



Australian Government
**Department of Industry,
Innovation and Science**

Industry Growth Centres Initiative

Sector Competitiveness Plans Overview

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Sector Competitiveness Plans – what are they?

Sector Competitiveness Plans are a 10 year strategy developed by each Growth Centre which seeks to support the long term future of each sector.

Sector Competitiveness Plans identify challenges and opportunities facing the sector and put forward actions to meet challenges and capitalise on opportunities. Plans are updated annually to capture and respond to local and international developments in the sector. The Growth Centres' Annual Business Plans outline specific actions that Growth Centres will undertake to address industry needs in the coming year.

The Plans are developed in consultation with stakeholders and provide strategic direction to focus collaborative business, research, education and government sector efforts. The Plans highlight existing partnerships across the sector and further opportunities for collaboration.

All levels of government can draw on the insights and strategies described in the Plans to improve and target relevant industry and innovation programs, inform policy and to ensure that regulation is streamlined and fit-for-purpose.

Each Growth Centre has a Project Fund to support collaborative projects that contribute to the strategic direction outlined in the Sector Competitiveness Plan. Growth Centres also partner with existing resources and networks such as Government programs and industry associations to deliver on the Plan.

All six Growth Centres have published their initial Sector Competitiveness Plans.

In addition to sector specific challenges and opportunities, there are a number of priorities and approaches that are common across the Growth Centres. The common priorities and actions reflect the underlying economic, demographic, technological and digital trends shaping Australian and global industries.

Opportunity

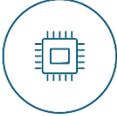
The Industry Growth Centres Initiative is helping Australian firms to be more internationally competitive by enabling industry sectors to build capability and stronger industry systems through a collaborative, industry-led approach.

Growth Centres are working across their respective sectors towards a common goal of internationally competitive Australian industry with a strong presence in the global marketplace. They are achieving this goal by focusing on four guidelines to drive the productivity and competitiveness of Australian businesses.

Guidelines

- Australian businesses must be more engaged in global supply chains and export markets to drive increased exports.
- Better collaboration is needed between industry and the research sector, and within industry itself, to drive innovation to meet market needs.
- Improving management and workforce skills is critical to encourage commercialisation, increase productivity and take advantage of increased export market access.
- Regulatory reform must be aimed at reducing regulatory costs and other burdens, including those self-imposed by industry, to assist long-term growth.

The size of the prize is significant. The Growth Centres have identified following opportunities arising from addressing the four guidelines above in their sectors.

<p style="text-align: center;">AMGC</p> <p style="text-align: center;"></p> <p style="text-align: center;">↑ \$250-350b by 2026</p> <p style="text-align: center;">An increase of \$250-350 billion in the size of the sector by 2026</p>	<p style="text-align: center;">Cyber Security</p> <p style="text-align: center;"></p> <p style="text-align: center;">↑ \$4.7b and 1000s of jobs</p> <p style="text-align: center;">Potential increase by 2026 from \$2 billion* (present) to over \$4.7 billion*, with employee growth from 19 000 to 26 000</p> <p style="text-align: center;">Actions to promote development of the sector could add a further \$1.3 billion* and an additional 5 100 jobs</p>	<p style="text-align: center;">FIAL</p> <p style="text-align: center;"></p> <p style="text-align: center;">↑ supply to Asia Pacific</p> <p style="text-align: center;">Australia is well positioned to take advantage of the growing middle class in the Asia Pacific through improvements to productivity and competitiveness. Australian food and agribusiness already produces enough food to feed over 130 m people, 5 times its population</p>
<p style="text-align: center;">METS Ignited</p> <p style="text-align: center;"></p> <p style="text-align: center;">\$15b in exports</p> <p style="text-align: center;">METS is Australia's largest export industry, with \$15 billion in annual revenue. Improved processes, products and services will have a major impact on Australia's biggest export sector</p>	<p style="text-align: center;">MTPConnect</p> <p style="text-align: center;"></p> <p style="text-align: center;">↑ \$3.2b and 28 000 jobs</p> <p style="text-align: center;">By 2025 the MTP sector could generate a 75 per cent increase of \$3.2 billion* to the economy per annum compared to 2015, with additional 28 000 jobs. 14 000 of these jobs would be in Universities and Medical Research Institutes</p>	<p style="text-align: center;">NERA</p> <p style="text-align: center;"></p> <p style="text-align: center;">↑ \$9.5b (oil, gas, coal)</p> <p style="text-align: center;">NERA has identified the potential for the oil and gas sector to generate an additional AUD\$5 billion* to industry per annum, and the coal sector an additional AUD\$4.5 billion* to industry per annum</p>

*Gross Value Added (GVA)

Vision

The Sector Competitiveness Plan is a strategic vision to boost sector productivity and drive cultural change in the six sectors. By providing an industry-led and strategic vision of their sectors, the Industry Growth Centres are bringing focus and alignment across industry and innovation policy initiatives, including the Entrepreneurs' Programme, Cooperative Research Centres (CRCs), CSIRO and initiatives under the National Innovation and Science Agenda (NISA).

