

Growth State: Our Plan for Prosperity

Health and Medical Industries Discussion Paper



Government
of South Australia

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Growth State

The South Australian Government is committed to the growth of the economy through industry-led initiatives. To ensure the state is on track to deliver economic benefits, a report was commissioned to review international and interstate engagement functions.

In March 2019, the Hon Steven Joyce released his review, identifying key sectors where the state has a comparative advantage, including the Health and Medical Industries (HMI) sector. The HMI sector is identified as one of the newer, but fast-growing sectors, where the state holds comparative advantages which will create economic growth opportunities. As identified in the Joyce Review, the key themes within the sector are the establishment and growth of the health and biomedical businesses, clinical trials and aged care.

The report provides the groundwork for the development of the Growth State Plan (the Plan) and the task for the government, through the Department for Trade, Tourism and Investment (DTTI) is to support industry in developing a plan to achieve growth and create the economic environment in the state for businesses to thrive.

This discussion paper provides the conversation point for industry engagement, outlining the known strengths and collaborations in the sector, recognising industry must take the lead to ensure success. The government will work with the sector to deliver collaborative approaches to projects enabling greater industry-led growth.



Definition of Health and Medical Industries

The health and medical sector is broad, and touches on multiple industries and fields. The sector is often viewed in terms of services provided such as:

- Medical care including general practice doctors, nursing care and pharmacy
- Allied health professions, including physiotherapy, occupational therapy, speech pathology, audiology, dietetics and medical imaging
- Hospital care, including emergency and essential care and elective health
- Aged care services (in home care and residential care)
- Disability services
- Wellness and supported living
- Adelaide BioMed City, which is said to be one of the largest life sciences precincts in the southern hemisphere
- The opportunities at Tonsley Innovation District, including the Medical Device Partnering Program, the Global Centre for Modern Ageing Living Lab and other start-ups in the precinct
- Leveraging other strategic precincts such as the co-working space at Lot Fourteen and the Thebarton Hi-Tech Precinct which is home to the former TechInSA incubator.

For the purposes of developing the Plan, eight sub-sectors within HMI have been identified as targets for growth:

- Ageing and the care industry
- Biotechnology
- Clinical trials
- Digital health
- Medical devices
- Medical tourism
- Nutraceuticals and traditional medicine
- Pharmaceuticals.

Health service provision is a cost to consumers and governments at both the federal and state level. The driver for economic growth will be the ability to provide consumers with better services at a lower cost through developing technologies, investing in infrastructure, assets (including data) and capabilities and assisting local companies access international markets.

These external opportunities for growth are present both locally and globally in:

- The demand for health, pharmaceutical and medical goods and services
- Specialist medical technologies being rapidly designed and prototyped
- Specialist health, medical and care sector knowledge, expertise and education programs
- Research and development activities including research precincts

Additional sub-sector growth targets may be identified through industry consultation and direct feedback from companies.

Whilst stakeholder engagement with the Plan is based on these sub-sectors, it is acknowledged that the biggest opportunities for economic success will come through the development of collaborative projects which run across these sub-sectors.



The Economic View

South Australia's combined health and residential (aged) care delivery services are amongst the fastest growing and largest components of the South Australian economy – capturing around 12 per cent of Gross State Product (GSP), having grown at around 4.7 per cent per annum (real) over the past decade.

The bespoke definition of the HMI sector provides a challenge in determining both the current levels of growth for the sector and future GSP growth targets. Broad estimates within the South Australian Government consider the average level of growth in the sector of the past eight years as below three per cent. As outlined in Table 1, these estimates do not account for all activity within the HMI sector, as there are a number of gaps in the available data.

To achieve the growth rates targeted in the Growth State Plan an external focus is required. The recommended focus of engagement covers the areas where investment can be encouraged, and the economy could build and grow its products and services for sale or orientation outside of the state.

Table 1 shows that quantifying the value of the HMI sector will require assessment of merchandise exports; labour force data; service trade; input-output tables (I-O); research data/expenditure; as well as micro-based firm assessments. The table also notes where there are gaps in the data available.

Professional services, medical tourism and wellbeing have limited available data. To build and understand success in these areas, de-identified data will be required from companies.

