for public versus private usage. There was mention of more need for smart and micro grids for private (industry) use which could be integrated with shared infrastructure, services, and skills through a hub precinct approach.



Innovating our urban and built environment

*“Vertical built environment instead of spread environment”
(Industry leader, Advanced Manufacturing)*

Urban and road design was discussed by interviewed stakeholders as a way to expedite infrastructure improvement along with future built form accommodating hybrid and multi-use buildings. Industry experts felt that SEQ urban and built design must be future proofed, including exploring innovative ways of reducing building footprint; designing for multiple use scenarios; and planning for precinct collaboration between adjacent industries.

It was also mentioned that zoning needs to be re-thought in relation to enabling hybrid and multi-use assets, as well as supporting the ability for built form to adapt and change as industries and job types evolve.

Taking a clustered built environment approach and reducing footprint spread was also seen as a key way to protect greenspace and agricultural land, providing a better balance between competition for agricultural land and active food production. This would allow SEQ to continue leveraging the natural living environment as a strength, rather than a challenge. As Queensland cities continue to grow, this pressure is increasing, and proactivity is required to ensure a balance between built environment, agricultural land and greenspace is maintained.



Capitalising on our natural assets

Many industry experts interviewed referenced SEQ's enviable natural environment and favourable climate as both a lifestyle attractor and creating the right conditions for industries such as tourism and agriculture to thrive.

Industry experts indicated they have observed universities and consultants struggling to keep up with changing environmental regulations, and industry is struggling with mandatory reporting, both in skills and knowing how to adapt practice to better align with green targets. With intense competition between land uses, experts recommended that SEQ industry implements a robust masterplan and/or Government policy to develop SEQ as the leading nature-positive sustainability enterprise hub in Australia – treating our natural environment and the greater focus on sustainability credentials as an opportunity not a burden.

While it was acknowledged that a greater focus on sustainability initiatives can add cost overhead to new and existing industries, particularly in the short-term during transition periods, Government policy and financial support is likely to be required to make this a reality. The experts see this step as a major priority.

Developing SEQ's industry sustainability credentials and positioning will be a key attractor to draw younger people into manufacturing and industries traditionally perceived as 'dirty'.

There is also a notable opportunity to link eco-tourism and ag-tourism to pre and post 2032 Games visitation and leveraging this platform to strengthen SEQ's positioning as a sustainability hub.



A Call to Action

So, where to next? It is clear from the viewpoint of industry experts that these matters are not the responsibility of one industry alone to resolve.

There are a number of critical enablers and support mechanisms that should be considered to reinforce and leverage SEQ's advantages and opportunities for future enterprise, including:

- Policy and financial support from Government, industry, consultants, educators and community bodies to focus on enabling growth in investment skills, infrastructure and sustainability of the environment and industries.
- A boldness and willingness for SEQ to actively face the challenges and work together on solutions that benefit multiple industries.
- Capitalising on the 2032 Games to promote SEQ's natural assets and opportunities to grow interest and investment in our industries of the future.

Together, SEQ must support the growth of future industry and skills through fostering collaboration and inter-connectedness to solve common problems and break down silos between industries to facilitate deep industry-Government collaboration to the benefit of all.



Committee for Brisbane's Role

As a member driven organisation committed to making Greater Brisbane the world's most liveable place, the Committee for Brisbane is committed to supporting its members to navigate the challenges and opportunities around next generation industries and skills.

Its unique position as an influential, independent and visionary voice for a better Brisbane means it can harness the knowledge and skills of its diverse membership base to support debate, discussion and advocacy that will lead to meaningful change.

Acknowledgement of Contributors:

- CFB Enterprise Sub-Committee
- Committee for Brisbane
- Arup
- GG Enviro
- H2Q Hydrogen Queensland
- Heavy Vehicle Industry Association
- Queensland Farmers' Federation
- Queensland University of Technology
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