Growth Centres

AMGC

That firms compete through product and service differentiation, and better target export markets while lifting scale and management quality.

The AMGC's vision is to develop and internationally competitive, dynamic and thriving Australian advanced manufacturing sector that boosts the long-term health of the economy of the nation. While the plan will require a national effort from the multiple stakeholders across industry, government and research, the transition, critically, must be led by companies.

Cyber Security

To grow a high trust ecosystem to support entrepreneurs, to export Australia's cyber security capability and make Australia the leading Centre for cyber education.

FIAL

The vision of FIAL is for the industry to work together to grow the share of Australian food in the global marketplace. The Growth Centre will work collaboratively to develop innovative offerings that increase the productivity and competitiveness of businesses in the sector.

METS Ignited

The vision for the Australian METS industry is an aligned, collaborative and agile ecosystem and, through leadership and innovation, a growing share of the global market.

MTPConnect

To transform Australia into the Asia-Pacific medtech, biotech and pharmaceutical hub it has the potential to be.

MTPConnect's vision is for Australia to retain all current and planned levels of research and development (R&D) expenditure while achieving greater commercialisation success, creating more products that reach proof-of concept and early-stage commercialisation, increasing the number of medium-sized to large companies with late stage product successes, maximising the value of any IP-monetisation events along the way, and increasing the scale and sophistication of the supporting R&D ecosystem such as clinical trials. The overall effect would be greater employment and wealth creation for Australia.

NERA

To maximise the value to the Australian economy by having an energy resources sector which is globally competitive, growing, sustainable, innovative and diverse.

Industry Knowledge Priorities

Industry Knowledge Priorities are a summary of knowledge and technology gaps in the sectors. Addressing these gaps will underpin innovation and enhance productivity and competitiveness in the sectors. Publishing Industry Knowledge Priorities should re-focus national industry research and development resources and effort on industry needs and commercialisation opportunities to improve the translation of research into economic outcomes. The Industry Knowledge Priorities may complement or build on the national research priorities endorsed by the Commonwealth Science Council.

Industry Knowledge Priorities are not limited to scientific research. They may include capability priorities for improving business management and capability and understanding international opportunities for the sector.

Applicants for selected industry-focused research programs including Australian Research Council's Industrial Transformation Research Program, Cooperative Research Centres Program and initiatives under the National Innovation and Science Agenda are expected to align with the relevant Growth Centre's key themes, vision and/or Knowledge Priorities, and to engage with the relevant Growth Centre in developing a proposal.

Growth Centres also provide advice to the administrators of these programs on industry needs to ensure that industry-focussed research aligns with sector priorities. Common knowledge priorities across the sectors are outlined below. Detailed sector-specific knowledge priorities are outlined in each Sector Competitiveness Plan. The Department of Industry, Innovation and Science is working to highlight these industry research needs to the research and education sectors.

Common Knowledge Priorities identified in Sector Competitiveness Plans are:

- Developing and adopting technology and systems associated with automation and digitisation (Industry 4.0) e.g. robotics, sensors, predictive analytics, data analytics, and augmented reality
- Environmental impact and sustainability
- Additive manufacturing (3D printing)
- Advanced materials and composites
- Commercialisation pathways
- International markets and linkages: understanding key markets and how to engage globally
- How knowledge requirements will evolve with emerging technologies

Common Knowledge Priorities

Common themes across Growth Centre knowledge priorities include developing and adopting technology and systems associated with automation, digitisation, and advanced materials; environmental impact and sustainability, and how emerging technologies will impact markets.