Table 1: Health and medical sector and data sources and coverage

HEATH AND MEDICAL SUB-SECTOR	DATA SOURCE	COMMENT
MEDICAL DEVICES	- Exports (ABS) - I-O table (Remplan) - Labour force data (ABS) - CABEE (ABS) - Micro-analysis	ANZSIC Code – - Specialised and other machinery and equipment man (part coverage) - Prof, scientific, computer and electronic equip man (part coverage) - CABEE (counts of Australian businesses) - AHECC export codes
PHARMACEUTICALS	- Exports (ABS) - I-O table (Remplan) - Labour force data (ABS) - CABEE (ABS)	ANZSIC Code – - Human pharmaceutical product manufacturing - Veterinary pharmaceutical product manufacturing - CABEE - AHECC export codes
RESEARCH	Medical research funding	- Research and development expenditure – HERD and BERD (part coverage) ABS 8111.0 - NHMRC grants/ARC grants - Patent trend
MEDICAL TRIALS	Trial expenditure data	- ANZ clinical trials register - Clinicaltrials.gov
HEALTH/MEDICAL TOURISM AND WELLBEING	Micro analysis	- Firm based assessment - Industry organisations
HEALTH AND AGEING PROFESSIONAL SERVICES	- Service exports - Micro analysis – business survey - NDIS provider survey	- Professional services (part coverage) - I-O net exports – identify the 'export' component
CONFERENCES	Conference publications	Limited publication/quantification
EDUCATION	- NCVER - AusTrade data - HED education survey	Overlap with international education

Economic contribution

Table 2 summarises the key contributions estimated by each sub-sector in the health and medical industries sector in 2017-18 – where data is available.

The key areas of professional services, and health and medical tourism and wellbeing activity are excluded from the data. As discussed, data for these areas will need to be sourced through industry.

The available data by sub-sector activity has been used to estimate broader value-add and impact estimates using REMPLAN (input-output) modelling.

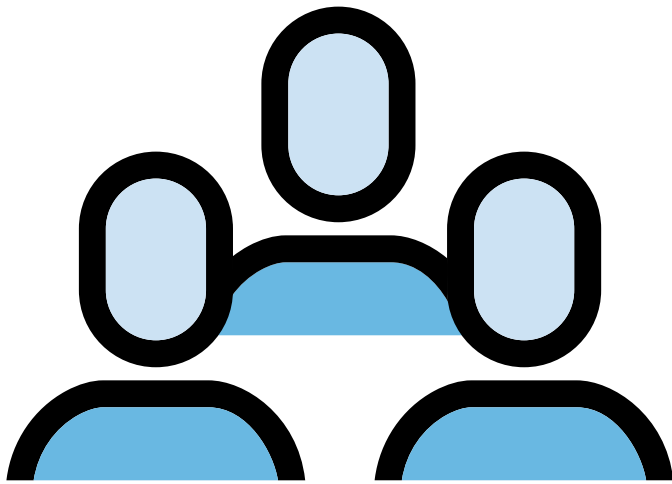
Outside of these areas as shaded in blue, are target areas for data capture, with respective benchmark and future sub-targets defined as below.

Analysis in Table 2 shows the contribution of health and medical industries to the South Australian economy as:

- Total expenditure (or incomes) of \$4.2 billion
- Overseas and interstate exports of \$876 million
- Direct contribution to GSP of \$2.3 billion or around 2.1 per cent
- Direct employment of 23 789 (or 2.1 per cent of all South Australian people employed)
- With a further indirect contribution of \$870 million or an additional 0.8 per cent
- Total impact of value-adding (direct and indirect) of \$3.2 billion or 3 per cent of total GSP.

Table 2: Summary data and contribution to the South Australian economy, 2017-18, \$m

Sub sector/activities	Value-added (GSP) \$m	Indirect (GSP) \$m	Expenditure/ income \$m	Employment	Export \$m
Pharmaceuticals (human & vet)	107	93	566	593	88
Medical device manufacturing	164	141	1,244	2,131	133
Professional services	MICRO				
Research	246	166	520	2,194	
Medical trials	66	45	140	591	
Health & medical tourism/ wellbeing	MICRO				
Education (international)	197	63	226	1,489	0
Health and aged care service exports	417	140	MICRO	5,397	655
NDIS	1,083	222	1,520	11,400	
Total	2,280	870	4,216	23,789	876



Industry Partners

The diversity of the industry partners is recognised across three tiers of point of care, start up and established businesses, and research and commercialisation. Within each of these are various 'touch-points' for industry and the community which are important factors in considering growth opportunities.

Point of care:

- SA Health
- Private health providers
- Allied health providers
- Aged care providers
- Disability service providers
- End consumers/the community.

Start-up and established businesses:

- Pharmaceutical companies
- Medical device companies
- Digital technology companies
- Biotechnology companies
- Training providers
- Contract research organisations
- Nutraceuticals.

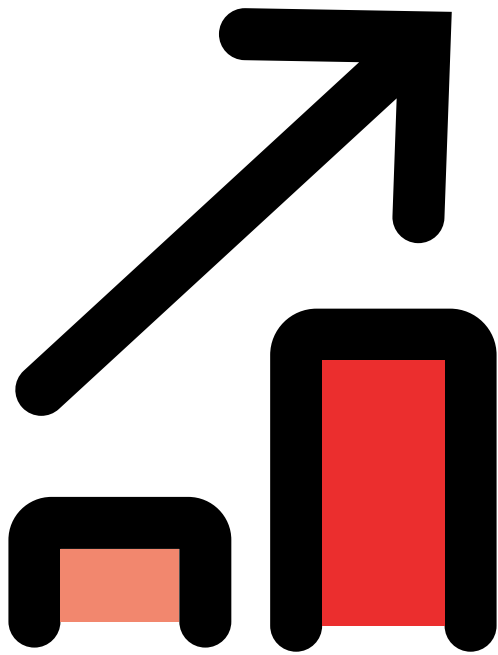
Research and commercialisation:

- Research institutes
- SA Health
- Medical Device Partnering Program (MDPP)
- CSIRO
- SAHMRI.

Organisations promoting growth through sector collaborations include:

- Adelaide BioMed City
- Medical Device Partnering Program (MDPP)
- MedTEC SA
- Ageing Well International
- Peak bodies including National Disability Services, three aged care peak bodies
- Clinical trial companies such as CMAX, Avance Clinical and Syneos Health.

In addition, ancillary services such as accounting and consultancy firms are considered important industry partners creating the environment the state needs for business growth. They assist in supporting companies receiving the research and development tax incentives and/or assist companies with establishment and growth opportunities.



The Way Forward

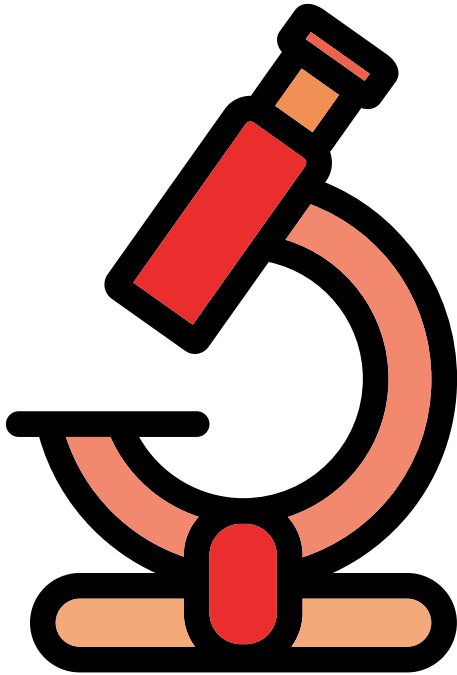
The Minister for Trade, Tourism and Investment has established the HMI Ministerial Advisory Panel (MAP), a group of industry representatives which has supported the development of this discussion paper. The HMI MAP members are drawn from the eight identified sub-sectors and are a coordinating point for developing the sector strategy.

Critical to the state's comparative advantage is the ability to link the sub-sectors and take advantage of the emerging opportunities.

The HMI MAP has indicated six priority areas which will deliver these opportunities. These are:

- Clinical trials
- Education and training
- Smart specialisation
- Data accessibility
- Living well
- Enhanced collaborations.

The opportunities and initiatives of each of these areas are discussed in further detail. Feedback is sought from industry on each of these project themes. To facilitate this input, a series of questions is put to industry around the project themes. The questions are designed to facilitate input into the development of the sector strategy and are not an exhaustive list, nor is it a requirement to respond to every question.