Sector-specific Knowledge Priorities

Advanced Manufacturing (AMGC)	Food and Agribusiness (FIAL)	Medical Technologies and Pharmaceuticals (MTPConnect)	Mining Equipment, Technology and Services (METS Ignited)	Oil, Gas and Energy Resources (NERA)	Cyber Security (ACSGN)
<ul style="list-style-type: none"> • Digital design and rapid prototyping • Sustainable manufacturing and life cycle engineering • Additive manufacturing, materials resilience and repair • Bio-manufacturing and biological integration • Nano-manufacturing and micro-manufacturing • Precision manufacturing 	<ul style="list-style-type: none"> • Using genetics, novel technologies and processing techniques to produce highly differentiated and value added foods 	<ul style="list-style-type: none"> • Clinical specialty/therapy, including geriatrics, infectious disease, and immunology • Areas of science, including antimicrobial resistance, biomedical engineering, and regenerative medicine • Devices and diagnostics, including bionics, point of care diagnostics, and wearable devices 	<ul style="list-style-type: none"> • Advancing mining and beneficiation technologies such as selective mining, comminution, classification, reducing tailings/reject streams, in-situ recovery and bio-leaching 	<ul style="list-style-type: none"> • Mapping prospective basin geology across the minerals and energy sectors • Developing new technology, business models and infrastructure to adapt to the changing energy mix 	<p>Cyber security for:</p> <ul style="list-style-type: none"> • IT integrated with control systems for plant and machinery • Mobile internet • Artificial intelligence and big data • Cloud computing • Internet of Things (or connected products) • Quantum computing • Block-chain

Increasing Collaboration and Commercialisation

Australia needs greater collaboration between its businesses and world-class researchers, to translate the excellent research and scientific knowledge generated in Australia into profitable commercial realities. Australian businesses will also benefit from improved collaboration with other businesses. Businesses that work together can share risk and pool resources to create new products and processes and capture new opportunities that a single business might not have the capacity to pursue. There is significant work already underway in the Australian Government, including work in the [Cooperative Research Centres](#) (CRCs), [Cooperative Research Centre Projects](#) (CRC-Ps), the [ARC Industrial Transformation Research Programme](#) (ITRP) and the [Global Innovation Linkages Programme](#) (GIL). It is important that there is the best possible alignment between work already underway and opportunities identified by Growth Centres.

The following are common Growth Centre actions aimed at increasing commercialisation and collaboration in Sector Competitiveness Plans:

- Partnering with or establishing hubs, cluster organisations and innovation centres
- Delivering workshops targeted at common commercialisation capability gaps in collaboration with Entrepreneurs' Programme and national and local partners
- Establishing test labs and technology accelerators
- Connecting small and medium enterprises with research expertise
- Workshops and programs to address commercialisation knowledge and skills gaps for researchers and businesses
- Implementing Memoranda of Understanding with industry and research organisations including Cooperative Research Centres and peak industry and university bodies
- Establishing principles around how industry behaves and interacts on collaborative initiatives, resolve conflict, celebrate success and learn from failures

Sector-specific Commercialisation and Collaboration Priorities					
Advanced Manufacturing (AMGC)	Food and Agribusiness (FIAL)	Medical Technologies and Pharmaceuticals (MTPConnect)	Mining Equipment, Technology and Services (METS Ignited)	Oil, Gas and Energy Resources (NERA)	Cyber Security (ACSGN)
<ul style="list-style-type: none"> Leveraging government procurement to drive collaboration between firms, and to create opportunities for Australian firms in global supply chains. AMGC is partnering with the Innovative Manufacturing CRC. AMGC has a National Additive Manufacturing Hub at Monash University and a National Carbon Fibre Manufacturing Collaboration Hub at Deakin University. 	<ul style="list-style-type: none"> The industry is working together to improve innovation readiness for businesses and researchers, to achieve an efficient and effective innovation system. FIAL delivers workshops including Collaborative Circles, Fast 'N' Furious Short Courses, and connects companies through the Enterprise Solution Centre. 	<ul style="list-style-type: none"> Establishing links with research, trade and investment partners. Partnerships with and funding for accelerators and incubators, including MedTech's Got Talent, The Actuator, and ANDHealth+. MTPConnect is partnering with Ausbiotech, BioMelbourne Network, Medicines Australia, CSIRO, ARCS Australia, AMGC and eight health-related CRCs. 	<ul style="list-style-type: none"> Enabling collaboration between mining companies and METS companies through a shared strategic understanding of mining industry roadmaps. METS Ignited is partnering with CRC ORE. 	<ul style="list-style-type: none"> Commercialising new operational technology. NERA has a program where SMEs are invited to apply for a \$20,000 Innovation Voucher to deliver an innovative solutions. 	<ul style="list-style-type: none"> Help cyber security start-ups find their first customers. Make access to seed and early stage venture capital easier. Improve research focus and collaboration to assist commercialisation. Simplify government and private sector procurement processes.

Enhancing Workforce Skills and Management Capability

Strong management capability and an adaptable, highly skilled and diverse workforce are essential for Australian businesses to capture new opportunities. Confident and capable business leadership and management will enable Australia industry to maintain its competitive advantage in the face of rapid technological change and an increasingly integrated global economy. Digitisation and a move towards a service economy is transforming the way we work and the types of work we do. Aligning education and training systems with industry needs, along with workplace learning and professional development, will equip the workforce with the skills that they need to perform in high value, high skill jobs and adapt to change.