Clinical Trials

Clinical trials provide advantages for South Australia through research and business growth, recognition at the forefront of medical research and better patient outcomes, including lower cost alternatives. Clinical trials directly support GSP growth, have a positive impact on costs and care outcomes and assist in employee and competence retention.

South Australia is already home to clinical trials across pharmaceutical, medical technology and digital health sub-sectors, and linkages are developed with the care sector.

There is momentum from industry, researchers and government to ensure best practice processes in administering clinical trials.

The challenge is to draw together key stakeholders to create an internationally competitive industry for clinical trials in South Australia.

Initiatives

To further develop South Australia's reputation in clinical trials, a process to streamline ethics and governance approvals is being considered. To this end, a specific working group has been formed to work on the framework.

To develop the HMI Sector Strategy, further work will be undertaken in clinical research and trials and stakeholders are invited to provide feedback on the challenges faced in South Australia.

Challenges

What does success look like for the clinical trials industry and how will it be measured?

What creates a successful business environment in the state for you?

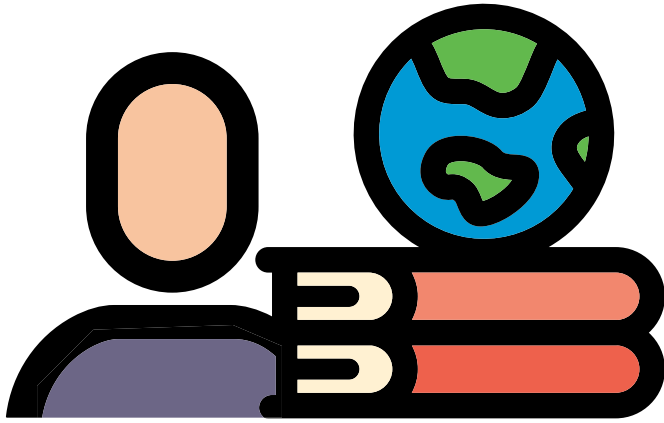
Are there core facilities that can be supported to boost growth?

Are there other industries or companies that link to developing your research, trials or business?

What blocks development, and how can the blockages be removed?

How can we grow our international reputation in clinical trials?

What data can you share with government to help measure the success of initiatives in the sector?



Education and Training

South Australia holds a wealth of knowledge and expertise, and critical to business success is the ability to demonstrate and train practitioners in the use of our innovative methods and technologies.

Existing facilities in the state include university teaching and training facilities such as the dental hospital or Adelaide Health Simulation.

The opening of these facilities to more stakeholders has the potential to provide the state with new revenue streams – the facilities have potential as training facilities for international companies and training sites for our local companies to demonstrate the use of their innovative technologies.

We have an opportunity to be at the forefront of education, and focus on future career paths, where education translates into the industry value chain.

We need to harness available research funding by developing collaborative opportunities across research and industry.

Initiatives

To develop the HMI Sector Strategy, opportunities to expand local facilities and develop collaborative use approaches are being considered. Stakeholders are invited to provide feedback on the existing facilities in South Australia, and the opportunities to collaborate to make best use of the facilities.

Challenges

What does success look like for the growth of education and training in South Australia?

What are the future career paths or technologies where we can develop our training expertise?

What creates a successful international training environment?

Which are the core facilities that can be supported to boost growth in the sector?

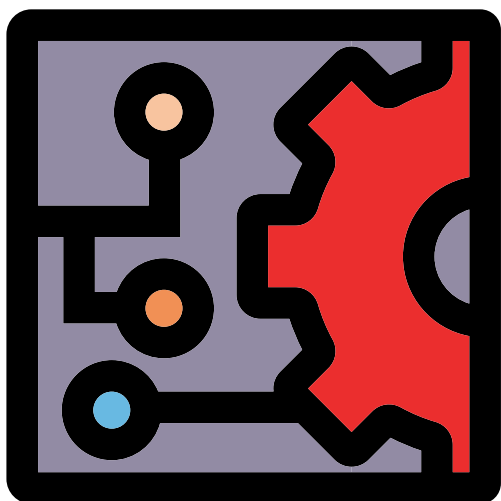
Which industries will best link with the availability of education and training facilities?

What blocks development, and how can the blockages be removed?

How can we develop our international reputation in clinical education and training?

What linkages can we develop between medical tourism and clinical training markets? And what hospitality facilities are needed to support the growing market?

What data can you share with government to help measure the success of initiatives in the sector?



Smart Specialisation

The rapidity of technology change forces continuous adaption and innovation, the goal of smart specialisation is to identify and leverage our strengths, uncover hidden opportunities and generate new collaborative opportunities for industry in this high value add sector.

Our strengths as a state include our research facilities, our collaborative efforts such as Adelaide BioMed City, our clean environment and our reliability as a provider of quality goods and services.

Our opportunities include the development of frontier technology in areas such as precision medicine and artificial intelligence led designs, where local industry and local researchers have a collaborative focus and can attract research funding.

Initiatives

Cooperative research centres are a forum where South Australian companies can work with industry and researchers to develop and market new products and ideas.

Stakeholders are asked to provide advice on the specialisations, such as digital health or artificial intelligence applied to medical imaging and drug discovery, where South Australia can position itself at the forefront of new and emerging technologies and innovations, and the collaborations which can bring this about.

Challenges

What sub-sectors in the local HMI are, or have the potential to be global or regional leaders?

What are the smart specialisation opportunities in your field of activity, and what would need to happen or is already happening to leverage these opportunities?

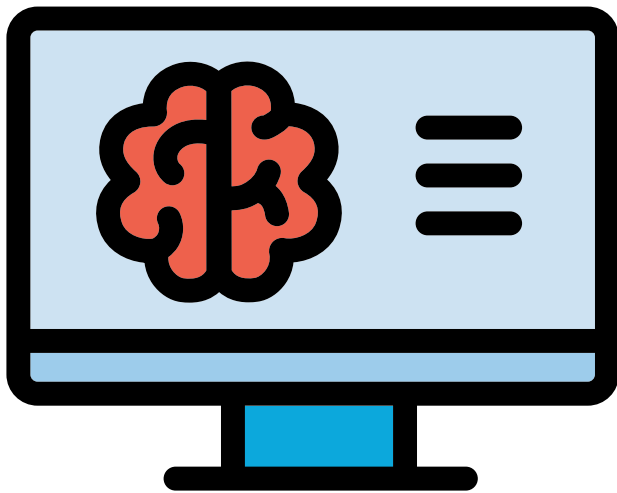
What creates a successful business environment to grow these smart specialisations?

What are the supply chains needed for these smart specialisations?

What blockages do you see in developing the sector, and the blockages to be removed?

How can we develop our international reputation in these specialist fields, and what are the opportunities to develop them in areas of medical tourism or the care sector?

What data can you share with government to help measure the success of initiatives in the sector?



De-identified Data

Access to de-identified data provides a source of information which can be used for industry development and to create international interest in data analysis.

South Australia's population is recognised as being less mobile, which provides an opportunity for more comprehensive longitudinal studies and stronger datasets.

Whilst national data capture is important, the challenges with data accessibility include privacy and legal considerations and the need for data to be collected in a format which can be consolidated from the various providers in the health system continuum.

Initiatives

South Australia has a global leadership position in machine learning based on the Adelaide located Massachusetts Institute of Technology (MIT) Living Lab best practice.

Current data sources available in South Australia include the SA/NT DataLink and the Registry of Older South Australians (ROSA), and discussions have commenced between the state and Commonwealth Governments on this complex area.

Challenges

What data that is not already publicly available would help industry grow?

What creates a successful data sharing environment?

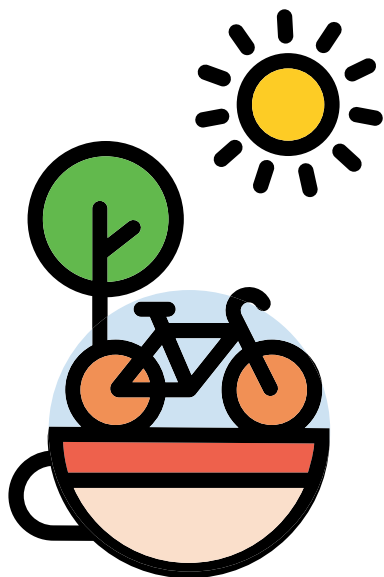
What data management capability are you looking for?

What blockages do you see in developing the sector, and what can be done to remove those blockages?

How can we develop our international reputation as data management experts?

What (if any) are the export opportunities for de-identified data?

What industry developed data could be made available to researchers?