Proposed common approaches are:

- Undertaking in depth research and analysis of current and future skills needs
- Delivering workshops and programs targeted at common management capability gaps
- Publishing online resources and capability directories
- Participating in the development of training packages delivered through the national vocational education and training system
- Facilitating mentoring and work integrated learning opportunities for university students and PhD candidates

Common Skills and Management Capability Priorities

- Equipping the future workforce and management with the skills required to adapt to automation and digitisation
- Advocating for modular and flexible higher education provision needed for lifelong learning
- Building sector capacity and facilitating access on innovation, entrepreneurship and commercialisation including marketing, stakeholder management, intellectual property, regulatory affairs, leadership, finance and capital markets
- Building sector knowledge of skills and knowledge requirement to access international markets and participate in global supply chains
- Enhancing managerial and leadership skills, including for innovation and commercialisation
- How skills requirements will evolve with emerging technologies, as well as skills attraction and retention

Sector specific Skills and Management Capability Priorities

Sector specific Skills and Management Capability Priorities					
Advanced Manufacturing (AMGC)	Food and Agribusiness (FIAL)	Medical Technologies and Pharmaceuticals (MTPConnect)	Mining Equipment, Technology and Services (METS Ignited)	Oil, Gas and Energy Resources (NERA)	Cyber Security (ACSGN)
<ul style="list-style-type: none"> • Conducting sub-industry analysis to forecast industry employer skills demand. • Exploiting Australia's cost advantage in high-skilled labour by lifting the skill mix of the workforce. 	<ul style="list-style-type: none"> • Improving researchers and businesses management to take ideas to market by providing insights and foresights, channel readiness programmes, transforming business models (Fast 'N' Furious Short Course, eCommerce) 	<ul style="list-style-type: none"> • Improving sector enabling disciplines such as bioinformatics, health economics, regulatory affairs, data analytics and manufacturing. • Workshops and roundtables to identify and plan for future workforce needs. 	<ul style="list-style-type: none"> • Raising the profile and understanding of the sector to attract and retain STEM talent. • METS Ignited supports the Austmine Innovation Mentoring Program to help build managers' skills in areas including management, innovation, 	<ul style="list-style-type: none"> • Improving sector capability in complex project management skills • Ongoing development of the sector's specialist and niche skills 	<ul style="list-style-type: none"> • Attract and retain the best and brightest to cyber security • Ramp up cyber security education and training • Create vibrant industry led professional development pathways

	<p>Workshops, Capability Building Workshops).</p> <ul style="list-style-type: none"> • Market incubators will be developed to improve business knowledge, workforce skills and management capabilities. 	<ul style="list-style-type: none"> • National mentoring linking PhD students with qualified industry mentors. • Partnering and funding through a consortium of companies and universities providing pharmaceutical commercialisation training. 	<p>commercialisation and accessing supply chains.</p>		
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Improving International Engagement Capabilities and Access to Global Supply Chains

The Initiative focuses on sectors where there is growing global demand for Australian outputs, with the goal of boosting Australian business participation in international markets and global supply chains. It will achieve this goal by driving productivity and competitiveness of Australian industry through several means, including: fostering improved collaboration between industry and researchers to drive innovation, implementing regulatory reforms aimed at reducing regulatory costs for industry, improving management and workforce skills to encourage greater commercialisation and assisting Australian businesses to engage more deeply in global supply chains and export markets in order to drive increased imports.

The rise of complex global supply chains, where products are assembled from inputs across many countries, also presents opportunities for Australian businesses. Supply chains encompass the full range of activities required to take a product from conception to end use including design, research, innovation, marketing and maintenance. With strong research and development capability and a skilled workforce Australia can participate in high value parts of global supply chains.

Common approaches to improving international engagement capabilities in Sector Competitiveness Plans are:

- Leading and hosting international delegations
- Promoting the Australian sector and Australian companies at key international markets and conferences
- Publishing market intelligence to enhance understanding of key international markets
- Delivering export strategy workshops
- Identifying and disseminating international best practice
- Leveraging private and public procurement for businesses to better engage with domestic and international supply chains

Sector-specific approaches to improving international engagement capabilities

Common approaches to improving international engagement capabilities in Sector Competitiveness Plans include better engagement with overseas markets through workshops, engaging with international delegations and better understanding industry principles to support exports.