Living Well

The wellness industry is a growing industry, encompassing ageing well, independent living, wellness products and services. The ageing population globally, the National Disability Insurance Scheme (NDIS) and shifting social behaviours are driving change for this sub-sector, with increasing demand for a higher standard of living throughout our lives. With longer lifespans, opportunities are present in a range of HMI fields, including preventative medicine and nutrition.

This opportunity is recognised as a strength in growing digital health, assistive technology and med tech opportunities. To further economic growth and identify business opportunities, more collaboration is required. The expansion of available data sources will assist researchers identify opportunities and innovations in this field.

Stakeholders are asked to consider what the opportunities for industry in development, prototyping, manufacture and sales of products and services which will support independent living, and how we provide interaction between the consumers and innovators in this developing market.

Initiatives

South Australia is home to Ageing Well International (AWI) and the Global Centre for Modern Ageing Living Lab (GCMA) both of which promote collaborative approaches to drive economic growth in the sector.

Providers of care services in South Australia have collaborated to maximise the social and economic benefits of the NDIS. They are working together in civic partnership to deliver a disability industry and workforce strategy.

South Australia is the home of the MIT Living Lab, focusing on 'social physics', looking at using big data to build a predictive, computational theory of human behaviour to engineer better social systems.

CISCO has named Adelaide as its first smart and connected 'Lighthouse City' in Australia.

South Australia is also home to a number of research centres across the living well theme.

Challenges

What does success look like for your business, and how will you measure it?

What creates a successful living well business environment in the state for you?

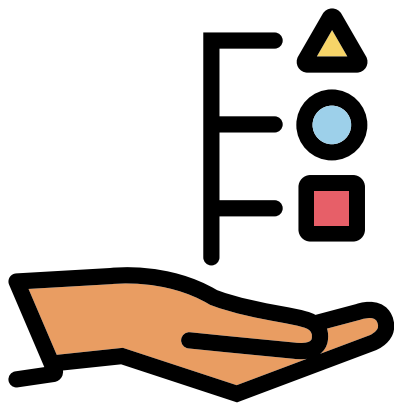
Are there core facilities that can be supported to boost growth in this sub-sector?

In what fields do we have recognised expertise that would provide living well opportunities, and what linkages are there to the health and medical service provision?

What blockages do you see in developing the sector, and how can government help remove them?

How can we develop our international reputation?

What data can you share with government to help measure the success of initiatives in the sector?



Emerging Themes, Collaborations, Products and Services

South Australia has a smaller population than our counterparts, however the advantage this brings is the development of networks and linkages between our sectors. A great example of this is the achievement of Micro-X — a company that started in South Australia with expertise in medical x-ray machinery that has now partnered with an international defence company for the use of the technology.

Our strength is our ability to collaborate and develop niche opportunities through the exchange of ideas across sub-sectors and sectors.

We are well positioned to collaborate on new and emerging themes such as the decentralisation of healthcare and the introduction of new therapies for currently incurable diseases, which impacts on the way health is delivered.

Initiatives

International engagement and collaboration is supported through the South Australian Government's business missions program and the international network of trade and investment offices. The information accessed through these missions and should be expanded to provide information to South Australian companies on procurement and tender processes in overseas markets, and introductions to potential buyers.

Challenges

What are the key international events or markets the government should focus on?

For your health and medical sub-sector, which country should we focus on for the next business mission?

Will the development of a capability statement help develop collaborative opportunities? If so, what would this capability statement look like?

How can your industry fit into a collaborative approach, or are there other opportunities in your industry that should be considered?

What parts of the total value or supply chain are missing in South Australia that we should be trying to attract?

What blocks the growth of the sector, and what can be done to remove the blockages?

How can we develop our international reputation in the niche markets created by collaborations?

Are there opportunities for medical tourism through the creation of more collaborations?

What are the emerging themes which have the potential to be the focal point for research funding or other collaborations?

What are the emerging industries or projects in the sector where South Australia could have a comparative advantage or gain advantage from early market entry?

Next steps

Feedback on this discussion paper can be sent via email to DTTI.HMIFeedback@sa.gov.au or provided in stakeholder engagement sessions being held by the Department for Trade, Tourism and Investment.

A draft HMI Sector Strategy will be released late in 2019, and a further round of stakeholder consultations will be held at that time.



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