Advanced Manufacturing (AMGC)	Food and Agribusiness (FIAL)	Medical Technologies and Pharmaceuticals (MTPConnect)	Mining Equipment, Technology and Services (METS Ignited)	Oil, Gas and Energy Resources (NERA)	Cyber Security (ACSGN)
<ul style="list-style-type: none"> • Australian manufacturers are poorly linked into global value chains, with the lowest level of foreign inputs used to produce goods for export of any major economy. • Encouraging greater foreign engagement by partnering with Austrade to map under-served export markets 	<ul style="list-style-type: none"> • Facilitate international market and supply chain success through leading and supporting clusters, developing online catalogues, and trade missions • Connecting industry with export opportunities through an Export Market Database and Capability Building Workshops, connecting buyers and suppliers with the Australian Food Catalogue. 	<ul style="list-style-type: none"> • Encouraging greater use of Australia as a destination for products' clinical development process. This will position Australia to better access emerging Asian markets. • Participating in Medtech Innovation showcases, fairs and business delegations in Asian markets, collaborating with Austrade on inbound trade missions to attract investment in the Australian medtech sector. 	<ul style="list-style-type: none"> • Enhancing SME ability to partner with original equipment manufacturers to increase their access to large global mining companies and related international supply chains 	<ul style="list-style-type: none"> • Exploiting the domestic and international opportunities presented by the use of LNG as a marine fuel 	<ul style="list-style-type: none"> • Support Australian Firms to develop scalable services delivery models. • Develop cyber security as an educational export. • Attract MNCs to use Australia as an export base for the region

Reducing Regulatory Burden

The Australian Government is committed to regulatory renewal and streamlining regulatory processes to create an environment that encourages businesses to embrace innovation and new technologies. While poorly designed and duplicative regulations can have a negative impact, well-designed regulation can provide industry with an optimal business environment, freeing resources at the firm level to focus on growth, competitiveness, productivity and investment. There are also opportunities to drive best practice across sectors through the adoption of uniform industry standards and conformance frameworks.

The Growth Centres' Regulation Reform Agendas identify high priority reforms across all levels of government and industry self-regulation. Each Regulation Reform Agenda identifies specific regulation reform opportunities which could seek to improve competitiveness and productivity in the relevant sector. The Australian Government's National Business Simplification Initiative will work with Commonwealth agencies and state and territory governments to progress regulatory reform.

Common approaches to reducing regulatory burden identified in Sector Competitiveness Plans are:

- Development and adoption of international industry standards
- Harmonisation of state, territory and Commonwealth legislation,
- Regulatory improvement and development of frameworks to support innovation and technological development and adoption of best practice
- Reviewing and reforming industry self-imposed regulation
- Advocating for consistency of policy and regulation to promote certainty and encourage investment
- Advocating for a strong and stable intellectual property framework to ensure a navigable regulatory environment
- Highlighting policy settings to encourage better collaboration between industry and the research sector

Economy-wide framework conditions affecting one or more sectors

- Complexity of business registration processes
- A lack of harmonisation of work health and safety (WHS) legislation and practice
- A need for harmonisation of occupational licensing rules
- An inflexible workplace relations framework
- Unclear and duplicative environmental regulation
- International standards and supporting interoperability

Sector specific issues and approaches to reducing regulatory burden

Advanced Manufacturing (AMGC)	Food and Agribusiness (FIAL)	Medical Technologies and Pharmaceuticals (MTPConnect)	Mining Equipment, Technology and Services (METS Ignited)	Oil, Gas and Energy Resources (NERA)
<ul style="list-style-type: none"> • Continuing to identify regulatory issues including: • Participating in the Prime Minister's Industry 4.0 Taskforce to drive transition to Industry 4.0 in Australia. • Scanning existing reviews for opportunities 	<ul style="list-style-type: none"> • Streamlining commercial auditing practices. • Providing a one-stop shop for information on regulation and Non-Tariff Measure for key export markets. • Improving industry standards through Food Safety Auditing Project aimed at reducing duplication of audits. • Providing a sounding board for industry through development of an online Red Tape Register. 	<p>Continuing to seek regulatory issues to address including:</p> <ul style="list-style-type: none"> • Working with the Therapeutic Goods Administration and the sector on the regulatory aspects of the Sansom Review, 3D Printing, Precision Medicine, Future Technologies and Medicinal Cannabis. 	<ul style="list-style-type: none"> • Harmonisation of Occupational Health and Safety legislation and practice. • Developing a common understanding of interoperability in mining and related industries. 	<ul style="list-style-type: none"> • Best practice asset closure and rehabilitation. • Alignment of Australian oil and gas standards with international best practice.